Prepared for
Illinois Power Resources Generating, LLC

Date
January 31, 2023

Project No.
1940102203-007

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

ASH POND

EDWARDS POWER PLANT

BARTONVILLE, ILLINOIS

CCR UNIT 301

RAMBOLL Bright ideas. Sustainable change.

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT EDWARDS POWER PLANT ASH POND

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Description	**Annual Report in Support of the CCR Rule Groundwater Monitoring Program**

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ACRONYMS AND ABBREVIATIONS

§	Section
35 I.A.C.	Title 35 of the Illinois Administrative Code
40 C.F.R.	Title 40 of the Code of Federal Regulations
AP	Ash Pond
ASD	Alternate Source Demonstration
CCR	coal combustion residuals
CMA	Corrective Measures Assessment
EPP	Edwards Power Plant
GWPS	groundwater protection standard
IEPA	Illinois Environmental Protection Agency
NA	not applicable
NRT/OBG	Natural Resource Technology, an OBG Company
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SAP	Multi-Site Sampling and Analysis Plan
SSI	Statistically significant increase
SSL	statistically significant level
TBD	to be determined

EXECUTIVE SUMMARY

This report has been prepared to provide the information required by Title 40 of the Code of Federal Regulations (40 C.F.R.) Section (§) 257.90(e) for the Ash Pond (AP) located at the Edwards Power Plant (EPP) near Bartonville, Illinois.

Groundwater is being monitored at the AP in accordance with the assessment monitoring program requirements specified in 40 C.F.R. § 257.95. Assessment monitoring was initiated at the AP on April 9, 2018.

No changes were made to the monitoring system in 2022 (no wells were installed or decommissioned under 40 C.F.R. § 257). As discussed in Section 5 of this annual report, the monitoring well network will be updated in 2023 to use the same monitoring well network developed for compliance with Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845, which was submitted to the Illinois Environmental Protection Agency (IEPA) via an operating permit application.

No Statistically Significant Levels (SSLs) of 40 C.F.R. § 257 Appendix IV parameters over groundwater protection standards (GWPSs) were determined in 2022, but statistically significant increases (SSIs) of Appendix III parameters greater than background values were determined. Consequently, a Corrective Measures Assessment (CMA) is not required and the AP remains in the Assessment Monitoring Program.

The EPP was retired from service on December 31, 2022 and is now a closed power plant.

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of Illinois Power Resources Generating, LLC, to provide the information required by 40 C.F.R. § 257.90(e) for the AP located at the EPP near Bartonville, Illinois.

In accordance with 40 C.F.R. § 257.90(e), the owner or operator of a coal combustion residuals (CCR) unit must prepare an Annual Groundwater Monitoring and Corrective Action Report for the preceding calendar year that documents the status of the Groundwater Monitoring and Corrective Action Program for the CCR unit, summarizes key actions completed, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year. At a minimum, the annual report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit.
2. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.
3. In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs.
4. A narrative discussion of any transition between monitoring programs (*e.g.*, the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase relative to background levels).
5. Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.
6. A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:
    i. At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.
    ii. At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.
    iii. If it was determined that there was a statistically significant increase over background for one or more constituents listed in Appendix III of §257 pursuant to §257.94(e):
        A. Identify those constituents listed in Appendix III of §257 and the names of the monitoring wells associated with such an increase.
        B. Provide the date when the assessment monitoring program was initiated for the CCR unit.

iv. If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV of §257 pursuant to §257.95(g) include all of the following:

   A. Identify those constituents listed in Appendix IV of §257 and the names of the monitoring wells associated with such an increase.

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

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

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

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

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

This report provides the required information for the AP for calendar year 2022.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

No changes have occurred to the Monitoring Program status in calendar year 2022 and the AP remains in the assessment monitoring program in accordance with 40 C.F.R. § 257.95.

3. KEY ACTIONS COMPLETED IN 2022

The assessment monitoring program is summarized in **Table A** on the following page. The groundwater monitoring system, including the CCR unit and all background and compliance monitoring wells, is presented in **Figure 1**. No changes were made to the monitoring system in 2022 (no wells were installed or decommissioned). In general, one groundwater sample was collected from each background and compliance well during each monitoring event. All samples were collected and analyzed in accordance with the Sampling and Analysis Plan (SAP) (Natural Resource Technology, an OBG Company [NRT/OBG], 2017a). Potentiometric surface maps for both monitoring events in 2022 are included in **Figures 2 and 3**. All monitoring data and analytical results obtained under 40 C.F.R. § 257.90 through 257.98 (as applicable) in the third quarter of 2021 and both monitoring events in 2022 are presented in **Tables 1 through 3**. Laboratory reports for the third quarter of 2021 and both monitoring events in 2022 are included in **Appendix A**.

Analytical data were evaluated in accordance with the Statistical Analysis Plan (NRT/OBG, 2017b) to determine any SSLs of Appendix IV parameters over GWPSs and SSIs of Appendix III parameters greater than background values. SSL notifications were completed in accordance with 40 C.F.R. § 257.95(g). SSIs are highlighted in **Table 2**. Statistical background values are provided in **Table 4** and GWPSs in **Table 5**. A flow chart showing the statistical methodology for determination of background values is included as **Appendix B**. A summary of the determination of SSLs in included in **Table 6**. A flow chart showing the statistical methodology for determination of SSLs is included as **Appendix C**.

Additional monitoring wells were installed in 2022 under 35 I.A.C. § 845 and groundwater samples were collected from the installed wells. The additional monitoring wells were installed for further hydrogeologic investigation and water quality delineation. Following investigation activities and collection of background groundwater quality, a subset of monitoring wells will be proposed for inclusion with the groundwater monitoring well network. EPP was retired from service on December 31, 2022 and is now a closed power plant.

Table A. 2022 Assessment Monitoring Program Summary

Sampling Dates	Analytical Data Receipt Date	Parameters Collected	SSL(s)	SSL(s) Determination Date	ASD Completion Date
February 16, 2022	March 10, 2022	Appendix III Appendix IV	none	June 08, 2022	NA
July 25, 2022	October 05, 2022	Appendix III Appendix IV Detected [1]	none	January 03, 2023	NA

Notes:

ASD: Alternate Source Demonstration

NA: not applicable

SSL: Statistically Significant Level

TBD: to be determined

[1] Groundwater sample analysis was limited to Appendix IV parameters detected during previous events in accordance with 40 C.F.R. § 257.95(d)(1).

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

No problems were encountered with the Groundwater Monitoring Program during 2022. Groundwater samples were collected and analyzed in accordance with the SAP and all data were accepted.

5. KEY ACTIVITIES PLANNED FOR 2023

The following key activities are planned for 2023:

- Beginning in 2023, the current monitoring well system will be updated to use the same monitoring well network that was proposed for compliance with 35 I.A.C. § 845 which includes all of the monitoring wells used in the 2022 monitoring system. This is a logical step toward aligning the two regulatory programs. The following documents support the expanded monitoring system for 2023:
  - Hydrogeological Site Characterization Report (Ramboll, 2021), which expands upon the hydrogeologic information provided in the Hydrogeologic Monitoring Plan
  - Multi-Site SAP (Ramboll, 2022a)
  - Multi-Site Quality Assurance Project Plan (Ramboll, 2022b)
  - Multi-Site Data Management Plan (Ramboll, 2022c)
  - Multi-Site Statistical Analysis Plan and Certification (Ramboll, 2022d)
  - 40 C.F.R. § 257 Groundwater Monitoring Plan (Ramboll, 2022e), which replaces the monitoring plan provided in the Hydrogeologic Monitoring Plan
  - Monitoring Well Network Certification
- Continuation of the Assessment Monitoring Program with semi-annual sampling scheduled for the first and third quarters of 2023.
- Complete evaluation of analytical data from the compliance wells to determine whether an SSL of Appendix IV parameters above GWPSs has occurred.
- If an SSL is identified, potential alternate sources (*i.e.,* a source other than the CCR unit caused the SSL or that the SSL resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality) will be evaluated.
  - If an alternate source is identified to be the cause of the SSL, a written demonstration will be completed within 90 days of SSL determination and included in the 2023 Annual Groundwater Monitoring and Corrective Action Report.
  - If an alternate source(s) is not identified to be the cause of the SSL, the applicable requirements of 40 C.F.R. §§ 257.94 through 257.98 (*e.g.,* assessment of corrective measures) as may apply in 2023 will be met, including associated recordkeeping/notifications required by 40 C.F.R. §§ 257.105 through 257.108.
    - Additional monitoring wells were installed in 2022 under 35 I.A.C. § 845 and groundwater samples were collected from the installed wells. The additional monitoring wells were installed for further hydrogeologic investigation and water quality delineation. Following investigation activities and collection of background groundwater quality, a subset of monitoring wells will be proposed for inclusion with the groundwater monitoring well network for 35 I.A.C. § 845 and 40 C.F.R. § 257.

6. REFERENCES

Natural Resource Technology, an OBG Company (NRT/OBG), 2017a. Sampling and Analysis Plan, Edwards Ash Pond, Edwards Power Station, Bartonville, Illinois, Project No. 2285, Revision 0, October 17, 2017.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017b. Statistical Analysis Plan, Duck Creek Power Station, Edwards Power Station, Illinois Power Resources Generating, LLC, October 17, 2017.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021. Hydrogeological Site Characterization Report, the Ash Pond, Edwards Power Plant, Bartonville, Illinois. October 21, 2021.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022a. Multi-Site Sampling and Analysis Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022b. Multi-Site Quality Assurance Project Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022c. Multi-Site Data Management Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022d. Multi-Site Statistical Analysis Plan, 40 C.F.R. § 257. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022e. 40 C.F.R. § 257 Groundwater Monitoring Plan, the Ash Pond, Edwards Power Plant, Bartonville, Illinois. December 28, 2022.

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
AP05S	UA	32.87 - 37.64	Background	40.59881	-89.66191	02/16/2022	5.38	438.15
AP05S	UA	32.87 - 37.64	Background	40.59881	-89.66191	07/25/2022	5.91	437.62
AP06	UCF	19.93 - 24.72	Water Level Only	40.60104	-89.66276	02/16/2022	4.61	437.56
AP07S	UCF	29.95 - 34.74	Water Level Only	40.59793	-89.66692	02/16/2022	25.09	435.99
AP07S	UCF	29.95 - 34.74	Water Level Only	40.59793	-89.66692	07/25/2022	25.51	435.57
AP07D	BCU	55.01 - 64.59	Water Level Only	40.59794	-89.66693	02/16/2022	37.13	423.76
AP07D	BCU	55.01 - 64.59	Water Level Only	40.59794	-89.66693	07/25/2022	28.08	432.81
AP08	CCR	9.99 - 19.58	Water Level Only	40.59458	-89.66873	02/16/2022	7.91	452.69
AP08	CCR	9.99 - 19.58	Water Level Only	40.59458	-89.66873	07/25/2022	9.18	451.42
AP09	CCR	9.79 - 19.39	Water Level Only	40.59149	-89.66630	02/16/2022	8.36	451.86
AP09	CCR	9.79 - 19.39	Water Level Only	40.59149	-89.66630	07/25/2022	8.62	451.60
APW-01	UCF	7.6 - 18	Water Level Only	40.60013	-89.66512	02/16/2022	5.64	435.43
APW-01	UCF	7.6 - 18	Water Level Only	40.60013	-89.66512	07/25/2022	6.34	434.73
APW-02	UCF	39.6 - 50	Water Level Only	40.59423	-89.66564	02/16/2022	9.05	455.87
APW-02	UCF	39.6 - 50	Water Level Only	40.59423	-89.66564	07/25/2022	9.21	455.71
APW-03	UCF	19.6 - 30	Water Level Only	40.59126	-89.66384	02/16/2022	7.90	436.47
APW-03	UCF	19.6 - 30	Water Level Only	40.59126	-89.66384	07/25/2022	9.44	434.93
APW-04	UCF	9.6 - 20	Water Level Only	40.58791	-89.66373	02/16/2022	7.28	432.38
APW-04	UCF	9.6 - 20	Water Level Only	40.58791	-89.66373	07/25/2022	8.51	431.15
AW-05	UA	15.87 - 20.47	Water Level Only	40.59864	-89.66641	02/16/2022	8.37	435.00
AW-05	UA	15.87 - 20.47	Water Level Only	40.59864	-89.66641	07/25/2022	8.99	434.38
AW-06	UA	36.6 - 41.09	Compliance	40.59424	-89.67005	02/16/2022	25.61	435.96
AW-06	UA	36.6 - 41.09	Compliance	40.59424	-89.67005	07/25/2022	27.63	433.94
AW-08	UA	47.55 - 57.19	Background	40.59396	-89.66200	02/16/2022	23.75	438.79
AW-08	UA	47.55 - 57.19	Background	40.59396	-89.66200	07/25/2022	23.37	439.17
AW-09	UA	47.14 - 51.62	Compliance	40.59042	-89.66878	02/16/2022	25.57	435.88
AW-09	UA	47.14 - 51.62	Compliance	40.59042	-89.66878	07/25/2022	26.43	435.02
AW-10	UA	27.62 - 32.23	Compliance	40.59073	-89.66383	02/16/2022	1.88	438.05
AW-10	UA	27.62 - 32.23	Compliance	40.59073	-89.66383	07/25/2022	2.31	437.62
AW-11	UA	24.21 - 28.81	Compliance	40.58726	-89.66378	02/16/2022	5.40	434.47
AW-11	UA	24.21 - 28.81	Compliance	40.58726	-89.66378	07/25/2022	6.22	433.65
AW-12	UA	26 - 31	Water Level Only	40.59107	-89.66133	02/16/2022	7.60	436.20
AW-12	UA	26 - 31	Water Level Only	40.59107	-89.66133	07/25/2022	8.45	435.35
AW-13	UA	25 - 30	Water Level Only	40.58838	-89.66371	02/16/2022	5.52	435.74

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EDWARDS POWER PLANT
301 - ASH POND
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Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
AW-13	UA	25 - 30	Water Level Only	40.58838	-89.66371	07/25/2022	6.61	434.65
AW-14	UA	24 - 29	Water Level Only	40.58729	-89.66562	02/16/2022	6.44	432.96
AW-14	UA	24 - 29	Water Level Only	40.58729	-89.66562	07/25/2022	7.63	431.77
AW-15	UA	33 - 38	Water Level Only	40.58796	-89.66682	02/16/2022	8.00	433.51
AW-15	UA	33 - 38	Water Level Only	40.58796	-89.66682	07/25/2022	7.77	433.74
AW-15C	BCU	43 - 48	Water Level Only	40.58800	-89.66688	02/16/2022	6.50	433.52
AW-15C	BCU	43 - 48	Water Level Only	40.58800	-89.66688	07/25/2022	7.16	432.86
AW-15S	UCF	8 - 18	Water Level Only	40.58796	-89.66684	02/16/2022	8.92	431.79
AW-15S	UCF	8 - 18	Water Level Only	40.58796	-89.66684	07/25/2022	8.64	432.07
AW-16	UA	55 - 60	Water Level Only	40.58946	-89.66780	02/16/2022	23.88	437.91
AW-16	UA	55 - 60	Water Level Only	40.58946	-89.66780	07/25/2022	23.75	438.04
AW-17	UA	51 - 56	Water Level Only	40.59170	-89.66940	02/16/2022	24.47	437.63
AW-17	UA	51 - 56	Water Level Only	40.59170	-89.66940	07/25/2022	25.34	436.76
AW-18	UA	46 - 51	Water Level Only	40.59304	-89.66982	02/16/2022	26.82	435.83
AW-18	UA	46 - 51	Water Level Only	40.59304	-89.66982	07/25/2022	28.00	434.65
AW-19	UA	35 - 40	Water Level Only	40.59543	-89.66972	02/16/2022	13.74	447.00
AW-19	UA	35 - 40	Water Level Only	40.59543	-89.66972	07/25/2022	13.96	446.78
AW-20	UA	36.5 - 41.5	Water Level Only	40.59647	-89.66891	02/16/2022	16.78	444.70
AW-21	UA	32 - 37	Water Level Only	40.59729	-89.66773	02/16/2022	17.39	443.22
AW-21	UA	32 - 37	Water Level Only	40.59729	-89.66773	07/25/2022	18.46	442.15
AW-22	UA	44 - 49	Water Level Only	40.59684	-89.66678	02/16/2022	11.73	451.46
AW-22	UA	44 - 49	Water Level Only	40.59684	-89.66678	07/25/2022	12.25	450.94
P002	UCF	30.6 - 35.6	Water Level Only	40.59624	-89.66908	02/16/2022	12.36	448.03
P002	UCF	30.6 - 35.6	Water Level Only	40.59624	-89.66908	07/25/2022	12.54	447.85
XPW01A	CCR	33 - 43	Water Level Only	40.59631	-89.66734	02/16/2022	11.58	452.58
XPW01A	CCR	33 - 43	Water Level Only	40.59631	-89.66734	07/25/2022	12.10	452.06
XPW02	CCR	36 - 46	Water Level Only	40.59435	-89.66831	02/16/2022	20.58	453.21
XPW02	CCR	36 - 46	Water Level Only	40.59435	-89.66831	07/25/2022	21.94	451.85
XPW03	CCR	27 - 37	Water Level Only	40.59142	-89.66619	02/16/2022	15.39	450.65
XPW03	CCR	27 - 37	Water Level Only	40.59142	-89.66619	07/25/2022	15.71	450.33

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2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
SG-01	SW	NA	Water Level Only	40.59607	-89.66163	02/16/2022	Not Measured	434.07
SG-01	SW	NA	Water Level Only	40.59607	-89.66163	07/25/2022	Not Measured	433.45

Notes:
BGS = below ground surface
BMP = below measuring point
NAVD88 = North American Vertical Datum of 1988
NA = not available/not applicable
Monitored Unit Abbreviations:
BCU = bedrock confining unit
CCR = coal combustion residuals
SW = surface water
UA = uppermost aquifer
UCF = Upper Cahokia Formation

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Well ID	Well Type	Date	Event ID	Boron, total (mg/L)	Calcium, total (mg/L)	Chloride, total (mg/L)	Fluoride, total (mg/L)	pH (field) (SU)	Sulfate, total (mg/L)	Total Dissolved Solids (mg/L)
Background Value(s)	--	--	--	*0.429*	*177*	*44.0*	*0.376*	*6.6/7.4*	*80.7*	*955*
AP05S	Background	02/16/2022	A5	0.340	110	48.0	0.25 U	6.7	3.30	840
AP05S	Background	07/25/2022	A5D	0.350	190	49.0	0.083	6.7	2.40	680
AW-08	Background	02/16/2022	A5	0.0980	140	17.0	0.264	7.0	1 U	760
AW-08	Background	07/25/2022	A5D	0.100	140	18.0	0.273	7.3	0.94	680
AW-06	Compliance	02/16/2022	A5	0.120	110	37.0	0.338	6.8	25.0	560
AW-06	Compliance	07/25/2022	A5D	0.110	110	40.0	0.04 U	7.2	24.0	550
AW-09	Compliance	02/16/2022	A5	0.250	120	28.0	0.25 U	6.9	1 U	780
AW-09	Compliance	07/25/2022	A5D	0.250	130	30.0	0.19	7.0	0.18 U	800
AW-10	Compliance	02/16/2022	A5	0.460	130	92.0	0.25 U	7.0	1 U	1,200
AW-10	Compliance	07/25/2022	A5D	0.460	140	100	0.17	7.1	0.18 U	1,300
AW-11	Compliance	02/16/2022	A5	0.230	150	35.0	0.25 U	6.9	1 U	1,000
AW-11	Compliance	07/25/2022	A5D	0.230	160	39.0	0.133	6.9	0.18 U	1,000

Notes:
Exceedance of Background
mg/L = milligrams per liter
SU = Standard Units
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate. Lab reports may or may not report both the limit of detection and the limit of quantitation. Limits are provided in the electronic data deliverable. As such, the U-flagged result value provided in this table may not match the result value provided in the lab report.

TABLE 3
ANALYTICAL RESULTS - APPENDIX IV PARAMETERS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Well ID	Well Type	Date	Antimony, total (mg/L)	Arsenic, total (mg/L)	Barium, total (mg/L)	Beryllium, total (mg/L)	Cadmium, total (mg/L)	Chromium, total (mg/L)	Cobalt, total (mg/L)	Fluoride, total (mg/L)	Lead, total (mg/L)	Lithium, total (mg/L)	Mercury, total (mg/L)	Molybdenum, total (mg/L)	Radium 226 + 228 (pCi/L)	Selenium, total (mg/L)	Thallium, total (mg/L)
AP05S	Background	02/16/2022	0.003 U	0.00390	1.20	0.001 U	0.001 U	0.0120	0.00680	0.25 U	0.00810	0.0400	0.0002 U	0.00120	4.40	0.001 U	0.001 U
AP05S	Background	07/25/2022	--	0.0140	1.80	0.00190	--	0.0640	0.0360	0.083	0.0430	0.0740	--	0.00460	4.00	0.00190	--
AW-08	Background	02/16/2022	0.003 U	0.0180	0.230	0.001 U	0.001 U	0.004 U	0.002 U	0.264	0.001 U	0.02 U	0.0002 U	0.00200	1.20	0.001 U	0.001 U
AW-08	Background	07/25/2022	--	0.00730	0.160	0.00059 U	--	0.0028 U	0.00048 U	0.273	0.00022 U	0.016	--	0.00190	1.09	0.00074 U	--
AW-06	Compliance	02/16/2022	0.003 U	0.00470	0.180	0.001 U	0.001 U	0.004 U	0.002 U	0.338	0.001 U	0.02 U	0.0002 U	0.00450	1.04	0.001 U	0.001 U
AW-06	Compliance	07/25/2022	--	0.00170	0.150	0.00059 U	--	0.0028 U	0.00048 U	0.04 U	0.00022 U	0.011	--	0.00460	0.679	0.00074 U	--
AW-09	Compliance	02/16/2022	0.003 U	0.0120	0.370	0.001 U	0.001 U	0.004 U	0.00340	0.25 U	0.00180	0.02 U	0.0002 U	0.0140	1.34	0.001 U	0.001 U
AW-09	Compliance	07/25/2022	--	0.0170	0.470	0.00059 U	--	0.0028 U	0.00210	0.19	0.00022 U	0.013	--	0.0140	0.803	0.00074 U	--
AW-10	Compliance	02/16/2022	0.003 U	0.00990	0.980	0.001 U	0.001 U	0.004 U	0.002 U	0.25 U	0.001 U	0.0400	0.0002 U	0.001 U	2.52	0.001 U	0.001 U
AW-10	Compliance	07/25/2022	--	0.00990	1.00	0.00059 U	--	0.0036	0.00330	0.17	0.00220	0.0330	--	0.00097	2.16	0.00074 U	--
AW-11	Compliance	02/16/2022	0.003 U	0.00990	1.10	0.001 U	0.001 U	0.004 U	0.002 U	0.25 U	0.001 U	0.0230	0.0002 U	0.001 U	2.79	0.001 U	0.001 U
AW-11	Compliance	07/25/2022	--	0.00940	1.00	0.00059 U	--	0.0028 U	0.0014	0.133	0.00039	0.019	--	0.00110	0.756	0.00074 U	--

Notes:
mg/L = milligrams per liter
pCi/L = picoCuries per liter
– = not analyzed
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate. Lab reports may or may not report both the limit of detection and the limit of quantitation. Limits are provided in the electronic data deliverable. As such, the U-flagged result value provided in this table may not match the result value provided in the lab report.

TABLE 4
STATISTICAL BACKGROUND VALUES
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Parameter	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)
Boron (mg/L)	11/09/2015 - 08/23/2017	16	0	Parametric UPL	0.429
Calcium (mg/L)	11/09/2015 - 08/23/2017	16	0	Parametric UPL	177
Chloride (mg/L)	11/09/2015 - 08/23/2017	16	0	Non-parametric UPL	44.0
Fluoride (mg/L)	11/09/2015 - 08/23/2017	16	69	Non-parametric UPL	0.376
pH (field) (SU)	11/09/2015 - 08/23/2017	16	0	Parametric LPL/UPL	6.6/7.4
Sulfate (mg/L)	11/09/2015 - 08/23/2017	16	0	Parametric UPL	80.7
Total Dissolved Solids (mg/L)	11/09/2015 - 08/23/2017	16	0	Parametric UPL	955

Notes:
LPL = lower prediction limit (applicable for pH only)
mg/L = milligrams per liter
SU = standard units
UPL = upper prediction limit

TABLE 5
GROUNDWATER PROTECTION STANDARDS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Parameter	Background					MCL/HBL	Groundwater Protection Standard*	Groundwater Protection Standard Source
	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Value			
Antimony (mg/L)	11/09/2015 - 08/23/2017	16	94	Non-parametric UTL	0.00410	0.006	0.006	MCL/HBL
Arsenic (mg/L)	11/09/2015 - 08/23/2017	16	0	Parametric UTL	0.0187	0.010	0.0187	Background
Barium (mg/L)	11/09/2015 - 08/23/2017	16	0	Non-parametric UTL	0.790	2	2	MCL/HBL
Beryllium (mg/L)	11/09/2015 - 08/23/2017	16	94	Non-parametric UTL	0.0140	0.004	0.0140	Background
Cadmium (mg/L)	11/09/2015 - 08/23/2017	16	100	All ND - Last Reporting Limit	0.001	0.005	0.005	MCL/HBL
Chromium (mg/L)	11/09/2015 - 08/23/2017	16	100	All ND - Last Reporting Limit	0.004	0.1	0.1	MCL/HBL
Cobalt (mg/L)	11/09/2015 - 08/23/2017	16	56	Non-parametric UTL	0.00530	0.006	0.006	MCL/HBL
Fluoride (mg/L)	11/09/2015 - 08/23/2017	16	69	Non-parametric UTL	0.376	4.0	4.0	MCL/HBL
Lead (mg/L)	11/09/2015 - 08/23/2017	16	94	Non-parametric UTL	0.00100	0.015	0.015	MCL/HBL
Lithium (mg/L)	11/09/2015 - 08/23/2017	16	0	Parametric UTL	0.0541	0.04	0.0541	Background
Mercury (mg/L)	11/09/2015 - 08/23/2017	16	100	All ND - Last Reporting Limit	0.0002	0.002	0.002	MCL/HBL
Molybdenum (mg/L)	11/09/2015 - 08/23/2017	16	0	Parametric UTL	0.0225	0.1	0.1	MCL/HBL
Radium 226 + Radium 228 (pCi/L)	11/09/2015 - 08/23/2017	16	0	Parametric UTL	2.93	5	5	MCL/HBL
Selenium (mg/L)	11/09/2015 - 08/23/2017	16	94	Non-parametric UTL	0.00120	0.05	0.05	MCL/HBL
Thallium (mg/L)	11/09/2015 - 08/23/2017	16	100	All ND - Last Reporting Limit	0.001	0.002	0.002	MCL/HBL

Notes:
* Groundwater Protection Standard is the higher of the MCL/HBL or background.
MCL/HBL = maximum contaminant level/health-based level
mg/L = milligrams per liter
ND = non-detect
pCi/L = picoCuries per liter
UTL = upper tolerance limit

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
AW-06	Antimony, total	mg/L	A5	11/10/2015 - 02/16/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
AW-06	Arsenic, total	mg/L	A5	11/10/2015 - 02/16/2022	17	0	Future median	0.00470	0.0187	Background
AW-06	Arsenic, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	0	CI around geomean	0.00272	0.0187	Background
AW-06	Barium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	0	CI around geomean	0.186	2	MCL/HBL
AW-06	Barium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	0	CI around geomean	0.182	2	MCL/HBL
AW-06	Beryllium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	82	Future median	0.00100	0.0140	Background
AW-06	Beryllium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	83	CI around median	0.00100	0.0140	Background
AW-06	Cadmium, total	mg/L	A5	11/10/2015 - 02/16/2022	13	100	All ND - Last	0.001	0.005	MCL/HBL
AW-06	Chromium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	41	CI around median	0.00400	0.1	MCL/HBL
AW-06	Chromium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	44	CI around median	0.00400	0.1	MCL/HBL
AW-06	Cobalt, total	mg/L	A5	11/10/2015 - 02/16/2022	17	47	CI around median	0.00200	0.006	MCL/HBL
AW-06	Cobalt, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	50	CI around median	0.00200	0.006	MCL/HBL
AW-06	Fluoride, total	mg/L	A5	11/10/2015 - 02/16/2022	18	6	CI around mean	0.316	4.0	MCL/HBL
AW-06	Fluoride, total	mg/L	A5D	11/10/2015 - 07/25/2022	19	11	CI around median	0.314	4.0	MCL/HBL
AW-06	Lead, total	mg/L	A5	11/10/2015 - 02/16/2022	17	24	CI around geomean	0.00170	0.015	MCL/HBL
AW-06	Lead, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	28	CI around median	0.00100	0.015	MCL/HBL
AW-06	Lithium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	29	Future median	0.0200	0.0541	Background
AW-06	Lithium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	33	CI around mean	0.0139	0.0541	Background
AW-06	Mercury, total	mg/L	A5	11/10/2015 - 02/16/2022	13	92	CI around median	0.000200	0.002	MCL/HBL
AW-06	Molybdenum, total	mg/L	A5	11/10/2015 - 02/16/2022	17	0	CI around mean	0.00471	0.1	MCL/HBL
AW-06	Molybdenum, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	0	CI around mean	0.00470	0.1	MCL/HBL
AW-06	Radium 226 + Radium 228, total	pCi/L	A5	11/10/2015 - 02/16/2022	17	0	CI around mean	0.740	5	MCL/HBL
AW-06	Radium 226 + Radium 228, total	pCi/L	A5D	11/10/2015 - 07/25/2022	18	0	CI around mean	0.734	5	MCL/HBL
AW-06	Selenium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	65	CI around median	0.00100	0.05	MCL/HBL
AW-06	Selenium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	67	CI around median	0.00100	0.05	MCL/HBL
AW-06	Thallium, total	mg/L	A5	11/10/2015 - 02/16/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL
AW-09	Antimony, total	mg/L	A5	11/10/2015 - 02/16/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
AW-09	Arsenic, total	mg/L	A5	11/10/2015 - 02/16/2022	17	18	Future median	0.0170	0.0187	Background
AW-09	Arsenic, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	17	CI around mean	0.00714	0.0187	Background

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
AW-09	Barium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	0	CI around mean	0.287	2	MCL/HBL
AW-09	Barium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	0	CI around mean	0.298	2	MCL/HBL
AW-09	Beryllium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	76	CB around T-S line	-0.00211	0.0140	Background
AW-09	Beryllium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	78	CB around T-S line	-0.00132	0.0140	Background
AW-09	Cadmium, total	mg/L	A5	11/10/2015 - 02/16/2022	13	85	CI around median	0.00100	0.005	MCL/HBL
AW-09	Chromium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	41	CI around geomean	0.00591	0.1	MCL/HBL
AW-09	Chromium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	44	CI around median	0.00400	0.1	MCL/HBL
AW-09	Cobalt, total	mg/L	A5	11/10/2015 - 02/16/2022	17	0	CI around geomean	0.00428	0.006	MCL/HBL
AW-09	Cobalt, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	0	CI around geomean	0.00401	0.006	MCL/HBL
AW-09	Fluoride, total	mg/L	A5	11/10/2015 - 02/16/2022	18	50	CB around linear reg	0.195	4.0	MCL/HBL
AW-09	Fluoride, total	mg/L	A5D	11/10/2015 - 07/25/2022	19	53	CB around T-S line	0.150	4.0	MCL/HBL
AW-09	Lead, total	mg/L	A5	11/10/2015 - 02/16/2022	17	35	CI around geomean	0.00192	0.015	MCL/HBL
AW-09	Lead, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	39	CI around geomean	0.00186	0.015	MCL/HBL
AW-09	Lithium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	12	CB around T-S line	-0.170	0.0541	Background
AW-09	Lithium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	17	CB around T-S line	-0.112	0.0541	Background
AW-09	Mercury, total	mg/L	A5	11/10/2015 - 02/16/2022	13	92	CI around median	0.000200	0.002	MCL/HBL
AW-09	Molybdenum, total	mg/L	A5	11/10/2015 - 02/16/2022	17	0	CI around geomean	0.0143	0.1	MCL/HBL
AW-09	Molybdenum, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	0	CI around geomean	0.0143	0.1	MCL/HBL
AW-09	Radium 226 + Radium 228, total	pCi/L	A5	11/10/2015 - 02/16/2022	17	0	CI around median	0.633	5	MCL/HBL
AW-09	Radium 226 + Radium 228, total	pCi/L	A5D	11/10/2015 - 07/25/2022	18	0	CI around median	0.729	5	MCL/HBL
AW-09	Selenium, total	mg/L	A5	11/10/2015 - 02/16/2022	17	53	CB around linear reg	-0.00308	0.05	MCL/HBL
AW-09	Selenium, total	mg/L	A5D	11/10/2015 - 07/25/2022	18	56	CB around T-S line	-0.00410	0.05	MCL/HBL
AW-09	Thallium, total	mg/L	A5	11/10/2015 - 02/16/2022	13	92	CI around median	0.00100	0.002	MCL/HBL
AW-10	Antimony, total	mg/L	A5	11/09/2015 - 02/16/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
AW-10	Arsenic, total	mg/L	A5	11/09/2015 - 02/16/2022	17	0	Future median	0.0100	0.0187	Background
AW-10	Arsenic, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	0	CI around geomean	0.00705	0.0187	Background
AW-10	Barium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	0	CI around median	0.880	2	MCL/HBL
AW-10	Barium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	0	CI around median	0.930	2	MCL/HBL
AW-10	Beryllium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	71	Future median	0.00100	0.0140	Background

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
AW-10	Beryllium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	72	CI around median	0.00100	0.0140	Background
AW-10	Cadmium, total	mg/L	A5	11/09/2015 - 02/16/2022	13	92	CI around median	0.00100	0.005	MCL/HBL
AW-10	Chromium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	29	CI around median	0.00400	0.1	MCL/HBL
AW-10	Chromium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	33	CI around median	0.00400	0.1	MCL/HBL
AW-10	Cobalt, total	mg/L	A5	11/09/2015 - 02/16/2022	17	6	CI around geomean	0.00341	0.006	MCL/HBL
AW-10	Cobalt, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	6	CI around geomean	0.00339	0.006	MCL/HBL
AW-10	Fluoride, total	mg/L	A5	11/09/2015 - 02/16/2022	18	94	CI around median	0.250	4.0	MCL/HBL
AW-10	Fluoride, total	mg/L	A5D	11/09/2015 - 07/25/2022	19	95	CI around median	0.250	4.0	MCL/HBL
AW-10	Lead, total	mg/L	A5	11/09/2015 - 02/16/2022	17	18	CI around geomean	0.00202	0.015	MCL/HBL
AW-10	Lead, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	17	CI around geomean	0.00135	0.015	MCL/HBL
AW-10	Lithium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	0	CB around T-S line	-0.0796	0.0541	Background
AW-10	Lithium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	0	CB around T-S line	-0.0605	0.0541	Background
AW-10	Mercury, total	mg/L	A5	11/09/2015 - 02/16/2022	13	92	CI around median	0.000200	0.002	MCL/HBL
AW-10	Molybdenum, total	mg/L	A5	11/09/2015 - 02/16/2022	17	24	CI around geomean	0.00139	0.1	MCL/HBL
AW-10	Molybdenum, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	28	CB around T-S line	-0.000544	0.1	MCL/HBL
AW-10	Radium 226 + Radium 228, total	pCi/L	A5	11/09/2015 - 02/16/2022	17	0	CI around mean	2.23	5	MCL/HBL
AW-10	Radium 226 + Radium 228, total	pCi/L	A5D	11/09/2015 - 07/25/2022	18	0	CI around mean	2.22	5	MCL/HBL
AW-10	Selenium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	53	CI around median	0.00100	0.05	MCL/HBL
AW-10	Selenium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	56	CI around median	0.00100	0.05	MCL/HBL
AW-10	Thallium, total	mg/L	A5	11/09/2015 - 02/16/2022	13	92	CI around median	0.00100	0.002	MCL/HBL
AW-11	Antimony, total	mg/L	A5	11/09/2015 - 02/16/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
AW-11	Arsenic, total	mg/L	A5	11/09/2015 - 02/16/2022	17	0	Future median	0.0110	0.0187	Background
AW-11	Arsenic, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	0	CI around mean	0.00916	0.0187	Background
AW-11	Barium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	0	CI around geomean	0.845	2	MCL/HBL
AW-11	Barium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	0	CI around geomean	0.854	2	MCL/HBL
AW-11	Beryllium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	71	Future median	0.00100	0.0140	Background
AW-11	Beryllium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	72	CI around median	0.00100	0.0140	Background
AW-11	Cadmium, total	mg/L	A5	11/09/2015 - 02/16/2022	13	77	CI around median	0.00100	0.005	MCL/HBL
AW-11	Chromium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	41	CI around median	0.00400	0.1	MCL/HBL

TABLE 6
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2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EDWARDS POWER PLANT
301 - ASH POND
BARTONVILLE, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
AW-11	Chromium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	44	CB around T-S line	-0.0227	0.1	MCL/HBL
AW-11	Cobalt, total	mg/L	A5	11/09/2015 - 02/16/2022	17	12	CB around T-S line	-0.0186	0.006	MCL/HBL
AW-11	Cobalt, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	17	CB around T-S line	-0.0114	0.006	MCL/HBL
AW-11	Fluoride, total	mg/L	A5	11/09/2015 - 02/16/2022	18	83	CI around median	0.250	4.0	MCL/HBL
AW-11	Fluoride, total	mg/L	A5D	11/09/2015 - 07/25/2022	19	84	CI around median	0.250	4.0	MCL/HBL
AW-11	Lead, total	mg/L	A5	11/09/2015 - 02/16/2022	17	29	CB around T-S line	-0.0142	0.015	MCL/HBL
AW-11	Lead, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	33	CB around T-S line	-0.0163	0.015	MCL/HBL
AW-11	Lithium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	6	CB around T-S line	-0.0375	0.0541	Background
AW-11	Lithium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	11	CB around T-S line	-0.0211	0.0541	Background
AW-11	Mercury, total	mg/L	A5	11/09/2015 - 02/16/2022	13	100	All ND - Last	0.0002	0.002	MCL/HBL
AW-11	Molybdenum, total	mg/L	A5	11/09/2015 - 02/16/2022	17	6	CB around linear reg	-0.00152	0.1	MCL/HBL
AW-11	Molybdenum, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	6	CB around linear reg	-0.00174	0.1	MCL/HBL
AW-11	Radium 226 + Radium 228, total	pCi/L	A5	11/09/2015 - 02/16/2022	17	0	CI around mean	1.75	5	MCL/HBL
AW-11	Radium 226 + Radium 228, total	pCi/L	A5D	11/09/2015 - 07/25/2022	18	0	CI around mean	1.66	5	MCL/HBL
AW-11	Selenium, total	mg/L	A5	11/09/2015 - 02/16/2022	17	59	CI around median	0.00100	0.05	MCL/HBL
AW-11	Selenium, total	mg/L	A5D	11/09/2015 - 07/25/2022	18	61	CI around median	0.00100	0.05	MCL/HBL
AW-11	Thallium, total	mg/L	A5	11/09/2015 - 02/16/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL

Notes:
mg/L = milligrams per liter
pCi/L = picocuries per liter
Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result
Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around linear reg = Confidence band around linear regression

CB around T-S line = Confidence band around Thiel-Sen line

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Future median = Median of the three most recent samples

Statistical Result = calculated in accordance with Statistical Analysis Plan using constituent concentrations observed at monitoring well during all sampling events within the specified date range
GWPS = Groundwater Protection Standard
GWPS Source:

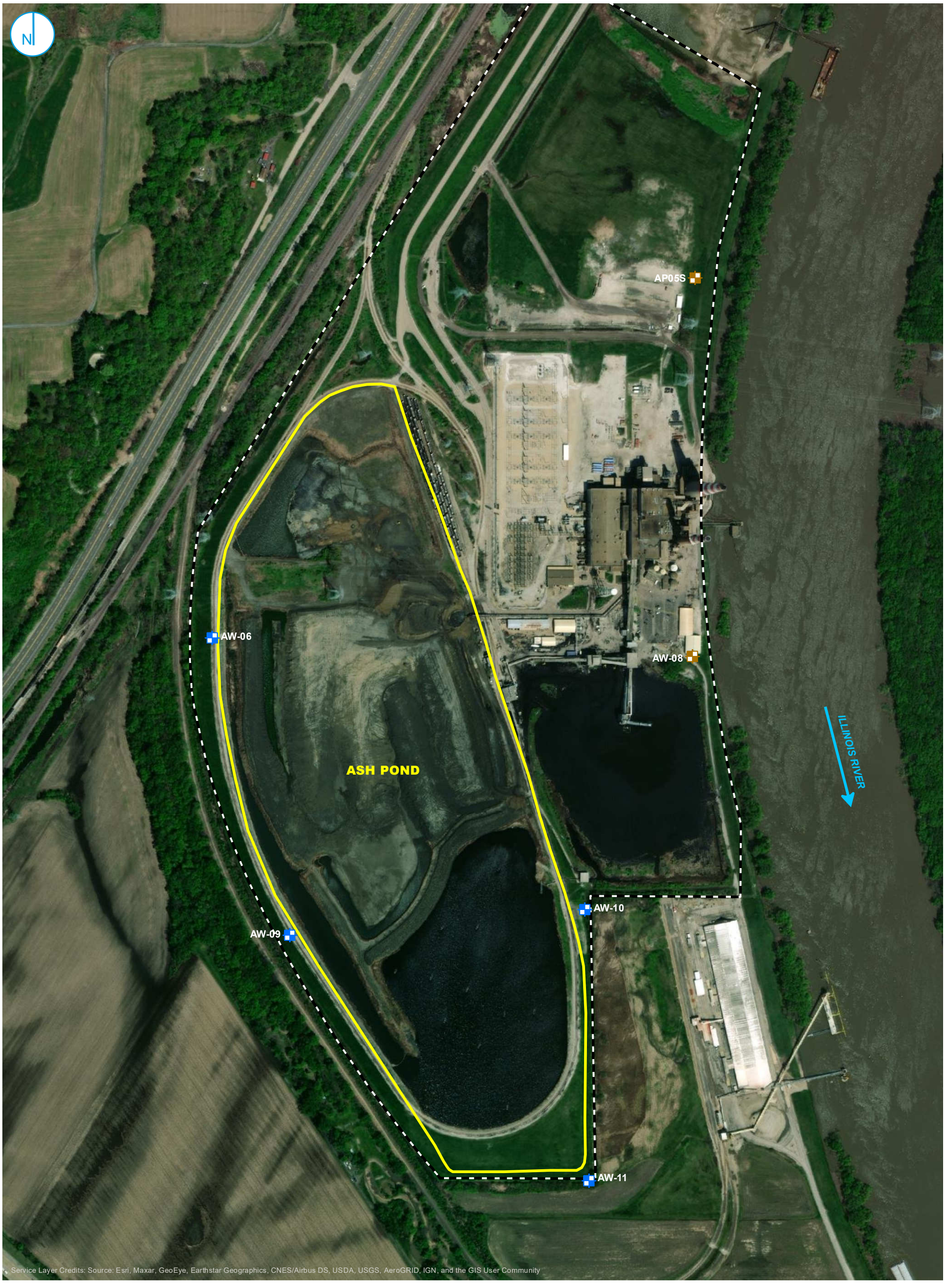
MCL/HBL = maximum contaminant level/health-based level

Background = background concentration

FIGURES

PROJECT: 169000XXXX | DATED: 1/5/2022 | DESIGNER: galarnmc

Y:\Mapping\Projects\22\2285\MXD\2021_AnnualGWM_CAR\Edwards\Figure 1 Edwards MW Location Map.mxd



BACKGROUND WELL

COMPLIANCE WELL

40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)

PROPERTY BOUNDARY

0 212.5 425 Feet

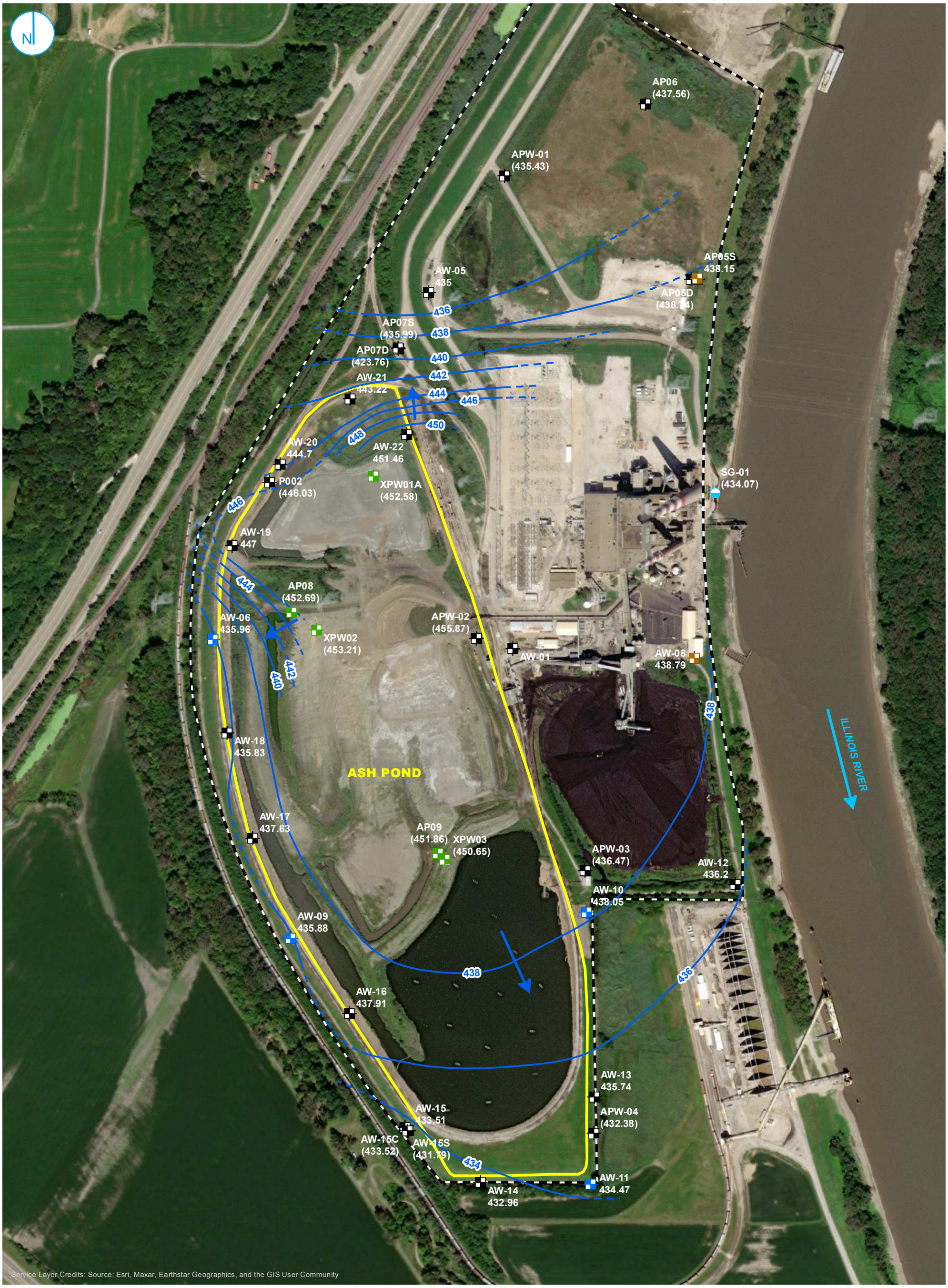
MONITORING WELL LOCATION MAP

FIGURE 1

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
ASH POND
EDWARDS POWER PLANT
BARTONVILLE, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL



COMPLIANCE MONITORING WELL
BACKGROUND MONITORING WELL
PORE WATER WELL
STAFF GAGE, RIVER
MONITORING WELL
40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)

PROPERTY BOUNDARY
GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION

0 212.5 425 Feet

NOTES

1. PARENTHESES INDICATES WELL NOT USED FOR CONTOURING
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

POTENTIOMETRIC SURFACE MAP FEBRUARY 16, 2022

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ASH POND

EDWARDS POWER PLANT
BARTONVILLE, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

N

AP06
APW-01 (434.73)
AP05D (438.78)
AP05S 437.62
AW-05 434.38
AP07D (432.81)
AP07S (435.57)
AW-21 442.15
AW-22 450.94
AW-20
P002 (447.85)
XPW01A (452.06)
SG-01 (433.45)
AW-19 446.78
AP08 (451.42)
AW-06 433.94
XPW02 (451.85)
APW-02 (455.71)
AW-01
AW-08 439.17
AW-18 434.65
ASH POND
ILLINOIS RIVER
AW-17 436.76
AP09 (451.6)
XPW03 (450.33)
APW-03 (434.93)
AW-12 435.35
AW-10 437.62
AW-09 435.02
AW-16 438.04
AW-13 434.65
AW-15 433.74
APW-04 (431.15)
AW-15C (432.86)
AW-15S (432.07)
AW-11 433.65
AW-14 431.77

436 438 440 442 444 446 448 450

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, RIVER
- MONITORING WELL
- 40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
- PROPERTY BOUNDARY
- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

0 212.5 425 Feet

NOTES

1. PARENTHESES INDICATES WELL NOT USED FOR CONTOURING
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

POTENTIOMETRIC SURFACE MAP JULY 25, 2022

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ASH POND

EDWARDS POWER PLANT
BARTONVILLE, ILLINOIS

FIGURE 3

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

APPENDICES

APPENDIX A
LABORATORY REPORTS

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

March 10, 2022

Eric Bauer
Ramboll - Milwaukee
234 W Florida Street, 5th Floor
Milwaukee, WI 53204

Dear Eric Bauer:

Please find enclosed the analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lgrant@pdclab.com.

Sincerely,

Gail J Schindler

Gail Schindler
Project Manager
(309) 692-9688 x1716
gschindler@pdclab.com

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order FB03042

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FB03042-01
Name: AP-05S
Alias: EDW_257_301

Sampled: 02/16/22 11:58
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	4.4	pCi/L			1	0.574	03/02/22 11:56		904.0 903.0

Sample: FB03042-02
Name: AW-06
Alias: EDW_257_301

Sampled: 02/16/22 10:47
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.04	pCi/L			1	0.715	03/02/22 11:56		904.0 903.0

Sample: FB03042-03
Name: AW-08
Alias: EDW_257_301

Sampled: 02/16/22 12:02
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.2	pCi/L			1	0.614	03/02/22 11:56		904.0 903.0

Sample: FB03042-04
Name: AW-09
Alias: EDW_257_301

Sampled: 02/16/22 10:30
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.34	pCi/L			1	0.763	03/02/22 11:56		904.0 903.0

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ANALYTICAL RESULTS

Sample: FB03042-05
Name: AW-10
Alias: EDW_257_301

Sampled: 02/16/22 14:29
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.52	pCi/L			1	0.703	03/02/22 11:56		904.0 903.0

Sample: FB03042-06
Name: AW-11
Alias: EDW_257_301

Sampled: 02/16/22 13:41
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.79	pCi/L			1	0.671	03/02/22 11:56		904.0 903.0

Sample: FB03042-08
Name: FIELD BLANK
Alias: EDW_257_301

Sampled: 02/16/22 11:56
Received: 02/16/22 16:00
Matrix: DI Water - Field Blank
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.488J	pCi/L			1	0.648	03/02/22 11:56		904.0 903.0

Sample: FB03042-09
Name: EQUIPMENT BLANK
Alias: EDW_257_301

Sampled: 02/16/22 11:56
Received: 02/16/22 16:00
Matrix: DI Water - Equipment Blank
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.704	pCi/L			1	0.652	03/02/22 11:56		904.0 903.0

ANALYTICAL RESULTS

Pace Analytical Services, LLC
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Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FB03042-01
Name: AP-05S
Alias: EDW_257_301

Sampled: 02/16/22 11:58
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	48	mg/L	Q4	02/18/22 11:32	10	10	02/18/22 11:32	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L	Q3	02/18/22 10:31	1	0.250	02/18/22 10:31	CRD	EPA 300.0 REV 2.1
Sulfate	3.3	mg/L	Q4	02/18/22 10:31	1	1.0	02/18/22 10:31	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	5.3	Feet		02/16/22 11:58	1		02/16/22 11:58	FIELD	Field
Dissolved oxygen, Field	0.29	mg/L		02/16/22 11:58	1		02/16/22 11:58	FIELD	Field
Oxidation Reduction Potential	-115	mV		02/16/22 11:58	1	-500	02/16/22 11:58	FIELD	Field
pH, Field Measured	6.68	pH Units		02/16/22 11:58	1		02/16/22 11:58	FIELD	Field
Specific Conductance, Field Measured	1672	umhos/cm		02/16/22 11:58	1		02/16/22 11:58	FIELD	Field
Temperature, Field Measured	12.0	°C		02/16/22 11:58	1		02/16/22 11:58	FIELD	Field
Turbidity, Field Measured	3050	NTU		02/16/22 11:58	1	0.00	02/16/22 11:58	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	800	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	840	mg/L		02/18/22 10:43	1	26	02/18/22 15:23	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 10:09	JMW	EPA 6020A
Arsenic	3.9	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:09	JMW	EPA 6020A
Barium	1200	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:09	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:09	JMW	EPA 6020A
Boron	340	ug/L		02/17/22 08:20	5	10	02/21/22 10:09	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:09	JMW	EPA 6020A
Calcium	110	mg/L		02/17/22 08:20	5	0.20	02/21/22 10:09	JMW	EPA 6020A
Chromium	12	ug/L		02/17/22 08:20	5	4.0	02/21/22 10:09	JMW	EPA 6020A
Cobalt	6.8	ug/L		02/17/22 08:20	5	2.0	02/21/22 10:09	JMW	EPA 6020A
Lead	8.1	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:09	JMW	EPA 6020A
Magnesium	46	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:09	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 10:09	JMW	EPA 6020A
Molybdenum	1.2	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:09	JMW	EPA 6020A
Potassium	4.9	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:09	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:09	JMW	EPA 6020A

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FB03042-01
Name: AP-05S
Alias: EDW_257_301

Sampled: 02/16/22 11:58
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Sodium	200	mg/L		02/17/22 08:20	5	0.22	02/21/22 10:09	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:09	JMW	EPA 6020A
Lithium	40	ug/L		02/17/22 08:20	1	20	02/18/22 10:30	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB03042-02
Name: AW-06
Alias: EDW_257_301

Sampled: 02/16/22 10:47
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	37	mg/L	Q4	02/18/22 12:52	10	10	02/18/22 12:52	CRD	EPA 300.0 REV 2.1
Fluoride	0.338	mg/L	Q3	02/18/22 11:52	1	0.250	02/18/22 11:52	CRD	EPA 300.0 REV 2.1
Sulfate	25	mg/L	Q4	02/18/22 12:52	10	10	02/18/22 12:52	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	26.51	Feet		02/16/22 10:47	1		02/16/22 10:47	FIELD	Field
Dissolved oxygen, Field	0.51	mg/L		02/16/22 10:47	1		02/16/22 10:47	FIELD	Field
Oxidation Reduction Potential	-49.5	mV		02/16/22 10:47	1	-500	02/16/22 10:47	FIELD	Field
pH, Field Measured	6.84	pH Units		02/16/22 10:47	1		02/16/22 10:47	FIELD	Field
Specific Conductance, Field Measured	984.2	umhos/cm		02/16/22 10:47	1		02/16/22 10:47	FIELD	Field
Temperature, Field Measured	12.2	°C		02/16/22 10:47	1		02/16/22 10:47	FIELD	Field
Turbidity, Field Measured	600	NTU		02/16/22 10:47	1	0.00	02/16/22 10:47	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	400	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	560	mg/L		02/21/22 13:04	1	26	02/21/22 15:08	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 10:13	JMW	EPA 6020A
Arsenic	4.7	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:13	JMW	EPA 6020A
Barium	180	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:13	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:13	JMW	EPA 6020A
Boron	120	ug/L		02/17/22 08:20	5	10	02/21/22 10:13	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:13	JMW	EPA 6020A
Calcium	110	mg/L		02/17/22 08:20	5	0.20	02/21/22 10:13	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 10:13	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/17/22 08:20	5	2.0	02/21/22 10:13	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:13	JMW	EPA 6020A
Magnesium	45	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:13	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 10:13	JMW	EPA 6020A
Molybdenum	4.5	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:13	JMW	EPA 6020A
Potassium	0.74	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:13	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:13	JMW	EPA 6020A

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FB03042-02
Name: AW-06
Alias: EDW_257_301

Sampled: 02/16/22 10:47
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Sodium	57	mg/L		02/17/22 08:20	5	0.22	02/21/22 10:13	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:13	JMW	EPA 6020A
Lithium	< 20	ug/L		02/17/22 08:20	1	20	02/18/22 10:32	TJJ	EPA 6010B

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(800)752-6651

ANALYTICAL RESULTS

Sample: FB03042-03
Name: AW-08
Alias: EDW_257_301

Sampled: 02/16/22 12:02
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	17	mg/L		02/18/22 14:13	10	10	02/18/22 14:13	CRD	EPA 300.0 REV 2.1
Fluoride	0.264	mg/L		02/18/22 13:53	1	0.250	02/18/22 13:53	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/18/22 13:53	1	1.0	02/18/22 13:53	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	23.66	Feet		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Dissolved oxygen, Field	8.3	mg/L		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Oxidation Reduction Potential	-86.9	mV		02/16/22 12:02	1	-500	02/16/22 12:02	FIELD	Field
pH, Field Measured	6.99	pH Units		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Specific Conductance, Field Measured	2950	umhos/cm		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Temperature, Field Measured	14.8	°C		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Turbidity, Field Measured	3.13	NTU		02/16/22 12:02	1	0.00	02/16/22 12:02	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	650	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	760	mg/L		02/21/22 13:04	1	26	02/21/22 15:08	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 10:37	JMW	EPA 6020A
Arsenic	18	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:37	JMW	EPA 6020A
Barium	230	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:37	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:37	JMW	EPA 6020A
Boron	98	ug/L		02/17/22 08:20	5	10	02/21/22 10:37	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:37	JMW	EPA 6020A
Calcium	140	mg/L		02/17/22 08:20	5	0.20	02/21/22 10:37	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 10:37	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/17/22 08:20	5	2.0	02/21/22 10:37	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:37	JMW	EPA 6020A
Magnesium	59	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:37	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 10:37	JMW	EPA 6020A
Molybdenum	2.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:37	JMW	EPA 6020A
Potassium	1.5	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:37	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:37	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FB03042-03
Name: AW-08
Alias: EDW_257_301

Sampled: 02/16/22 12:02
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Sodium	62	mg/L		02/17/22 08:20	5	0.22	02/21/22 10:37	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:37	JMW	EPA 6020A
Lithium	< 20	ug/L		02/17/22 08:20	1	20	02/18/22 10:34	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB03042-04
Name: AW-09
Alias: EDW_257_301

Sampled: 02/16/22 10:30
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	28	mg/L		02/18/22 14:53	10	10	02/18/22 14:53	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/18/22 14:33	1	0.250	02/18/22 14:33	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/18/22 14:33	1	1.0	02/18/22 14:33	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	25.57	Feet		02/16/22 10:30	1		02/16/22 10:30	FIELD	Field
Dissolved oxygen, Field	1.7	mg/L		02/16/22 10:30	1		02/16/22 10:30	FIELD	Field
Oxidation Reduction Potential	-105	mV		02/16/22 10:30	1	-500	02/16/22 10:30	FIELD	Field
pH, Field Measured	6.88	pH Units		02/16/22 10:30	1		02/16/22 10:30	FIELD	Field
Specific Conductance, Field Measured	1370	umhos/cm		02/16/22 10:30	1		02/16/22 10:30	FIELD	Field
Temperature, Field Measured	12.2	°C		02/16/22 10:30	1		02/16/22 10:30	FIELD	Field
Turbidity, Field Measured	138	NTU		02/16/22 10:30	1	0.00	02/16/22 10:30	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	660	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	780	mg/L	M	02/21/22 13:04	1	26	02/21/22 15:08	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 10:41	JMW	EPA 6020A
Arsenic	12	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:41	JMW	EPA 6020A
Barium	370	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:41	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:41	JMW	EPA 6020A
Boron	250	ug/L		02/17/22 08:20	5	10	02/21/22 10:41	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:41	JMW	EPA 6020A
Calcium	120	mg/L		02/17/22 08:20	5	0.20	02/21/22 10:41	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 10:41	JMW	EPA 6020A
Cobalt	3.4	ug/L		02/17/22 08:20	5	2.0	02/21/22 10:41	JMW	EPA 6020A
Lead	1.8	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:41	JMW	EPA 6020A
Magnesium	52	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:41	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 10:41	JMW	EPA 6020A
Molybdenum	14	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:41	JMW	EPA 6020A
Potassium	2.1	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:41	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:41	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FB03042-04
Name: AW-09
Alias: EDW_257_301

Sampled: 02/16/22 10:30
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Sodium	130	mg/L		02/17/22 08:20	5	0.22	02/21/22 10:41	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:41	JMW	EPA 6020A
Lithium	< 20	ug/L		02/17/22 08:20	1	20	02/18/22 10:47	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB03042-05
Name: AW-10
Alias: EDW_257_301

Sampled: 02/16/22 14:29
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	92	mg/L		02/18/22 15:34	25	25	02/18/22 15:34	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/18/22 15:14	1	0.250	02/18/22 15:14	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/18/22 15:14	1	1.0	02/18/22 15:14	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	1.86	Feet		02/16/22 14:29	1		02/16/22 14:29	FIELD	Field
Dissolved oxygen, Field	0.0	mg/L		02/16/22 14:29	1		02/16/22 14:29	FIELD	Field
Oxidation Reduction Potential	-153	mV		02/16/22 14:29	1	-500	02/16/22 14:29	FIELD	Field
pH, Field Measured	6.97	pH Units		02/16/22 14:29	1		02/16/22 14:29	FIELD	Field
Specific Conductance, Field Measured	2099	umhos/cm		02/16/22 14:29	1		02/16/22 14:29	FIELD	Field
Temperature, Field Measured	9.9	°C		02/16/22 14:29	1		02/16/22 14:29	FIELD	Field
Turbidity, Field Measured	32.8	NTU		02/16/22 14:29	1	0.00	02/16/22 14:29	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	960	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1200	mg/L		02/21/22 13:04	1	26	02/21/22 15:08	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 10:44	JMW	EPA 6020A
Arsenic	9.9	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:44	JMW	EPA 6020A
Barium	980	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:44	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:44	JMW	EPA 6020A
Boron	460	ug/L		02/17/22 08:20	5	10	02/21/22 10:44	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:44	JMW	EPA 6020A
Calcium	130	mg/L		02/17/22 08:20	5	0.20	02/21/22 10:44	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 10:44	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/17/22 08:20	5	2.0	02/21/22 10:44	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:44	JMW	EPA 6020A
Magnesium	63	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:44	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 10:44	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:44	JMW	EPA 6020A
Potassium	3.9	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:44	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:44	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FB03042-05
Name: AW-10
Alias: EDW_257_301

Sampled: 02/16/22 14:29
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Sodium	300	mg/L		02/17/22 08:20	5	0.22	02/21/22 10:44	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:44	JMW	EPA 6020A
Lithium	40	ug/L		02/17/22 08:20	1	20	02/18/22 10:49	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB03042-06
Name: AW-11
Alias: EDW_257_301

Sampled: 02/16/22 13:41
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	35	mg/L		02/18/22 16:14	10	10	02/18/22 16:14	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/18/22 15:54	1	0.250	02/18/22 15:54	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/18/22 15:54	1	1.0	02/18/22 15:54	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	5.38	Feet		02/16/22 13:41	1		02/16/22 13:41	FIELD	Field
Dissolved oxygen, Field	0.0	mg/L		02/16/22 13:41	1		02/16/22 13:41	FIELD	Field
Oxidation Reduction Potential	-161	mV		02/16/22 13:41	1	-500	02/16/22 13:41	FIELD	Field
pH, Field Measured	6.86	pH Units		02/16/22 13:41	1		02/16/22 13:41	FIELD	Field
Specific Conductance, Field Measured	1774	umhos/cm		02/16/22 13:41	1		02/16/22 13:41	FIELD	Field
Temperature, Field Measured	9.6	°C		02/16/22 13:41	1		02/16/22 13:41	FIELD	Field
Turbidity, Field Measured	95.7	NTU		02/16/22 13:41	1	0.00	02/16/22 13:41	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	900	mg/L		02/24/22 08:38	1	10	02/24/22 08:38	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/24/22 08:38	1	10	02/24/22 08:38	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1000	mg/L		02/18/22 10:43	1	26	02/18/22 15:23	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 10:48	JMW	EPA 6020A
Arsenic	9.9	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:48	JMW	EPA 6020A
Barium	1100	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:48	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:48	JMW	EPA 6020A
Boron	230	ug/L		02/17/22 08:20	5	10	02/21/22 10:48	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:48	JMW	EPA 6020A
Calcium	150	mg/L		02/17/22 08:20	5	0.20	02/21/22 10:48	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 10:48	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/17/22 08:20	5	2.0	02/21/22 10:48	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:48	JMW	EPA 6020A
Magnesium	67	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:48	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 10:48	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:48	JMW	EPA 6020A
Potassium	2.7	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:48	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:48	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FB03042-06
Name: AW-11
Alias: EDW_257_301

Sampled: 02/16/22 13:41
Received: 02/16/22 16:00
Matrix: Ground Water - Grab
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Sodium	160	mg/L		02/17/22 08:20	5	0.22	02/21/22 10:48	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:48	JMW	EPA 6020A
Lithium	23	ug/L		02/17/22 08:20	1	20	02/18/22 10:51	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB03042-07
Name: AW-08 DUPLICATE
Alias: EDW_257_301

Sampled: 02/16/22 12:02
Received: 02/16/22 16:00
Matrix: Ground Water - Field Duplicate
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	17	mg/L		02/18/22 16:54	10	10	02/18/22 16:54	CRD	EPA 300.0 REV 2.1
Fluoride	0.272	mg/L		02/18/22 16:34	1	0.250	02/18/22 16:34	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/18/22 16:34	1	1.0	02/18/22 16:34	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	23.66	Feet		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Dissolved oxygen, Field	8.3	mg/L		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Oxidation Reduction Potential	-86.9	mV		02/16/22 12:02	1	-500	02/16/22 12:02	FIELD	Field
pH, Field Measured	6.99	pH Units		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Specific Conductance, Field Measured	2950	umhos/cm		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Temperature, Field Measured	14.8	°C		02/16/22 12:02	1		02/16/22 12:02	FIELD	Field
Turbidity, Field Measured	3.13	NTU		02/16/22 12:02	1	0.00	02/16/22 12:02	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	640	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	680	mg/L		02/21/22 13:04	1	26	02/21/22 15:08	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 10:52	JMW	EPA 6020A
Arsenic	16	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:52	JMW	EPA 6020A
Barium	210	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:52	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:52	JMW	EPA 6020A
Boron	98	ug/L		02/17/22 08:20	5	10	02/21/22 10:52	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:52	JMW	EPA 6020A
Calcium	140	mg/L		02/17/22 08:20	5	0.20	02/21/22 10:52	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 10:52	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/17/22 08:20	5	2.0	02/21/22 10:52	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:52	JMW	EPA 6020A
Magnesium	59	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:52	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 10:52	JMW	EPA 6020A
Molybdenum	1.9	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:52	JMW	EPA 6020A
Potassium	1.6	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:52	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:52	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FB03042-07
Name: AW-08 DUPLICATE
Alias: EDW_257_301

Sampled: 02/16/22 12:02
Received: 02/16/22 16:00
Matrix: Ground Water - Field Duplicate
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Sodium	64	mg/L		02/17/22 08:20	5	0.22	02/21/22 10:52	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:52	JMW	EPA 6020A
Lithium	< 20	ug/L		02/17/22 08:20	1	20	02/18/22 10:54	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB03042-08
Name: FIELD BLANK
Alias: EDW_257_301

Sampled: 02/16/22 11:56
Received: 02/16/22 16:00
Matrix: DI Water - Field Blank
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 1.0	mg/L		02/18/22 17:55	1	1.0	02/18/22 17:55	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/18/22 17:55	1	0.250	02/18/22 17:55	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/18/22 17:55	1	1.0	02/18/22 17:55	CRD	EPA 300.0 REV 2.1
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	< 2.0	mg/L		02/22/22 08:14	1	2.0	02/22/22 08:14	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 2.0	mg/L		02/22/22 08:14	1	2.0	02/22/22 08:14	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	53	mg/L		02/21/22 13:04	1	17	02/21/22 15:08	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 10:55	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:55	JMW	EPA 6020A
Barium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:55	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:55	JMW	EPA 6020A
Boron	63	ug/L		02/17/22 08:20	5	10	02/21/22 10:55	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:55	JMW	EPA 6020A
Calcium	< 0.20	mg/L		02/17/22 08:20	5	0.20	02/21/22 10:55	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 10:55	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/17/22 08:20	5	2.0	02/21/22 10:55	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:55	JMW	EPA 6020A
Magnesium	< 0.10	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:55	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 10:55	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:55	JMW	EPA 6020A
Potassium	< 0.10	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:55	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:55	JMW	EPA 6020A
Sodium	< 0.22	mg/L		02/17/22 08:20	5	0.22	02/21/22 10:55	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:55	JMW	EPA 6020A
Lithium	< 20	ug/L		02/17/22 08:20	1	20	02/18/22 10:56	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB03042-09
Name: EQUIPMENT BLANK
Alias: EDW_257_301

Sampled: 02/16/22 11:56
Received: 02/16/22 16:00
Matrix: DI Water - Equipment Blank
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 1.0	mg/L		02/18/22 18:15	1	1.0	02/18/22 18:15	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/18/22 18:15	1	0.250	02/18/22 18:15	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/18/22 18:15	1	1.0	02/18/22 18:15	CRD	EPA 300.0 REV 2.1
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	< 2.0	mg/L		02/22/22 08:14	1	2.0	02/22/22 08:14	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 2.0	mg/L		02/22/22 08:14	1	2.0	02/22/22 08:14	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	47	mg/L		02/21/22 13:04	1	17	02/21/22 15:08	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 10:59	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:59	JMW	EPA 6020A
Barium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:59	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:59	JMW	EPA 6020A
Boron	64	ug/L		02/17/22 08:20	5	10	02/21/22 10:59	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:59	JMW	EPA 6020A
Calcium	< 0.20	mg/L		02/17/22 08:20	5	0.20	02/21/22 10:59	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 10:59	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/17/22 08:20	5	2.0	02/21/22 10:59	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:59	JMW	EPA 6020A
Magnesium	< 0.10	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:59	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 10:59	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:59	JMW	EPA 6020A
Potassium	< 0.10	mg/L		02/17/22 08:20	5	0.10	02/21/22 10:59	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:59	JMW	EPA 6020A
Sodium	< 0.22	mg/L		02/17/22 08:20	5	0.22	02/21/22 10:59	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 10:59	JMW	EPA 6020A
Lithium	< 20	ug/L		02/17/22 08:20	1	20	02/18/22 10:59	TJJ	EPA 6010B

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B224681 - SW 3015 - EPA 6020A									
Blank (B224681-BLK1)				Prepared: 02/17/22 Analyzed: 02/21/22					
Antimony	< 3.0	ug/L							
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Cadmium	< 1.0	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							
Magnesium	< 0.10	mg/L							
Mercury	< 0.20	ug/L							
Molybdenum	< 1.0	ug/L							
Potassium	< 0.10	mg/L							
Selenium	< 1.0	ug/L							
Sodium	< 0.10	mg/L							
Thallium	< 1.0	ug/L							
Lithium	< 20	ug/L							
LCS (B224681-BS1)				Prepared: 02/17/22 Analyzed: 02/21/22					
Antimony	526	ug/L		555.6		95	80-120		
Arsenic	504	ug/L		555.6		91	80-120		
Barium	539	ug/L		555.6		97	80-120		
Beryllium	511	ug/L		555.6		92	80-120		
Boron	535	ug/L		555.6		96	80-120		
Cadmium	531	ug/L		555.6		96	80-120		
Calcium	6.10	mg/L		5.556		110	80-120		
Chromium	566	ug/L		555.6		102	80-120		
Cobalt	546	ug/L		555.6		98	80-120		
Lead	555	ug/L		555.6		100	80-120		
Magnesium	6.32	mg/L		5.556		114	80-120		
Mercury	50.8	ug/L		55.56		91	80-120		
Molybdenum	497	ug/L		555.6		90	80-120		
Potassium	6.40	mg/L		5.556		115	80-120		
Selenium	533	ug/L		555.6		96	80-120		
Sodium	6.49	mg/L		5.556		117	80-120		
Thallium	529	ug/L		555.6		95	80-120		
Lithium	549	ug/L		555.6		99	80-120		
Batch B224815 - No Prep - SM 2540C									
Blank (B224815-BLK1)				Prepared & Analyzed: 02/18/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224815-BS1)				Prepared & Analyzed: 02/18/22					

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B224815 - No Prep - SM 2540C									
LCS (B224815-BS1)				Prepared & Analyzed: 02/18/22					
Solids - total dissolved solids (TDS)	987	mg/L		1000		99	84.9-109		
Batch B224911 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B224911-CCB1)				Prepared & Analyzed: 02/18/22					
Sulfate	0.0435	mg/L							
Chloride	0.327	mg/L							
Fluoride	0.00	mg/L							
Calibration Check (B224911-CCV1)				Prepared & Analyzed: 02/18/22					
Fluoride	4.93	mg/L		5.000		99	90-110		
Sulfate	4.80	mg/L		5.000		96	90-110		
Chloride	4.74	mg/L		5.000		95	90-110		
Matrix Spike (B224911-MS1)	**Sample: FB03042-01**			Prepared & Analyzed: 02/18/22					
Sulfate	6.35	mg/L	Q4	1.500	3.28	204	80-120		
Fluoride	2.42	mg/L	Q1	1.500	0.132	152	80-120		
Chloride	< 1.0	mg/L	Q4	1.500	48	NR	80-120		
Matrix Spike (B224911-MS2)	**Sample: FB03042-02**			Prepared & Analyzed: 02/18/22					
Sulfate	1.00E9	mg/L	Q4	1.500	25.0	NR	80-120		
Chloride	1.0E9	mg/L	Q4	1.500	37	NR	80-120		
Fluoride	2.91	mg/L	Q1	1.500	0.338	171	80-120		
Matrix Spike Dup (B224911-MSD1)	**Sample: FB03042-01**			Prepared & Analyzed: 02/18/22					
Chloride	< 1.0	mg/L	Q4	1.500	48	NR	80-120		20
Sulfate	6.28	mg/L	Q4	1.500	3.28	200	80-120	1	20
Fluoride	2.39	mg/L	Q2	1.500	0.132	150	80-120	1	20
Matrix Spike Dup (B224911-MSD2)	**Sample: FB03042-02**			Prepared & Analyzed: 02/18/22					
Chloride	1.0E9	mg/L	Q4	1.500	37	NR	80-120	0	20
Sulfate	1.00E9	mg/L	Q4	1.500	25.0	NR	80-120	0	20
Fluoride	2.97	mg/L	Q2	1.500	0.338	175	80-120	2	20
Batch B224988 - No Prep - SM 2540C									
Blank (B224988-BLK1)				Prepared & Analyzed: 02/21/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224988-BS1)				Prepared & Analyzed: 02/21/22					
Solids - total dissolved solids (TDS)	993	mg/L		1000		99	84.9-109		
Duplicate (B224988-DUP1)	**Sample: FB03042-04**			Prepared & Analyzed: 02/21/22					
Solids - total dissolved solids (TDS)	860	mg/L	M		780			10	5
Duplicate (B224988-DUP2)	**Sample: FB03042-05**			Prepared & Analyzed: 02/21/22					
Solids - total dissolved solids (TDS)	1220	mg/L			1220			0	5
Batch B225230 - No Prep - SM 2320B 1997									
Blank (B225230-BLK1)				Prepared & Analyzed: 02/22/22					
Alkalinity - bicarbonate as CaCO3	< 2.0	mg/L							
Batch B225231 - No Prep - SM 2320B 1997									
Blank (B225231-BLK1)				Prepared & Analyzed: 02/22/22					

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B225231 - No Prep - SM 2320B 1997									
Blank (B225231-BLK1)				Prepared & Analyzed: 02/22/22					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Batch B225239 - No Prep - SM 2320B 1997									
Blank (B225239-BLK1)				Prepared & Analyzed: 02/22/22					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Duplicate (B225239-DUP2)	**Sample: FB03042-01**			Prepared & Analyzed: 02/22/22					
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
Duplicate (B225239-DUP5)	**Sample: FB03042-02**			Prepared & Analyzed: 02/22/22					
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
Batch B225240 - No Prep - SM 2320B 1997									
Blank (B225240-BLK1)				Prepared & Analyzed: 02/22/22					
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
Blank (B225240-BLK2)				Prepared & Analyzed: 02/22/22					
Alkalinity - bicarbonate as CaCO3	5.00	mg/L							
Duplicate (B225240-DUP2)	**Sample: FB03042-01**			Prepared & Analyzed: 02/22/22					
Alkalinity - bicarbonate as CaCO3	825	mg/L			800			3	10
Duplicate (B225240-DUP5)	**Sample: FB03042-02**			Prepared & Analyzed: 02/22/22					
Alkalinity - bicarbonate as CaCO3	438	mg/L			400			9	10
Batch B225464 - No Prep - SM 2320B 1997									
Blank (B225464-BLK1)				Prepared & Analyzed: 02/24/22					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Blank (B225464-BLK2)				Prepared & Analyzed: 02/24/22					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Batch B225465 - No Prep - SM 2320B 1997									
Blank (B225465-BLK1)				Prepared & Analyzed: 02/24/22					
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
Blank (B225465-BLK2)				Prepared & Analyzed: 02/24/22					
Alkalinity - bicarbonate as CaCO3	7.50	mg/L							

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NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050
TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615
TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)
Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)
Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807
USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050
Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
Q1	Matrix Spike failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
Q2	Matrix Spike Duplicate failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
Q3	Matrix Spike/Matrix Spike Duplicate both failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
Q4	The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Gail J Schindler

Certified by: Gail Schindler, Project Manager

FB030412-09 DCW

Ramboll - Milwaukee
NRT Edwards CCR Ash Pond

CHAIN OF CUSTODY # 1
DATE: 2/16/22

PAGE: 1 OF 1

LABORATORY SAMPLES SUBMITTED TO:
PDC Laboratories, Inc.

ADDRESS:
2231 W Altorfer Drive

CITY:
Peoria, IL 61615

TEL: **309-683-1716** | FAX: **309-692-9689** | E-MAIL: gschindler@pdclab.com

CLIENT PROJECT NAME: **Edwards Ash Pond**

PROJECT NUMBER / TASK NUMBER: **2285 / Unit 301**

PROJECT CONTACT: **Gail Schindler**

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

TURNAROUND TIME
☐ STANDARD ☐ 24 HR ☐ 48 HR ☐ 2 HR ☒ 5 DAYS

Data Package: Level 2 Level 4

Preservatives: A = none, B= HCL, C = H_2S0_4, D = $HN0_3$, E = methanol, F = Sodium Bisulfate, G = zinc acetate, H = other

Preservation Code (pick letter)

Filtered (Yor N)

REQUESTED ANALYSIS

Method Number and Analytes

	A	A	D	A																				
	N	N	N	N																				
	300.0-Cl,F,SO4	2540C-TDS	6020- B, Ca, K, Mg, Na	2310-Alk CO3, HCO3	Sb, As, Ba, Be, Cd	Cr, Co, Pb, Li, Hg	Mo, Se, Tl	Ra226 228	2/18/22															

SPECIAL REQUIREMENTS

LAB USE ONLY	SAMPLE ID	QC SAMPLE	FIELD COMMENTS	SAMPLE DATE	SAMPLE TIME	MATRIX	SAMPLE TYPE	SAMPLE INTERVAL (ft) TOP	SAMPLE INTERVAL (ft) BOTTOM	#Cont
	AP05S			2/16/22	1158	GW	Grab			3
	AW-06		MS/MSD/Dup	2/16/22	1047	GW	Grab			4
	AW-08			2/16/22	1202	GW	Grab			3
	AW-09			2/16/22	1030	GW	Grab			3
	AW-10			2/16/22	1429	GW	Grab			3
	AW-11			2/16/22	1341	GW	Grab			3
	AW-08 Dup			2/16/22	1202	GW	Grab			2
	Field Blank			2/16/22	1156	DI	Grab			3
	Equipment Blank			2/16/22	1156	DI	Grab			3

Relinquished by: (Signature)	Received by: (Signature)	Date: 2/16/22	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date: 2/16/22	Time: 1690

Sample Temperature upon Receipt 0.8 °C
Chill Process Started (Y) or N
Samples Received on ice (Y) or N
Noncomformance Report Needed Y or (N)

EDWARDS PART 845 DTW FORM		DATE: 2/16/22	
Well	DTW	Well	DTW
AP05S	5.38	AP06	4.61
AP05D	4.71	AP08	7.91
AP07S	25.09	AP09	8.36
AP07D	37.13	APW-01	5.64
APW-02	9.05	APW-05	8.37
APW-03	7.90	APW-06	25.61
APW-04	7.28	APW-09	25.57
AW-08	23.75	APW-10	1.88
AW-12	7.60	APW-11	5.40
AW-13	5.52	RIVER (get from plant)	
AW-14	6.44	EMW 02	19.44
AW-15	8.00	EMW 03	22.62
AW-15C	6.50	EMW 04	19.74
AW-15S	8.92	EMW 05	20.60
AW-16	23.88		
AW-17	24.47		
AW-18	26.82		
AW-19	13.74		
AW-20	16.78		
AW-21	17.39		
AW-22	11.73		
EDW-P002	12.36		
XPW01A	11.58		
XPW02	20.58		
XPW03	15.39		

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

Edwards Ash Pond depth form

Site: Edwards Ash Pond | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 301 | Start Date: 2/16/22 | Time: 11:08

Field Personnel: Sam Grant | Finish Date: 2/16/22 | Time: 11:58

WELL INFORMATION

Well ID:	AP-05S
Casing ID:	2 Inches
Screen Interval:	n/a
Borehole Diameter:	n/a Inches
Filter Pack Interval:	n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ML/MINUTE

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Time (24-Hour)	Depth FT BTOC	Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	5.30	11:08	5.49	11:58
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot: n/a

Standing Water Column: n/a feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 19FF2111015 HB

Water Quality Probe Type and Serial # Aquatroll 600 #739450

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	11:20	0.58	5.47	0.17	12.06	6.67	1684.7	0.32	8107.1	-110.5	opaque
purge	11:22	0.63	5.49	0.19	12.05	6.68	1658.9	0.31	3002.1	-114.2	opaque
	11:24	0.69	5.49	0.19	12.03	6.68	1671.7	0.29	3051.3	-114.6	opaque

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

Edwards Ash Pond depth form

Site: Edwards Ash Pond | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 301 | Start Date: 2/16/22 | Time: 09:15

Field Personnel: Sam Grant | Finish Date: 2/16/22 | Time: 10:47

WELL INFORMATION

Well ID:	AW-06
Casing ID:	2 Inches
Screen Interval:	n/a
Borehole Diameter:	n/a Inches
Filter Pack Interval:	n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ML/MINUTE

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Time (24-Hour)	Depth FT BTOC	Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	26.51	09:15	33.76	10:47
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot: n/a

Standing Water Column: n/a feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 19FF2111015 HB

Water Quality Probe Type and Serial # Aquatroll 600 # 739450

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	10:10	0.90	29.16	2.65	12.16	6.81	993.61	0.46	651.64	-52.2	dark
purge	10:12	0.95	29.40	2.89	12.18	6.82	988.57	0.50	600.83	-51.5	dark
	10:14	1.00	29.65	3.14	12.17	6.84	984.24	0.51	600.44	-49.5	dark

NOTES

depth to water would not stablize

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
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ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

Edwards Ash Pond depth form

Site: Edwards Ash Pond | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 301 | Start Date: 2/16/22 | Time: 1044

Field Personnel: MJN | Finish Date: 2/16/22 | Time: 1202

WELL INFORMATION

Well ID:	AW-08	
Casing ID:	2	Inches
Screen Interval:	n/a	
Borehole Diameter:	n/a	Inches
Filter Pack Interval:	n/a	

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ML/MINUTE

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Time (24-Hour)	Depth FT BTOC	Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	23.66	1047	32.88	1200
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot: n/a

Standing Water Column: n/a feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 269860

Water Quality Probe Type and Serial # AT-600: 846000

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed ~~(gallons)~~ mL	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1047	—	23.66	—	—	—	—	—	—	—	—
purge	1102	1500 mL	25.95	2.29	14.88	7.02	2,220	9.17	3.39	-79.4	Slightly hue
	1103	1600	26.20	0.25	14.87	7.00	2,380	8.93	3.23	-85.5	↓
	1104	1700	26.51	0.31	14.84	6.99	2,950	8.31	3.13	-86.9	↓

NOTES

2/16/22

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
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ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

Edwards Ash Pond depth form

Site: Edwards Ash Pond | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 301 | Start Date: 2/16/22 | Time: 0917

Field Personnel: MJN | Finish Date: 2/16/22 | Time: 1030

WELL INFORMATION

Well ID:	AW-09
Casing ID:	2 Inches
Screen Interval:	n/a
Borehole Diameter:	n/a Inches
Filter Pack Interval:	n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ML/MINUTE

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Time (24-Hour)	Depth FT BTOC	Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	25.57	0920	35.58	1026
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot: n/a

Standing Water Column: n/a feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 269860

Water Quality Probe Type and Serial # AT-600 846000; W-TAPE - 269860

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	0939	300	27.14	~~37.14~~	—	—	—	—	—	—	—
purge	0956	2000	30.56	3.42	12.22	6.87	1404.4	1.73	114.19	-103.9	Grey, cloudy
	0957	2100	30.72	0.16	12.27	6.87	1403.8	1.70	127.76	-104.4	Grey, cloudy
	0958	2200	30.82	0.10	12.22	6.88	1369.6	1.71	137.95	-104.6	Grey, clearing

NOTES

Tina Rudnick 2/16/22

ABBREVIATIONS

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SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

Edwards Ash Pond depth form

Site: Edwards Ash Pond Client: RAMBOLL

Project Number: 2285 Task #: Unit 301 Start Date: 2/16/22 Time: 1326

Field Personnel: Matt Tuttle Finish Date: 2/16/22 Time: 1429

WELL INFORMATION

Well ID: AW-11 10

Casing ID: 2 Inches

Screen Interval: n/a

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ML/MINUTE

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Time (24-Hour)	Depth FT BTOC	Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	1.86	1326	6.09	1429
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot: n/a

Standing Water Column: n/a feet

1 Well Volume: n/a Gallons 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: Solinst 269022

Water Quality Probe Type and Serial # Aquatroll 600 # 762215

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed ~~(gallons)~~ mL	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1326	0	1.86	0.00							
purge	1347	2100	4.40	2.54	9.71	6.98	2096.7	0.00	30.34	-153.8	slight
	1349	2300	4.53	2.67	9.80	6.98	2102.7	0.00	32.76	-153.9	slight
	1351	2500	4.69	2.83	9.88	6.98	2099.6	0.00	30.71	-152.7	slight
	1353	2700	4.80	2.94	9.90	6.97	2098.6	0.00	32.78	-152.7	slight

NOTES

Drawdown did not stabilize, slow recharge

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

MW-11 2/16/22

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

Edwards Ash Pond depth form

Site: Edwards Ash Pond | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 301 | Start Date: 2/16/22 | Time: 1236

Field Personnel: Matt Juliet | Finish Date: 2/16/22 | Time: 1341

WELL INFORMATION

Well ID: AW-~~10~~ 11

Casing ID: 2 inches MC 2/16/22

Screen Interval: n/a

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ML/MINUTE

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Time (24-Hour)	Depth FT BTOC	Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	5.38	1236	5.38	1341
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot: n/a

Standing Water Column: n/a feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: ~~N/A~~ Solinst 269022

Water Quality Probe Type and Serial # Aquatroll 600 # 762213

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (~~gallons~~) mL MC 2/16/22	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1236	0	5.38	0.00							
purge	1248	1200	5.38	0.00	9.42	6.96	1817.1	0.00	464.23	-169.0	poor
	1250	1400	5.38	0.00	9.43	6.96	1807.2	0.00	424.28	-169.9	poor
	1252	1600	5.38	0.00	9.49	6.94	1798.0	0.00	301.46	-168.6	poor
	1259	2300	5.38	0.00	9.43	6.89	1786.9	0.00	130.64	-163.8	moderate
	1301	2500	5.38	0.00	9.51	6.88	1780.2	0.00	102.61	-162.5	moderate
	1303	2700	5.38	0.00	9.56	6.87	1779.2	0.00	100.23	~~-160.5~~	moderate → -161.5
	1305	2900	5.38	0.00	9.57	6.86	1774.1	0.00	95.74	-160.6	moderate

MC 2/16/22

MC 2/16/22

NOTES

water line partially frozen, pulled out part way to thaw.

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

Multiparameter Meter Field Calibration Checklist

Field Personnel	MJN	Date:	3/16/22
Weather conditions:	41-55°, cloudy, N19 mph winds	Signature:	
Make/Model	AquaTroll 600	S/N	846000

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 0857

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.01	s.u.	±0.1 s.u.	P	N	N/A
7a	7.00	s.u.	±0.1 s.u.			
10a	10.01	s.u.	±0.1 s.u.			
SC Zero (DI)	2.11	µS/cm	0<25 µS/cm			
SC 2000	1955	µS/cm	±5%			
ORP	240	mV	±15 mV			
DO (Zero pt)	0.07	mg/L	±0.1			
DO (Saturated)	98.64	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.02	s.u.	±0.15 s.u.	P	N/A
7b	6.85	s.u.	±0.15 s.u.		
10b	10.02	s.u.	±0.15 s.u.		
SC1000	978	µS/cm	±5%		

CCV (Continued Calibration Verification): 1206

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.00	s.u.	±0.1 s.u.	P	N	N/A
7	7.02	s.u.	±0.1 s.u.			
10	10.04	s.u.	±0.1 s.u.			
SC 1000	1008	µS/cm	±5%			
DO (Zero pt)	0.05	mg/L	±0.1 mg/L			
Turbidity (DI)	0.00	NTU	<2 NTU			

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

Signature: [signature]

Date: 2/16/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Matt Jalbert Sam Grant	Date:	2/16/22
Weather conditions:	44°F - 53°F cloudy wind S 15-20 mph	Signature:	
Make/Model	AquaTroll 600	S/N	73948

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 0844

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	3.74	s.u.	±0.1 s.u.	Pass	No	NA
7a	7.00	s.u.	±0.1 s.u.			
10a	10.04	s.u.	±0.1 s.u.			
SC Zero (DI)	4.28	µS/cm	0<25 µS/cm			
SC 2000	1973.0	µS/cm	±5%			
ORP	250.2 @ 29°	mV	±15 mV			
DO (Zero pt)	0.09	mg/L	±0.1			
DO (Saturated)	98.13	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification) 0854

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	3.96	s.u.	±0.15 s.u.	Pass	None
7b	6.85	s.u.	±0.15 s.u.		
10b	10.01	s.u.	±0.15 s.u.		
SC1000	985.94	µS/cm	±5%		

CCV (Continued Calibration Verification): 12:30

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.08	s.u.	±0.1 s.u.	Pass	No	NA
7	7.07	s.u.	±0.1 s.u.			
10	10.05	s.u.	±0.1 s.u.			
SC 1000	957.84	µS/cm	±5%			
DO (Zero pt)	0.09	mg/L	±0.1 mg/L			
Turbidity (DI)	0.00	NTU	<2 NTU			

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	~~±0.1 s.u.~~			
7*		~~s.u.~~	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
~~DO (Zero pt)~~		mg/L	±0.1 mg/L			
~~Turbidity (DI)~~		~~NTU~~	~~<2 NTU~~			
Comments:						

MC 2/16/22

Signature:

Date: 2/16/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Matt Julien	Date:	2/16/22
Weather conditions:	44°-53°F cloudy wind S 15-20 mph	Signature:	
Make/Model	AquaTroll 600	S/N	762215

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 11:58

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.01	s.u.	±0.1 s.u.	Pass	No	NA
7a	7.06	s.u.	±0.1 s.u.	↓	↓	↓
10a	10.13	s.u.	±0.1 s.u.	Fail	Yes	10.00
SC Zero (DI)	24.77	µS/cm	0<25 µS/cm	Pass	No	N/A
SC 2000	1984.6	µS/cm	±5%			
ORP	238.3 @11%	mV	±15 mV			
DO (Zero pt)	0.00	mg/L	±0.1			
DO (Saturated)	98.46	%	97-100%			
Turbidity (DI)	0.89	NTU	<2 NTU			

ICV (Initial Calibration Verification) 12:08

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.05	s.u.	±0.15 s.u.	Pass	None
7b	6.85	s.u.	±0.15 s.u.		
10b	9.93	s.u.	±0.15 s.u.		
SC1000	983.7	µS/cm	±5%		

CCV (Continued Calibration Verification): 1415 — Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.02	s.u.	±0.1 s.u.	Pass	No	N/A
7	7.00	s.u.	±0.1 s.u.			
10	9.99	s.u.	±0.1 s.u.			
SC 1000	978.08	µS/cm	±5%			
DO (Zero pt)	0.00	mg/L	±0.1 mg/L			
Turbidity (DI)	0.82	NTU	<2 NTU			

CCV (Continued Calibration Verification): Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

MG 2/16/22

Signature: [signature]

Date: ~~AE~~ 2/16/22 MG 2/16/22

ANALYTICAL REPORT

March 07, 2022

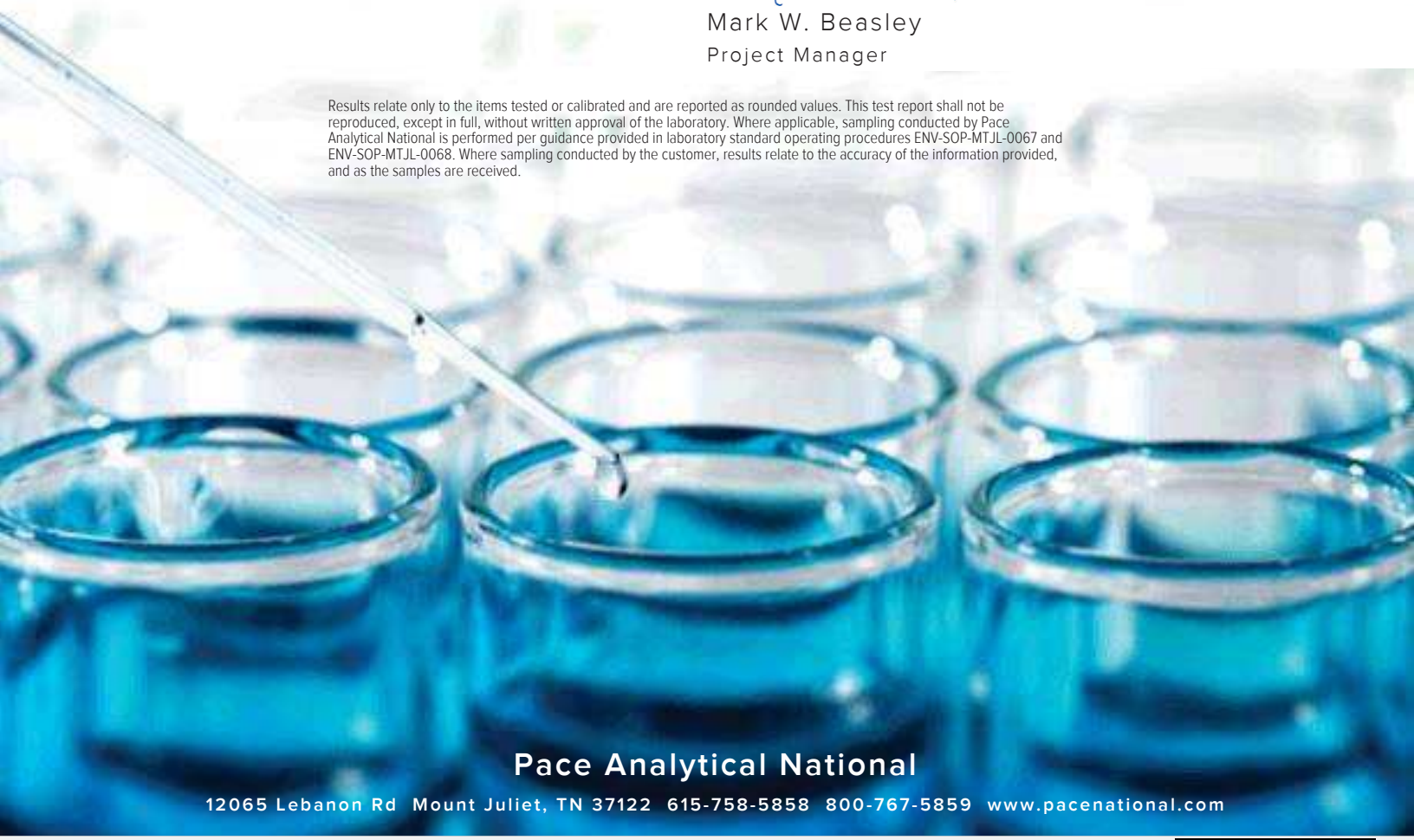
PDC Laboratory, Inc.

Sample Delivery Group:	L1463959
Samples Received:	02/21/2022
Project Number:	FB03042
Description:	

Report To: Gail Schindler
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

Mark W. Beasley
Project Manager



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

TABLE OF CONTENTS

FB03042-01 L1463959-01 Non-Potable Water

Collected by | Collected date/time 02/16/22 11:58 | Received date/time 02/21/22 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1821179	1	02/23/22 10:16	02/28/22 13:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1822631	1	02/28/22 13:03	03/02/22 11:56	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1822631	1	02/28/22 13:03	03/02/22 11:56	RGT	Mt. Juliet, TN

FB03042-02 L1463959-09 Non-Potable Water

Collected by | Collected date/time 02/16/22 10:47 | Received date/time 02/21/22 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1821179	1	02/23/22 10:16	02/28/22 13:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1822631	1	03/01/22 13:15	03/02/22 11:56	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1822631	1	03/01/22 13:15	03/02/22 11:56	RGT	Mt. Juliet, TN

FB03042-03 L1463959-10 Non-Potable Water

Collected by | Collected date/time 02/16/22 12:02 | Received date/time 02/21/22 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1821179	1	02/23/22 10:16	02/28/22 13:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1822631	1	03/01/22 13:15	03/02/22 11:56	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1822631	1	03/01/22 13:15	03/02/22 11:56	RGT	Mt. Juliet, TN

FB03042-04 L1463959-11 Non-Potable Water

Collected by | Collected date/time 02/16/22 10:30 | Received date/time 02/21/22 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1821179	1	02/23/22 10:16	02/28/22 13:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1822631	1	03/01/22 13:15	03/02/22 11:56	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1822631	1	03/01/22 13:15	03/02/22 11:56	RGT	Mt. Juliet, TN

FB03042-05 L1463959-12 Non-Potable Water

Collected by | Collected date/time 02/16/22 14:29 | Received date/time 02/21/22 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1821179	1	02/23/22 10:16	03/01/22 13:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1822631	1	03/01/22 13:15	03/02/22 11:56	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1822631	1	03/01/22 13:15	03/02/22 11:56	RGT	Mt. Juliet, TN

FB03042-06 L1463959-13 Non-Potable Water

Collected by | Collected date/time 02/16/22 13:41 | Received date/time 02/21/22 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1821179	1	02/23/22 10:16	03/01/22 13:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1822631	1	03/01/22 13:15	03/02/22 11:56	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1822631	1	03/01/22 13:15	03/02/22 11:56	RGT	Mt. Juliet, TN

FB03042-08 L1463959-14 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/16/22 11:56	02/21/22 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1821179	1	02/23/22 10:16	03/01/22 13:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1822631	1	03/01/22 13:15	03/02/22 11:56	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1822631	1	03/01/22 13:15	03/02/22 11:56	RGT	Mt. Juliet, TN

FB03042-09 L1463959-15 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/16/22 11:56	02/21/22 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1821179	1	02/23/22 10:16	03/01/22 13:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1822631	1	03/01/22 13:15	03/02/22 11:56	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1822631	1	03/01/22 13:15	03/02/22 11:56	RGT	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.

Mark W. Beasley
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.46		0.315	0.543	02/28/2022 13:45	WG1821179
(T) Barium	*112*			*62.0-143*	*02/28/2022 13:45*	WG1821179
(T) Yttrium	*96.7*			*79.0-136*	*02/28/2022 13:45*	WG1821179

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	4.40		0.764	0.574	03/02/2022 11:56	WG1822631

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	2.94		0.696	0.186	03/02/2022 11:56	WG1822631
(T) Barium-133	*94.4*			*30.0-143*	*03/02/2022 11:56*	WG1822631

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.725		0.377	0.687	02/28/2022 13:45	WG1821179
(T) Barium	*106*			*62.0-143*	*02/28/2022 13:45*	WG1821179
(T) Yttrium	*99.3*			*79.0-136*	*02/28/2022 13:45*	WG1821179

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.04		0.445	0.715	03/02/2022 11:56	WG1822631

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.310		0.237	0.198	03/02/2022 11:56	WG1822631
(T) Barium-133	*93.0*			*30.0-143*	*03/02/2022 11:56*	WG1822631

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.933		0.296	0.525	02/28/2022 13:45	WG1821179
(T) Barium	*99.3*			*62.0-143*	*02/28/2022 13:45*	WG1821179
(T) Yttrium	*105*			*79.0-136*	*02/28/2022 13:45*	WG1821179

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.20		0.394	0.614	03/02/2022 11:56	WG1822631

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.269	J	0.260	0.318	03/02/2022 11:56	WG1822631
(T) Barium-133	*91.0*			*30.0-143*	*03/02/2022 11:56*	WG1822631

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.758		0.386	0.702	02/28/2022 13:45	WG1821179
(T) Barium	*102*			*62.0-143*	*02/28/2022 13:45*	WG1821179
(T) Yttrium	*105*			*79.0-136*	*02/28/2022 13:45*	WG1821179

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.34		0.516	0.763	03/02/2022 11:56	WG1822631

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.584		0.343	0.298	03/02/2022 11:56	WG1822631
(T) Barium-133	*95.3*			*30.0-143*	*03/02/2022 11:56*	WG1822631

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.978		0.342	0.615	03/01/2022 13:50	WG1821179
(T) Barium	*95.5*			*62.0-143*	*03/01/2022 13:50*	WG1821179
(T) Yttrium	*103*			*79.0-136*	*03/01/2022 13:50*	WG1821179

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.52		0.666	0.703	03/02/2022 11:56	WG1822631

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	1.54		0.571	0.341	03/02/2022 11:56	WG1822631
(T) Barium-133	*94.7*			*30.0-143*	*03/02/2022 11:56*	WG1822631

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.59		0.345	0.602	03/01/2022 13:50	WG1821179
(T) Barium	*99.9*			*62.0-143*	*03/01/2022 13:50*	WG1821179
(T) Yttrium	*97.1*			*79.0-136*	*03/01/2022 13:50*	WG1821179

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.79		0.579	0.671	03/02/2022 11:56	WG1822631

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	1.20		0.465	0.296	03/02/2022 11:56	WG1822631
(T) Barium-133	*98.6*			*30.0-143*	*03/02/2022 11:56*	WG1822631

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.483	J	0.313	0.577	03/01/2022 13:50	WG1821179
(T) Barium	*97.5*			*62.0-143*	*03/01/2022 13:50*	WG1821179
(T) Yttrium	*94.9*			*79.0-136*	*03/01/2022 13:50*	WG1821179

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.488	J	0.337	0.648	03/02/2022 11:56	WG1822631

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.00466	U	0.126	0.296	03/02/2022 11:56	WG1822631
(T) Barium-133	*95.8*			*30.0-143*	*03/02/2022 11:56*	WG1822631

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.704		0.333	0.606	03/01/2022 13:50	WG1821179
(T) Barium	*101*			*62.0-143*	*03/01/2022 13:50*	WG1821179
(T) Yttrium	*106*			*79.0-136*	*03/01/2022 13:50*	WG1821179

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.704		0.339	0.652	03/02/2022 11:56	WG1822631

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	-0.0252	U	0.0636	0.240	03/02/2022 11:56	WG1822631
(T) Barium-133	*96.3*			*30.0-143*	*03/02/2022 11:56*	WG1822631

Method Blank (MB)

(MB) R3767089-1 02/28/22 13:45

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	0.0781	U	0.226	0.422
(T) Barium	*102*		*102*	
(T) Yttrium	*102*		*102*	

L1461537-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1461537-03 02/28/22 13:45 • (DUP) R3767089-5 02/28/22 13:45

Analyte	Original Result pCi/l	Original Uncertainty + / -	Original MDA pCi/l	DUP Result pCi/l	DUP Uncertainty + / -	DUP MDA pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.172	0.314	0.587	-0.918	0.886	0.587	1	200	1.16	U	20	3
(T) Barium	*107*			*97.4*	*97.4*							
(T) Yttrium	*91.3*			*102*	*102*							

Laboratory Control Sample (LCS)

(LCS) R3767089-2 02/28/22 13:45

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.37	87.4	80.0-120	
(T) Barium			*99.2*		
(T) Yttrium			*102*		

L1461537-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1461537-03 02/28/22 13:45 • (MS) R3767089-3 02/28/22 13:45 • (MSD) R3767089-4 02/28/22 13:45

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	16.7	0.172	17.9	17.1	106	102	1	70.0-130			4.28		20
(T) Barium		*107*			*93.6*	*100*							
(T) Yttrium		*91.3*			*95.0*	*97.0*							

Method Blank (MB)

(MB) R3765953-5 03/02/22 12:25

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	-0.00185	U	0.0115	0.0294
(T) Barium-133	*90.4*		*90.4*	

L1463959-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1463959-15 03/02/22 11:56 • (DUP) R3765953-4 03/02/22 11:56

Analyte	Original Result pCi/l	Original Uncertainty + / -	Original MDA pCi/l	DUP Result pCi/l	DUP Uncertainty + / -	DUP MDA pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	-0.0252	0.0636	0.240	0.164	0.190	0.240	1	200	0.942	J	20	3
(T) Barium-133	*96.3*			*86.3*	*86.3*							

Laboratory Control Sample (LCS)

(LCS) R3765953-1 03/02/22 11:56

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.57	111	80.0-120	
(T) Barium-133			*87.2*		

L1463959-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1463959-14 03/02/22 11:56 • (MS) R3765953-2 03/02/22 11:56 • (MSD) R3765953-3 03/02/22 11:56

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	20.1	0.00466	23.2	23.1	115	115	1	75.0-125			0.390		20
(T) Barium-133		*95.8*			*83.7*	*87.0*							

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.
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.
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.
U	Below Detectable Limits: Indicates that the analyte was not detected.

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.

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

FB03042

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

B140

L1463959

Sample: FB03042-01
Name: AP-05S

Sampled: 02/16/22 11:58
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/25/22 16:00	08/15/22 11:58	

Sample: FB03042-02
Name: AW-06 ADD MS/MSD/DUP

Sampled: 02/16/22 10:47
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/25/22 16:00	08/15/22 10:47	ADD MS/MSD/DUP

Sample: FB03042-03
Name: AW-08

Sampled: 02/16/22 12:02
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/25/22 16:00	08/15/22 12:02	

Sample: FB03042-04
Name: AW-09

Sampled: 02/16/22 10:30
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/25/22 16:00	08/15/22 10:30	

Sample: FB03042-05
Name: AW-10

Sampled: 02/16/22 14:29
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/25/22 16:00	08/15/22 14:29	

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

FB03042

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L1463959

Sample: FB03042-06
Name: AW-11

Sampled: 02/16/22 13:41
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/23/22 16:00	08/15/22 13:41	

Sample: FB03042-08
Name: FIELD BLANK

Sampled: 02/16/22 11:56
Matrix: DI Water
Preservative: HNO3, pH <2

-07

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/25/22 16:00	08/15/22 11:56	

Sample: FB03042-09
Name: EQUIPMENT BLANK

Sampled: 02/16/22 11:56
Matrix: DI Water
Preservative: HNO3, pH <2

-08

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/25/22 16:00	08/15/22 11:56	

Sample Receipt Checklist
COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N
If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: Y N

[illegible]com

Date Shipped: 2-17-22 Total # of Containers: 8 Sample Origin (State): IL PO #: 42

Turn-Around Time Requested ☑ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By	Date/Time	Received By	Date/Time
[signature]	2-17-22 11:40		
		[signature]	2/21/22 0920

Sample Temperature Upon Receipt	____ °C
Sample(s) Received on Ice	Y or N
Proper Bottles Received in Good Condition	Y or N
Bottles Filled with Adequate Volume	Y or N
Samples Received Within Hold Time	Y or N
Date/Time Taken From Sample Bottle	Y or N

FB030412-09 DCW

Ramboll - Milwaukee
NRT Edwards CCR Ash Pond

CHAIN OF CUSTODY # 1
DATE: 2/16/22

PAGE: 1 OF 1

LABORATORY SAMPLES SUBMITTED TO:
PDC Laboratories, Inc.
ADDRESS:
2231 W Altorfer Drive
CITY:
Peoria, IL 61615
TEL: **309-683-1716** FAX: **309-692-9689** E-MAIL **gschindler@pdclab.com**

CLIENT PROJECT NAME: **Edwards Ash Pond**
PROJECT NUMBER / TASK NUMBER: **2285 / Unit 301**
PROJECT CONTACT: **Gail Schindler**
QUOTE NO.:
SAMPLER(S): (SIGNATURE)

TURNAROUND TIME
☐ STANDARD ☐ 24 HR ☐ 48 HR ☐ 2 HR ☒ 5 DAYS

Data Package: Level 2 Level 4

Preservatives: A = none, B= HCL, C = H_2SO_4, D = HNO_3, E = methanol, F = Sodium Bisulfate, G = zinc acetate, H = other

Preservation Code (pick letter)
Filtered (Yor N)

REQUESTED ANALYSIS

Method Number and Analytes

	A	A	D	A																						
	N	N	N	N																						
	300.0-Cl,F,SO4	2540C-TDS	6020- B, Ca, K, Mg, Na	2310-Alk CO3, HCO3	Sb, As, Ba, Be, Cd	Cr, Co, Pb, Li, Hg	Mo, Se, Tl	Ra-226, 228																		

SPECIAL REQUIREMENTS

LAB USE ONLY	SAMPLE ID	QC SAMPLE	FIELD COMMENTS	SAMPLE DATE	SAMPLE TIME	MATRIX	SAMPLE TYPE	SAMPLE INTERVAL (ft) TOP	SAMPLE INTERVAL (ft) BOTTOM	#Cont
	AP05S			2/16/22	1158	GW	Grab			3
	AW-06		MS/MSD/Dup	2/16/22	1047	GW	Grab			4
	AW-08			2/16/22	1202	GW	Grab			3
	AW-09			2/16/22	1030	GW	Grab			3
	AW-10			2/16/22	1429	GW	Grab			3
	AW-11			2/16/22	1341	GW	Grab			3
	AW-08 Dup			2/16/22	1202	GW	Grab			2
	Field Blank			2/16/22	1156	DI	Grab			3
	Equipment Blank			2/16/22	1156	DI	Grab			3

Relinquished by: (Signature)	Received by: (Signature)	Date: 2/16/22	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date: 2/16/22	Time: 1600

Sample Temperature upon Receipt 0.8 °C
Chill Process Started (Y) or N
Samples Received on ice (Y) or N
Noncomforfmance Report Needed Y or (N)

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

October 05, 2022

Brian Voelker
Vistra - Edwards
604 Pierce Boulevard
O'Fallon, IL 62269

Dear Brian Voelker:

Please find enclosed the analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lisa.grant@pacelabs.com.

Sincerely,

Gail Schindler
Project Manager
(309) 692-9688 x1716
gail.schindler@pacelabs.com

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order FG04606

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FG04606-01
Name: AP05S
Matrix: Ground Water - Grab

Sampled: 07/25/22 16:57
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	4	pCi/L			1	0.651	09/06/22 10:24		904.0 903.0

Sample: FG04606-02
Name: AW-06
Matrix: Ground Water - Grab

Sampled: 07/25/22 12:05
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.679	pCi/L			1	0.498	09/01/22 14:20		904.0 903.0

Sample: FG04606-03
Name: AW-08
Matrix: Ground Water - Grab

Sampled: 07/25/22 13:30
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.09	pCi/L			1	0.562	09/01/22 14:20		904.0 903.0

Sample: FG04606-04
Name: AW-09
Matrix: Ground Water - Grab

Sampled: 07/25/22 11:09
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.803	pCi/L			1	0.413	09/01/22 14:20		904.0 903.0

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FG04606-05
Name: AW-10
Matrix: Ground Water - Grab

Sampled: 07/25/22 15:11
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.16	pCi/L			1	0.387	09/01/22 14:20		904.0 903.0

Sample: FG04606-06
Name: AW-11
Matrix: Ground Water - Grab

Sampled: 07/25/22 16:35
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.756	pCi/L			1	0.507	09/01/22 14:20		904.0 903.0

ANALYTICAL RESULTS

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FG04606-01
Name: AP05S
Matrix: Ground Water - Grab

Sampled: 07/25/22 16:57
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	49	mg/L		07/28/22 18:01	10	10	07/28/22 18:01	CJP	EPA 300.0 REV 2.1
Sulfate	2.4	mg/L		07/28/22 17:43	1	1.0	07/28/22 17:43	CJP	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	5.91	Feet		07/25/22 16:57	1		07/25/22 16:57	FIELD	Field
Dissolved oxygen, Field	1.5	mg/L		07/25/22 16:57	1		07/25/22 16:57	FIELD	Field
Oxidation Reduction Potential	-154	mV		07/25/22 16:57	1	-500	07/25/22 16:57	FIELD	Field
pH, Field Measured	6.73	pH Units		07/25/22 16:57	1		07/25/22 16:57	FIELD	Field
Specific Conductance, Field Measured	1240	umhos/cm		07/25/22 16:57	1		07/25/22 16:57	FIELD	Field
Temperature, Field Measured	21.0	°C		07/25/22 16:57	1		07/25/22 16:57	FIELD	Field
Turbidity, Field Measured	1000	NTU		07/25/22 16:57	1	0.00	07/25/22 16:57	FIELD	Field
General Chemistry - PIA									
Fluoride	< 0.250	mg/L		08/08/22 15:27	1	0.250	08/08/22 15:27	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	680	mg/L		07/27/22 11:03	1	34	07/27/22 12:54	CGL	SM 2540C
Total Metals - PIA									
Arsenic	14	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:04	JMW	EPA 6020A
Barium	1800	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:04	JMW	EPA 6020A
Beryllium	1.9	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:04	JMW	EPA 6020A
Boron	350	ug/L		07/27/22 09:49	5	10	07/29/22 11:19	JMW	EPA 6020A
Calcium	190	mg/L		07/27/22 09:49	5	0.20	07/28/22 16:04	JMW	EPA 6020A
Chromium	64	ug/L		07/27/22 09:49	5	4.0	07/28/22 16:04	JMW	EPA 6020A
Cobalt	36	ug/L		07/27/22 09:49	5	2.0	07/28/22 16:04	JMW	EPA 6020A
Lead	43	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:04	JMW	EPA 6020A
Molybdenum	4.6	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:04	JMW	EPA 6020A
Selenium	1.9	ug/L		07/27/22 09:49	5	1.0	07/29/22 11:19	JMW	EPA 6020A
Lithium	74	ug/L		07/27/22 09:49	1	20	07/29/22 10:40	TJJ	EPA 6010B

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FG04606-02
Name: AW-06
Matrix: Ground Water - Grab

Sampled: 07/25/22 12:05
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	40	mg/L		07/28/22 18:37	10	10	07/28/22 18:37	CJP	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		07/28/22 18:19	1	0.250	07/28/22 18:19	CJP	EPA 300.0 REV 2.1
Sulfate	24	mg/L		07/28/22 18:37	10	10	07/28/22 18:37	CJP	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	27.63	Feet		07/25/22 12:05	1		07/25/22 12:05	FIELD	Field
Dissolved oxygen, Field	0.37	mg/L		07/25/22 12:05	1		07/25/22 12:05	FIELD	Field
Oxidation Reduction Potential	-96.5	mV		07/25/22 12:05	1	-500	07/25/22 12:05	FIELD	Field
pH, Field Measured	7.17	pH Units		07/25/22 12:05	1		07/25/22 12:05	FIELD	Field
Specific Conductance, Field Measured	1010	umhos/cm		07/25/22 12:05	1		07/25/22 12:05	FIELD	Field
Temperature, Field Measured	16.3	°C		07/25/22 12:05	1		07/25/22 12:05	FIELD	Field
Turbidity, Field Measured	1.49	NTU		07/25/22 12:05	1	0.00	07/25/22 12:05	FIELD	Field
General Chemistry - PIA									
Solids - total dissolved solids (TDS)	550	mg/L		07/27/22 11:03	1	26	07/27/22 12:54	CGL	SM 2540C
Total Metals - PIA									
Arsenic	1.7	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:08	JMW	EPA 6020A
Barium	150	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:08	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:08	JMW	EPA 6020A
Boron	110	ug/L		07/27/22 09:49	5	10	07/29/22 11:23	JMW	EPA 6020A
Calcium	110	mg/L	Q4	07/27/22 09:49	5	0.20	07/28/22 16:08	JMW	EPA 6020A
Chromium	< 4.0	ug/L		07/27/22 09:49	5	4.0	07/28/22 16:08	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		07/27/22 09:49	5	2.0	07/28/22 16:08	JMW	EPA 6020A
Lead	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:08	JMW	EPA 6020A
Molybdenum	4.6	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:08	JMW	EPA 6020A
Selenium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/29/22 11:23	JMW	EPA 6020A
Lithium	< 20	ug/L		07/27/22 09:49	1	20	07/29/22 10:42	TJJ	EPA 6010B

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FG04606-03
Name: AW-08
Matrix: Ground Water - Grab

Sampled: 07/25/22 13:30
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	18	mg/L		07/28/22 19:14	5	5.0	07/28/22 19:14	CJP	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		07/28/22 18:55	1	1.0	07/28/22 18:55	CJP	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	23.37	Feet		07/25/22 13:30	1		07/25/22 13:30	FIELD	Field
Dissolved oxygen, Field	9.5	mg/L		07/25/22 13:30	1		07/25/22 13:30	FIELD	Field
Oxidation Reduction Potential	-112	mV		07/25/22 13:30	1	-500	07/25/22 13:30	FIELD	Field
pH, Field Measured	7.33	pH Units		07/25/22 13:30	1		07/25/22 13:30	FIELD	Field
Specific Conductance, Field Measured	3490	umhos/cm		07/25/22 13:30	1		07/25/22 13:30	FIELD	Field
Temperature, Field Measured	20.0	°C		07/25/22 13:30	1		07/25/22 13:30	FIELD	Field
Turbidity, Field Measured	1.15	NTU		07/25/22 13:30	1	0.00	07/25/22 13:30	FIELD	Field
General Chemistry - PIA									
Fluoride	0.273	mg/L		08/08/22 15:32	1	0.250	08/08/22 15:32	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	680	mg/L		07/27/22 11:03	1	26	07/27/22 12:54	CGL	SM 2540C
Total Metals - PIA									
Arsenic	7.3	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:26	JMW	EPA 6020A
Barium	160	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:26	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:26	JMW	EPA 6020A
Boron	100	ug/L		07/27/22 09:49	5	10	07/29/22 11:34	JMW	EPA 6020A
Calcium	140	mg/L		07/27/22 09:49	5	0.20	07/28/22 16:26	JMW	EPA 6020A
Chromium	< 4.0	ug/L		07/27/22 09:49	5	4.0	07/28/22 16:26	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		07/27/22 09:49	5	2.0	07/28/22 16:26	JMW	EPA 6020A
Lead	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:26	JMW	EPA 6020A
Molybdenum	1.9	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:26	JMW	EPA 6020A
Selenium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/29/22 11:34	JMW	EPA 6020A
Lithium	< 20	ug/L		07/27/22 09:49	1	20	07/29/22 10:48	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FG04606-04
Name: AW-09
Matrix: Ground Water - Grab

Sampled: 07/25/22 11:09
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	30	mg/L		07/28/22 20:26	5	5.0	07/28/22 20:26	CJP	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		07/28/22 19:32	1	1.0	07/28/22 19:32	CJP	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	26.43	Feet		07/25/22 11:09	1		07/25/22 11:09	FIELD	Field
Dissolved oxygen, Field	0.44	mg/L		07/25/22 11:09	1		07/25/22 11:09	FIELD	Field
Oxidation Reduction Potential	-146	mV		07/25/22 11:09	1	-500	07/25/22 11:09	FIELD	Field
pH, Field Measured	6.98	pH Units		07/25/22 11:09	1		07/25/22 11:09	FIELD	Field
Specific Conductance, Field Measured	1429	umhos/cm		07/25/22 11:09	1		07/25/22 11:09	FIELD	Field
Temperature, Field Measured	16.4	°C		07/25/22 11:09	1		07/25/22 11:09	FIELD	Field
Turbidity, Field Measured	1.60	NTU		07/25/22 11:09	1	0.00	07/25/22 11:09	FIELD	Field
General Chemistry - PIA									
Fluoride	< 0.250	mg/L		08/08/22 15:32	1	0.250	08/08/22 15:32	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	800	mg/L		07/27/22 11:03	1	26	07/27/22 12:54	CGL	SM 2540C
Total Metals - PIA									
Arsenic	17	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:30	JMW	EPA 6020A
Barium	470	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:30	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:30	JMW	EPA 6020A
Boron	250	ug/L		07/27/22 09:49	5	10	07/29/22 11:38	JMW	EPA 6020A
Calcium	130	mg/L		07/27/22 09:49	5	0.20	07/28/22 16:30	JMW	EPA 6020A
Chromium	< 4.0	ug/L		07/27/22 09:49	5	4.0	07/28/22 16:30	JMW	EPA 6020A
Cobalt	2.1	ug/L		07/27/22 09:49	5	2.0	07/28/22 16:30	JMW	EPA 6020A
Lead	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:30	JMW	EPA 6020A
Molybdenum	14	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:30	JMW	EPA 6020A
Selenium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/29/22 11:38	JMW	EPA 6020A
Lithium	< 20	ug/L		07/27/22 09:49	1	20	07/29/22 10:50	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FG04606-05
Name: AW-10
Matrix: Ground Water - Grab

Sampled: 07/25/22 15:11
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	100	mg/L		07/28/22 21:02	25	25	07/28/22 21:02	CJP	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		07/28/22 20:44	1	1.0	07/28/22 20:44	CJP	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	2.31	Feet		07/25/22 15:11	1		07/25/22 15:11	FIELD	Field
Dissolved oxygen, Field	2.0	mg/L		07/25/22 15:11	1		07/25/22 15:11	FIELD	Field
Oxidation Reduction Potential	-122	mV		07/25/22 15:11	1	-500	07/25/22 15:11	FIELD	Field
pH, Field Measured	7.08	pH Units		07/25/22 15:11	1		07/25/22 15:11	FIELD	Field
Specific Conductance, Field Measured	1624	umhos/cm		07/25/22 15:11	1		07/25/22 15:11	FIELD	Field
Temperature, Field Measured	19.4	°C		07/25/22 15:11	1		07/25/22 15:11	FIELD	Field
Turbidity, Field Measured	4.87	NTU		07/25/22 15:11	1	0.00	07/25/22 15:11	FIELD	Field
General Chemistry - PIA									
Fluoride	< 0.250	mg/L		08/08/22 15:38	1	0.250	08/08/22 15:38	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	1300	mg/L		07/27/22 11:03	1	26	07/27/22 12:54	CGL	SM 2540C
Total Metals - PIA									
Arsenic	9.9	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:33	JMW	EPA 6020A
Barium	1000	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:33	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:33	JMW	EPA 6020A
Boron	460	ug/L		07/27/22 09:49	5	10	07/29/22 11:41	JMW	EPA 6020A
Calcium	140	mg/L		07/27/22 09:49	5	0.20	07/28/22 16:33	JMW	EPA 6020A
Chromium	< 4.0	ug/L		07/27/22 09:49	5	4.0	07/28/22 16:33	JMW	EPA 6020A
Cobalt	3.3	ug/L		07/27/22 09:49	5	2.0	07/28/22 16:33	JMW	EPA 6020A
Lead	2.2	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:33	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:33	JMW	EPA 6020A
Selenium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/29/22 11:41	JMW	EPA 6020A
Lithium	33	ug/L		07/27/22 09:49	1	20	07/29/22 10:52	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FG04606-06
Name: AW-11
Matrix: Ground Water - Grab

Sampled: 07/25/22 16:35
Received: 07/26/22 08:00
PO #: 1167340

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	39	mg/L		07/28/22 21:38	5	5.0	07/28/22 21:38	CJP	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		07/28/22 21:20	1	1.0	07/28/22 21:20	CJP	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.22	Feet		07/25/22 16:35	1		07/25/22 16:35	FIELD	Field
Dissolved oxygen, Field	0.040	mg/L		07/25/22 16:35	1		07/25/22 16:35	FIELD	Field
Oxidation Reduction Potential	-140	mV		07/25/22 16:35	1	-500	07/25/22 16:35	FIELD	Field
pH, Field Measured	6.94	pH Units		07/25/22 16:35	1		07/25/22 16:35	FIELD	Field
Specific Conductance, Field Measured	1703	umhos/cm		07/25/22 16:35	1		07/25/22 16:35	FIELD	Field
Temperature, Field Measured	18.0	°C		07/25/22 16:35	1		07/25/22 16:35	FIELD	Field
Turbidity, Field Measured	2.80	NTU		07/25/22 16:35	1	0.00	07/25/22 16:35	FIELD	Field
General Chemistry - PIA									
Fluoride	< 0.250	mg/L		08/08/22 15:58	1	0.250	08/08/22 15:58	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	1000	mg/L		07/27/22 11:03	1	26	07/27/22 12:54	CGL	SM 2540C
Total Metals - PIA									
Arsenic	9.4	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:37	JMW	EPA 6020A
Barium	1000	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:37	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:37	JMW	EPA 6020A
Boron	230	ug/L		07/27/22 09:49	5	10	07/29/22 11:45	JMW	EPA 6020A
Calcium	160	mg/L		07/27/22 09:49	5	0.20	07/28/22 16:37	JMW	EPA 6020A
Chromium	< 4.0	ug/L		07/27/22 09:49	5	4.0	07/28/22 16:37	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		07/27/22 09:49	5	2.0	07/28/22 16:37	JMW	EPA 6020A
Lead	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:37	JMW	EPA 6020A
Molybdenum	1.1	ug/L		07/27/22 09:49	5	1.0	07/28/22 16:37	JMW	EPA 6020A
Selenium	< 1.0	ug/L		07/27/22 09:49	5	1.0	07/29/22 11:45	JMW	EPA 6020A
Lithium	< 20	ug/L		07/27/22 09:49	1	20	07/29/22 10:59	TJJ	EPA 6010B

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B239019 - SW 3015 - EPA 6020A									
Blank (B239019-BLK1)				Prepared: 07/27/22 Analyzed: 07/28/22					
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							
Molybdenum	< 1.0	ug/L							
Selenium	< 1.0	ug/L							
Lithium	< 20	ug/L							
LCS (B239019-BS1)				Prepared: 07/27/22 Analyzed: 07/28/22					
Arsenic	501	ug/L		555.6		90	80-120		
Barium	544	ug/L		555.6		98	80-120		
Beryllium	468	ug/L		555.6		84	80-120		
Boron	529	ug/L		555.6		95	80-120		
Calcium	5.41	mg/L		5.556		97	80-120		
Chromium	592	ug/L		555.6		107	80-120		
Cobalt	553	ug/L		555.6		100	80-120		
Lead	540	ug/L		555.6		97	80-120		
Molybdenum	550	ug/L		555.6		99	80-120		
Selenium	523	ug/L		555.6		94	80-120		
Lithium	522	ug/L		555.6		94	80-120		
Matrix Spike (B239019-MS1)	**Sample: FG04606-02**			Prepared: 07/27/22 Analyzed: 07/28/22					
Arsenic	513	ug/L		555.6	1.68	92	75-125		
Barium	688	ug/L		555.6	146	97	75-125		
Beryllium	471	ug/L		555.6	ND	85	75-125		
Boron	614	ug/L		555.6	113	90	75-125		
Calcium	109	mg/L	Q4	5.556	105	69	75-125		
Chromium	596	ug/L		555.6	ND	107	75-125		
Cobalt	545	ug/L		555.6	ND	98	75-125		
Lead	529	ug/L		555.6	ND	95	75-125		
Molybdenum	574	ug/L		555.6	4.64	102	75-125		
Selenium	500	ug/L		555.6	ND	90	75-125		
Lithium	506	ug/L		555.6	11.3	89	75-125		
Matrix Spike Dup (B239019-MSD1)	**Sample: FG04606-02**			Prepared: 07/27/22 Analyzed: 07/28/22					
Arsenic	521	ug/L		555.6	1.68	93	75-125	2	20
Barium	703	ug/L		555.6	146	100	75-125	2	20
Beryllium	480	ug/L		555.6	ND	86	75-125	2	20
Boron	621	ug/L		555.6	113	91	75-125	1	20
Calcium	110	mg/L	Q4	5.556	105	83	75-125	0.7	20
Chromium	604	ug/L		555.6	ND	109	75-125	1	20

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B239019 - SW 3015 - EPA 6020A									
Matrix Spike Dup (B239019-MSD1)	**Sample: FG04606-02**			Prepared: 07/27/22 Analyzed: 07/28/22					
Cobalt	549	ug/L		555.6	ND	99	75-125	0.8	20
Lead	538	ug/L		555.6	ND	97	75-125	2	20
Molybdenum	594	ug/L		555.6	4.64	106	75-125	3	20
Selenium	507	ug/L		555.6	ND	91	75-125	1	20
Lithium	508	ug/L		555.6	11.3	89	75-125	0.4	200
Batch B239033 - No Prep - SM 2540C									
Blank (B239033-BLK1)				Prepared & Analyzed: 07/27/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B239033-BS1)				Prepared & Analyzed: 07/27/22					
Solids - total dissolved solids (TDS)	947	mg/L		1000		95	84.9-109		
Batch B239319 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B239319-CCB1)				Prepared & Analyzed: 07/28/22					
Sulfate	0.00	mg/L							
Fluoride	0.00	mg/L							
Chloride	0.00	mg/L							
Calibration Check (B239319-CCV1)				Prepared & Analyzed: 07/28/22					
Fluoride	4.88	mg/L		5.000		98	90-110		
Chloride	4.74	mg/L		5.000		95	90-110		
Sulfate	4.86	mg/L		5.000		97	90-110		
Batch B240159 - No Prep - SM 4500F C 1997									
Calibration Blank (B240159-CCB1)				Prepared & Analyzed: 08/08/22					
Fluoride	0.0110	mg/L							
Calibration Blank (B240159-CCB2)				Prepared & Analyzed: 08/08/22					
Fluoride	0.0160	mg/L							
Calibration Check (B240159-CCV1)				Prepared & Analyzed: 08/08/22					
Fluoride	0.719	mg/L		0.7000		103	90-110		
Calibration Check (B240159-CCV2)				Prepared & Analyzed: 08/08/22					
Fluoride	0.667	mg/L		0.7000		95	90-110		
Matrix Spike (B240159-MS3)	**Sample: FG04606-06**			Prepared & Analyzed: 08/08/22					
Fluoride	1.16	mg/L		1.000	0.133	102	80-120		
Matrix Spike Dup (B240159-MSD3)	**Sample: FG04606-06**			Prepared & Analyzed: 08/08/22					
Fluoride	1.17	mg/L		1.000	0.133	104	80-120	2	20

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NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Memos

Radium Subcontracted - Report Attached

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050
TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615
TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)
Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)
Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807
USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050
Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Gail J Schindler

Certified by: Gail Schindler, Project Manager

EDWARDS PART 845 DTW FORM DATE: 7/25/22

Well	DTW	Well	DTW
AP05S	5.91	AP06	could not find in recess
AP05D	11.67	AP08	9.18
AP07S	25.51	AP09	8.62
AP07D	28.08	APW-01	6.34
APW-02	9.21	APW-05	8.21
APW-03	9.44	APW-06	27.63
APW-04	8.51	APW-09	26.43
AW-08	23.37	APW-10	2.31
AW-12	8.45	APW-11	6.22
AW-13	6.61		
AW-14	7.63		
AW-15	9.77		
AW-15C	7.16		
AW-15S	8.64		
AW-16	23.95		
AW-17	25.34		
AW-18	28.00		
AW-19	13.96		
AW-20	Wasp nest covering well cap		
AW-21	18.46		
AW-22	12.25		
EDW-P002	12.54		
XPW01A	12.10		
XPW02	21.94		
XPW03	15.71		

SITE **EDWARDS**

WELL **AP05S**

Date: 7/25/22 Start Time: ~~12:20~~ 15:55 AM Finish/Sample Time: 1657

Well Depth (Bottom) From MP: 40.22 ft Purge Rate: 100 mL/min

Depth to Water From MP: ~~8.99~~ ft AM 9.91 Well Water Volume: 20.75 L / Gal

Water Column Length: 31.31 ft Total Purge Volume: 1.3 Gal

Reading (Units)	Time	DTW	pH s.u.	Spec Con umhos/cm	Temp deg C	Turb NTU	DO mg/L	ORP mV
1	~~12:30~~	~~9.30~~	~~6.97~~	~~1,523 3~~	~~18.17~~	~~1.59~~	~~0.44~~	~~-33.6~~
2	12:31	9.33	6.95	1,530.1	17.86	1.56	0.40	-35.4
3	12:32	9.33	6.95	1,535.9	17.98	1.51	0.42	-36.6
4								
5								

AM Reads on back

AM 7/25/22

Sampled with: AT 600 846000

Sample Appearance:

Odor:	☑ None	☐ Slight	☐ Mod.	☐ Strong
Color	☐ None	☐ Slight	☑ Mod.	☐ Strong
Turb :	☐ None	☑ Slight	☐ Mod	☐ Strong

Weather:/Environment Partly Cloudy, grassy plains

Remarks: ~~none~~ AM Well covered in thorns and Ivy, could not close casing

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P,250mL, HNO3)
1	General (P, 500 ml)

Comments Initial reads were for the wrong well, correct ones on back

Sampler's Signature: ~~Aidan~~ AM ~~James~~ Quinn Moore

Time	DTW	PH	Spec Cond	Temp	Turb	DO	Orp
~~1020~~	ft	s.u.	umhos/cm	deg C°	NTU	mg/L	mV
~~1022~~ 1020	6.16	6.74	1200	21.2	998	1.53	-153
1622 ~~1624~~	6.16	6.73	1240	21.1	1000	1.51	-154
1624	6.16	6.73	1240	21.0	1000	1.50	-154

SD 4.67

AP05S
AP 7/25/22

SITE **EDWARDS**

WELL **AW-06**

Date: 7/25/22 Start Time: 11:15 Finish/Sample Time: 12:05

Well Depth (Bottom) From MP: _____ ft Purge Rate: 100 mL/min

Depth to Water From MP: 27.63 ft Well Water Volume: _____ L / Gal

Water Column Length: _____ ft Total Purge Volume: 1.3 L / Gal

	Reading	Time	DTW	pH	Spec Con	Temp	Turb	DO	ORP
	(Units)			s.u.	umhos/cm	deg C	NTU	mg/L	mV
11:27	1	~~11:27~~	29.90	7.14	1,014.9	16.41	1.55	0.43	-97.7
11:28	2	~~11:28~~	30.05	7.17	1,014.9	16.53	1.57	0.43	-94.0
11:29	3	~~11:29~~	30.18	7.17	1,009.6	16.27	1.49	0.37	-96.5
	4								

Sampled with: AT 600 846000

Sample Appearance: Odor: ☑ None ☐ Slight ☐ Mod. ☐ Strong

Color ☐ None ☑ Slight ☐ Mod. ☐ Strong

Turb : ☑ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment (Cloudy loose gravel sides)

Remarks: none

BOTTLE INFORMATION:

Unfiltered	
Qty	**Bottles**
1	Plastic 2.5 L
1	Metals (P,250mL, HNO3)
1	General (P, 500 ml)

Comments

Sampler's Signature: Andrew James

SITE **EDWARDS**

WELL **AW-08**

Date: 7/25/22 Start Time: 12:40 Finish/Sample Time: 13:30

Well Depth (Bottom) From MP: _____ ft Purge Rate: 100 mL/min

Depth to Water From MP: 23.37 ft Well Water Volume: _____ L / Gal

Water Column Length: _____ ft Total Purge Volume: 1.5 (L) / Gal

Reading	Time	DTW	pH	Spec Con	Temp	Turb	DO	ORP
(Units)			s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	12:55	26.76	7.52	0.960	21.87	3.38	8.09	-113.3
2	12:56	27.12	7.44	3,100	20.16	2.15	8.55	-112.5
3	12:57	27.41	7.33	3,490	19.96	1.15	9.50	-112.0
4								
5								

Sampled with: AT 600 846000

Sample Appearance: Odor: ☐ None ☑ Slight ☐ Mod. ☐ Strong

Color ☐ None ☑ Slight ☐ Mod. ☐ Strong

Turb : ☑ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment Mostly cloudy, grassy nearby river

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P,250mL, HNO3)
1	General (P, 500 ml)

Comments check valve issue, flow rate fluctuates between 100 mL and 200 mL

Sampler's Signature: Aidan Jones

SITE **EDWARDS**

WELL **AW-09**

Date: 7/25/22 Start Time: 10:15 Finish/Sample Time: 11:09

Well Depth (Bottom) From MP: _____ ft Purge Rate: 100 mL/min

Depth to Water From MP: 26.43 ft Well Water Volume: _____ L / Gal

Water Column Length: _____ ft Total Purge Volume: 1.5 (L) / Gal

Min purge: 1 L

Reading	Time	DTW	pH	Spec Con	Temp	Turb	DO	ORP
(Units)			s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	10:30	28.72	6.96	1,500.5	18.5	2.31	0.47	-158.6
2	10:32	29.04	6.97	1,398.6	17.02	1.84	0.42	-140.0
3	10:34	29.54	6.98	1,429.0	16.44	1.60	0.44	-145.9
4								
5								

Sampled with: AT 600 846000

Sample Appearance: Odor: ☑ None ☐ Slight ☐ Mod. ☐ Strong

Color ☐ None ☐ Slight ☑ Mod. ☐ Strong

Turb : ☐ None ☑ Slight ☐ Mod ☐ Strong

Weather:/Environment Cloudy, Lots of loose gravel

Remarks: none

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P,250mL, HNO3)
1	General (P, 500 ml)

TD: 33.96 ft

Comments

Sampler's Signature: Aidan James

SITE **EDWARDS**

WELL **AW-10**

Date: 7/25/22 Start Time: 14:35 Finish/Sample Time: 15:11

Well Depth (Bottom) From MP: _____ ft Purge Rate: 100 mL/min

Depth to Water From MP: 2.31 ft Well Water Volume: _____ L / Gal

Water Column Length: _____ ft Total Purge Volume: 1.5 (L) / Gal

Reading	Time	DTW	pH	Spec Con	Temp	Turb	DO	ORP
(Units)			s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	14:45	5.15	7.13	1,688.2	19.27	2.96	1.92	-124.7
2	14:46	5.28	7.01	1,547.8	19.54	4.00	2.85	-121.6
3	14:47	5.34	7.08	1,624.5	19.43	4.87	1.98	-122.1
4								
5								

Sampled with: AT 600

Sample Appearance: Odor: ☐ None ☐ Slight ☑ Mod. ☐ Strong

Color ☐ None ☐ Slight ☑ Mod. ☐ Strong

Turb : ☑ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment Cloudy, grassy nearby train tracks

Remarks: _____

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P,250mL, HNO3)
1	General (P, 500 ml)

Comments _____

Sampler's Signature: Aidan Gomes

SITE **EDWARDS**

WELL **AW-11**

Date: 7/25/22 Start Time: 15:42 Finish/Sample Time: 16:35

Well Depth (Bottom) From MP: 6.22 ft

Depth to Water From MP: _____ ft

Water Column Length: _____ ft

Purge Rate: 100 mL/min

Well Water Volume: _____ L / Gal

Total Purge Volume: 1.5 (L) / Gal

Reading (Units)	Time	DTW	pH s.u.	Spec Con umhos/cm	Temp deg C	Turb NTU	DO mg/L	ORP mV
1	15:58	6.22	6.98	1,692.7	18.33	3.21	0.09	-138.5
2	15:59	6.22	6.95	1,691.5	18.05	2.88	0.11	-139.0
3	16:00	6.22	6.94	1,702.6	18.01	2.80	0.04	-140.5
4								
5								

Sampled with: AT 600

Sample Appearance:

Odor:	☑ None	☐ Slight	☐ Mod.	☐ Strong
Color	☐ None	☐ Slight	☑ Mod.	☐ Strong
Turb :	☑ None	☐ Slight	☐ Mod	☐ Strong

Weather:/Environment: cloudy, dirt and gravel, little plant life

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P,250mL, HNO3)
1	General (P, 500 ml)

Comments

Sampler's Signature: Aidan James

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Aidan Jones	Location:	Edward's power plant
Weather:	72°F, Cloudy Wind: N	Environment:	open grassy plains

Multiparameter Water Meter	Make: AT	Model: 600	Serial Number:	846001	
Water Level Meter	Make: Heron	Model: Dipper-T2	Serial Number:	19ff22021ML	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.19	s.u.	±0.1 s.u.	F	Y	3.95	MSI	L344-09	12/14/2023
pH 7.00a	7.17	s.u.	±0.1 s.u.			7.00	MSI	L343-07	12/9/2023
pH 10.00a	10.18	s.u.	±0.1 s.u.			10.05	MSI	M082-04	3/25/2024
SC Zero (DI)	10.34	µS/cm	0<25 µS/cm	P	N/A	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2,019.0	µS/cm	±5%				Geotech	1GK328	Nov-22
ORP	233.7	mV	±15 mV				InSitu	1GL481	Sep-22
DO (Zero pt)	0.04	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	97.09	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	1.00	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

@ 23°C

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time: 10:23

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.02	s.u.	±0.15 s.u.	P	N/A	Geotech	1GF009	Jun-23
pH 7.00b	7.50	s.u.	±0.15 s.u.	P	Y calibrated 7.01 pH	Geotech	0GJ268	Oct-22
pH 10.00b	9.99	s.u.	±0.15 s.u.		calibrated 10.00 pH	Geotech	1GF458	Jun-23
SC 1000	1,039.4	µS/cm	±5%	P	N/A	Ricca	1111A87	Nov-22

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time: 17:05

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.59	s.u.	±0.1 s.u.	F	Y	4.00	MSI	L315-04	11/22/2023
pH 7.00a	6.27	s.u.	±0.1 s.u.	F	Y	6.99	MSI	L172-33	6/23/2023
pH 10.00a	9.93	s.u.	±0.1 s.u.	P	N/A	N/A	MSI	L354-22	1/5/2024
SC 1000	1089	µS/cm	±5%	F	Y	1000 µS/cm	Ricca	2108D48	Jul-23
DO (Zero pt)	0.08	mg/L	±0.1 mg/L	P	N/A	N/A	Macron	#000228049	8/26/2025
Turbidity (DI)	1.95	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	Aidan Jones	Date:	7/25/22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Kyle Lane, Aaron Pen[illegible]	Location:	~~Duck Creek~~ Edward Power
Weather:	78° to 89° sunny	Environment:	Dry grass, dirt

Multiparameter Water Meter	Make:	~~In-Situ~~ Horiba	Model:	~~Aqua Troll 600~~ U 5000	Serial Number:	~~604127~~ ~~762215~~ PW2GKY8B
Water Level Meter	Make:	Heron	Model:	Dipper T2	Serial Number:	19FF211192HB

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	s.u.	±0.1 s.u.	P	NO	NA	MSI	L344-09	12/14/2023
pH 7.00a	—	s.u.	±0.1 s.u.	—			MSI	L343-07	12/9/2023
pH 10.00a	—	s.u.	±0.1 s.u.	—			MSI	M082-04	3/25/2024
SC Zero (DI)	—	µS/cm	0<25 µS/cm	—			Pace Labs	N/A (DI)	N/A (DI)
SC ~~2000~~	4440	µS/cm	±5%	P			Geotech	1GK328	Nov-22
ORP	—	mV	±15 mV				InSitu	1GL481	Sep-22
DO (Zero pt)	8.08	mg/L	±0.1	P			Macron	#000228049	8/26/2025
DO (Saturated)	—	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) Time:

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b		s.u.	±0.15 s.u.			Geotech	1GF009	Jun-23
pH 7.00b		s.u.	±0.15 s.u.			Geotech	0GJ268	Oct-22
pH 10.00b		s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
SC 1000		µS/cm	±5%			Ricca	1111A87	Nov-22

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
pH 7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments: only used on one well

Signature:	[signature]	Date:	7/25/2022

ANALYTICAL REPORT

September 08, 2022

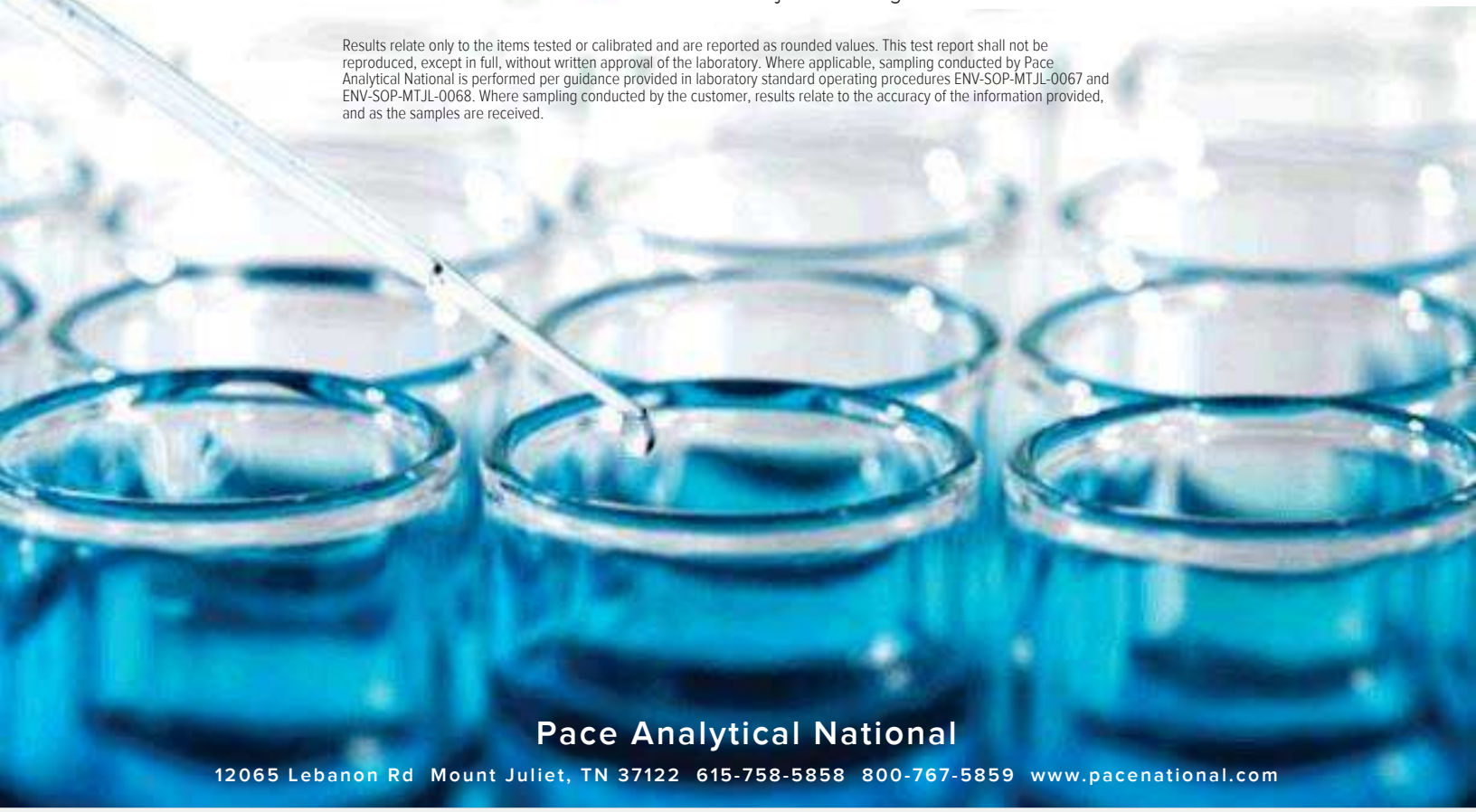
Pace IR - Peoria, IL

Sample Delivery Group:	L1520763
Samples Received:	08/02/2022
Project Number:	FG04606
Description:	Vistra-Edwards
Site:	001
Report To:	Gail Schindler 2231 W. Altorfer Drive Peoria, IL 61615

Entire Report Reviewed By:

Donna Eidson
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 www.pacenational.com

TABLE OF CONTENTS

AP05S L1520763-01 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				07/25/22 16:57	08/02/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1911534	1	08/24/22 12:10	09/06/22 10:24	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1910855	1	08/18/22 11:15	09/06/22 10:24	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1910855	1	08/18/22 11:15	08/19/22 23:03	RGT	Mt. Juliet, TN

AP-06 L1520763-02 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				07/25/22 12:05	08/02/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1916356	1	08/26/22 13:37	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1910855	1	08/18/22 11:15	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1910855	1	08/18/22 11:15	08/19/22 23:03	RGT	Mt. Juliet, TN

AP-08 L1520763-03 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				07/25/22 13:30	08/02/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1916356	1	08/26/22 13:37	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1910855	1	08/18/22 11:15	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1910855	1	08/18/22 11:15	08/19/22 23:03	RGT	Mt. Juliet, TN

AP-09 L1520763-04 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				07/25/22 11:09	08/02/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1916356	1	08/26/22 13:37	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1910855	1	08/18/22 11:15	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1910855	1	08/18/22 11:15	08/19/22 23:03	RGT	Mt. Juliet, TN

AW-10 L1520763-05 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				07/25/22 15:11	08/02/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1916356	1	08/26/22 13:37	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1910855	1	08/18/22 11:15	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1910855	1	08/18/22 11:15	08/19/22 23:03	RGT	Mt. Juliet, TN

AW-11 L1520763-06 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				07/25/22 16:35	08/02/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1916356	1	08/26/22 13:37	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1910855	1	08/18/22 11:15	09/01/22 14:20	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1910855	1	08/18/22 11:15	08/19/22 23:03	RGT	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.

Donna Eidson
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	3.67		0.385	0.591	09/06/2022 10:24	WG1911534
(T) Barium	*102*			*30.0-143*	*09/06/2022 10:24*	WG1911534
(T) Yttrium	*123*			*30.0-136*	*09/06/2022 10:24*	WG1911534

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	4.00		0.457	0.651	09/06/2022 10:24	WG1910855

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.336		0.247	0.272	08/19/2022 23:03	WG1910855
(T) Barium-133	*95.7*			*30.0-143*	*08/19/2022 23:03*	WG1910855

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.509		0.213	0.383	09/01/2022 14:20	WG1916356
(T) Barium	*86.3*			*30.0-143*	*09/01/2022 14:20*	WG1916356
(T) Yttrium	*110*			*30.0-136*	*09/01/2022 14:20*	WG1916356

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.679		0.308	0.498	09/01/2022 14:20	WG1910855

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.170	J	0.222	0.318	08/19/2022 23:03	WG1910855
(T) Barium-133	*90.3*			*30.0-143*	*08/19/2022 23:03*	WG1910855

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.919		0.258	0.454	09/01/2022 14:20	WG1916356
(T) Barium	*82.4*			*30.0-143*	*09/01/2022 14:20*	WG1916356
(T) Yttrium	*111*			*30.0-136*	*09/01/2022 14:20*	WG1916356

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.09		0.347	0.562	09/01/2022 14:20	WG1910855

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.172	J	0.232	0.331	08/19/2022 23:03	WG1910855
(T) Barium-133	*96.8*			*30.0-143*	*08/19/2022 23:03*	WG1910855

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.659		0.192	0.338	09/01/2022 14:20	WG1916356
(T) Barium	*97.6*			*30.0-143*	*09/01/2022 14:20*	WG1916356
(T) Yttrium	*109*			*30.0-136*	*09/01/2022 14:20*	WG1916356

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.803		0.258	0.413	09/01/2022 14:20	WG1910855

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.144	J	0.173	0.238	08/19/2022 23:03	WG1910855
(T) Barium-133	*92.8*			*30.0-143*	*08/19/2022 23:03*	WG1910855

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.02		0.204	0.348	09/01/2022 14:20	WG1916356
(T) Barium	*126*			*30.0-143*	*09/01/2022 14:20*	WG1916356
(T) Yttrium	*107*			*30.0-136*	*09/01/2022 14:20*	WG1916356

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.16		0.431	0.387	09/01/2022 14:20	WG1910855

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.14		0.380	0.170	08/19/2022 23:03	WG1910855
(T) Barium-133	*94.4*			*30.0-143*	*08/19/2022 23:03*	WG1910855

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.115	U	0.243	0.451	09/01/2022 14:20	WG1916356
(T) Barium	*112*			*30.0-143*	*09/01/2022 14:20*	WG1916356
(T) Yttrium	*109*			*30.0-136*	*09/01/2022 14:20*	WG1916356

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.756		0.399	0.507	09/01/2022 14:20	WG1910855

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.641		0.317	0.232	08/19/2022 23:03	WG1910855
(T) Barium-133	*90.6*			*30.0-143*	*08/19/2022 23:03*	WG1910855

Method Blank (MB)

(MB) R3835133-1 09/06/22 10:24

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-228	0.387		0.144	0.255
(T) Barium	*86.7*		*86.7*	
(T) Yttrium	*117*		*117*	

L1502485-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1502485-15 09/06/22 10:24 • (DUP) R3835133-5 09/06/22 10:24

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-228	0.669	0.200	0.349	1.02	0.265	0.349	1	41.9	1.07		20	3
(T) Barium	*90.5*			*94.8*	*94.8*							
(T) Yttrium	*114*			*114*	*114*							

Laboratory Control Sample (LCS)

(LCS) R3835133-2 09/06/22 10:24

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.24	84.8	80.0-120	
(T) Barium			*97.5*		
(T) Yttrium			*117*		

L1502485-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1502485-01 09/06/22 10:24 • (MS) R3835133-3 09/06/22 10:24 • (MSD) R3835133-4 09/06/22 10:24

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	16.7	1.58	16.1	16.1	86.6	87.1	1	70.0-130			0.497		20
(T) Barium		*75.9*			*95.9*	*98.2*							
(T) Yttrium		*109*			*113*	*113*							

QUALITY CONTROL SUMMARY

L1520763-02,03,04,05,06

Method Blank (MB)

(MB) R3833475-1 09/01/22 14:20

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / - pCi/l	MB MDA pCi/l
Radium-228	-0.0456	U	0.143	0.272
(T) Barium	*88.7*		*88.7*	
(T) Yttrium	*104*		*104*	

L1520189-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1520189-14 09/01/22 14:20 • (DUP) R3833475-5 09/01/22 14:20

Analyte	Original Result pCi/l	Original Uncertainty + / -	Original MDA pCi/l	DUP Result pCi/l	DUP Uncertainty + / -	DUP MDA pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.441	0.185	0.334	0.616	0.309	0.334	1	33.0	0.485		20	3
(T) Barium	*102*			*83.3*	*83.3*							
(T) Yttrium	*109*			*106*	*106*							

Laboratory Control Sample (LCS)

(LCS) R3833475-2 09/01/22 14:20

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.14	82.8	80.0-120	
(T) Barium			*98.1*		
(T) Yttrium			*106*		

L1520189-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1520189-12 09/01/22 14:20 • (MS) R3833475-3 09/01/22 14:20 • (MSD) R3833475-4 09/01/22 14:20

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	0.143	9.98	8.17	98.4	80.3	1	70.0-130			19.9		20
(T) Barium		*91.0*			*92.1*	*93.9*							
(T) Yttrium		*110*			*116*	*110*							

Method Blank (MB)

(MB) R3832038-1 08/19/22 23:03

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	-0.00703	U	0.0154	0.0547
(T) Barium-133	*89.5*		*89.5*	

L1525108-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1525108-04 08/19/22 23:03 • (DUP) R3832038-5 08/19/22 23:03

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-226	0.167	0.164	0.200	0.312	0.240	0.200	1	60.6	0.500		20	3
(T) Barium-133	*96.0*			*87.5*	*87.5*							

Laboratory Control Sample (LCS)

(LCS) R3832038-2 08/19/22 23:03

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	4.82	96.0	80.0-120	
(T) Barium-133			*106*		

L1523071-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1523071-01 08/19/22 23:03 • (MS) R3832038-3 08/19/22 23:03 • (MSD) R3832038-4 08/19/22 23:03

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-226	20.0	0.0529	20.4	17.9	102	89.3	1	75.0-125			13.2		20
(T) Barium-133		*94.5*			*101*	*89.2*							

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.
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.
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.
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.

A216

Internal Transfer Chain of Custody

Pace Analytical
www.pacelabs.com

State of Origin: IL
Cert. Needed: [X] YES [ ] NO

Workorder: FG04606 **Workorder Name:** VISTRA - EDWARDS

Owner Received Date: 7/26/2022

Results Requested By: 8/29/2022

Report To:	Subcontract To:
Gail Schindler Pace Analytical - IL/MO 2231 W. Altorfer Drive Peoria, IL 61615 800-752-6651	Pace Analytical Services, LLC 12065 Lebanon Rd Mt Juliet, TN (615)758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Requested Analysis: Radium 226/228	LAB USE ONLY
1	AP05S	GRAB	7/25/2022 16:57	FG04606-01	GW		X	-01
2	AP-06	GRAB	7/25/2022 12:05	FG04606-02	GW		X	-02
3	AP-08	GRAB	7/25/2022 13:30	FG04606-03	GW		X	-03
4	AP-09	GRAB	7/25/2022 11:09	FG04606-04	GW		X	-04
5	AW-10	GRAB	7/25/2022 15:11	FG04606-05	GW		X	-05
6	AW-11	GRAB	7/25/2022 16:35	FG04606-06	GW		X	-06
7								
8								
9								
10								

L1520763

Transfers	Released By	Date/Time	Reveived By	Date/Time	Comments
1	[signature]	7/30/22 1132	[signature]	8/2/22 945	Needs reported as 226, 228 and also combined 226/228 Include QC summary
2					
3					

Cooler Temperature on Receipt _____ °C	Custody Seal Y or N	Received on Ice Y or N	Sample Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

MMA2
230f0023.0

FMT-ALL-C-002rev.00 24March2009

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

FG04606

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Jason Stuckey
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	EDW_257_301	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	AP05S	WT	G	7/25/22	1657		3	X		X									
2	AW-06	WT	G	7/25/22	1205		3	X		X									
3	AW-08	WT	G	7/26/22	1330		3	X		X									
4	AW-09	WT	G	7/25/22	1109		3	X		X									
5	AW-10	WT	G	7/25/22	1511		3	X		X									
6	AW-11	WT	G	7/25/22	1635		3	X		X									
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
EDW-Q3-2022		7/25/22	1754		7/26/22	800	5.9	Y	N	Y

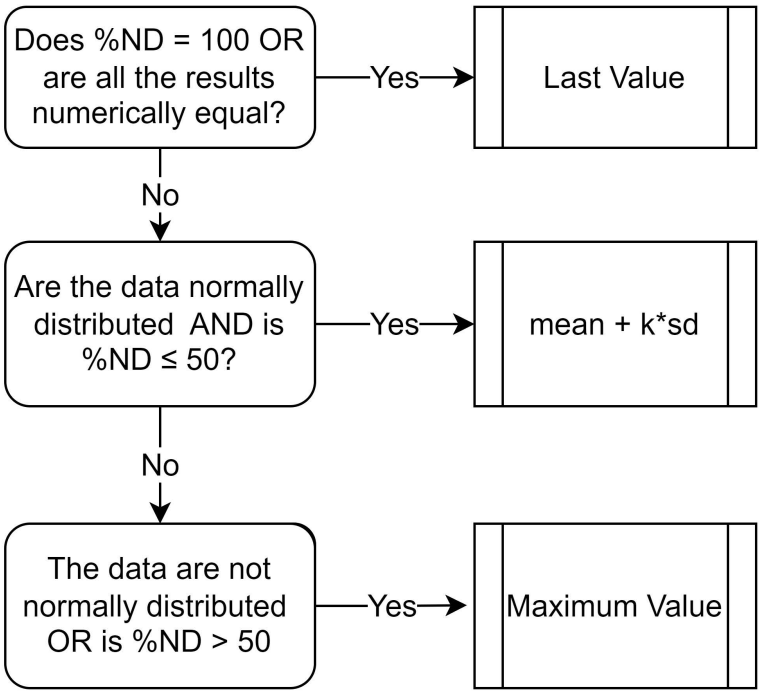
SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Pemberton

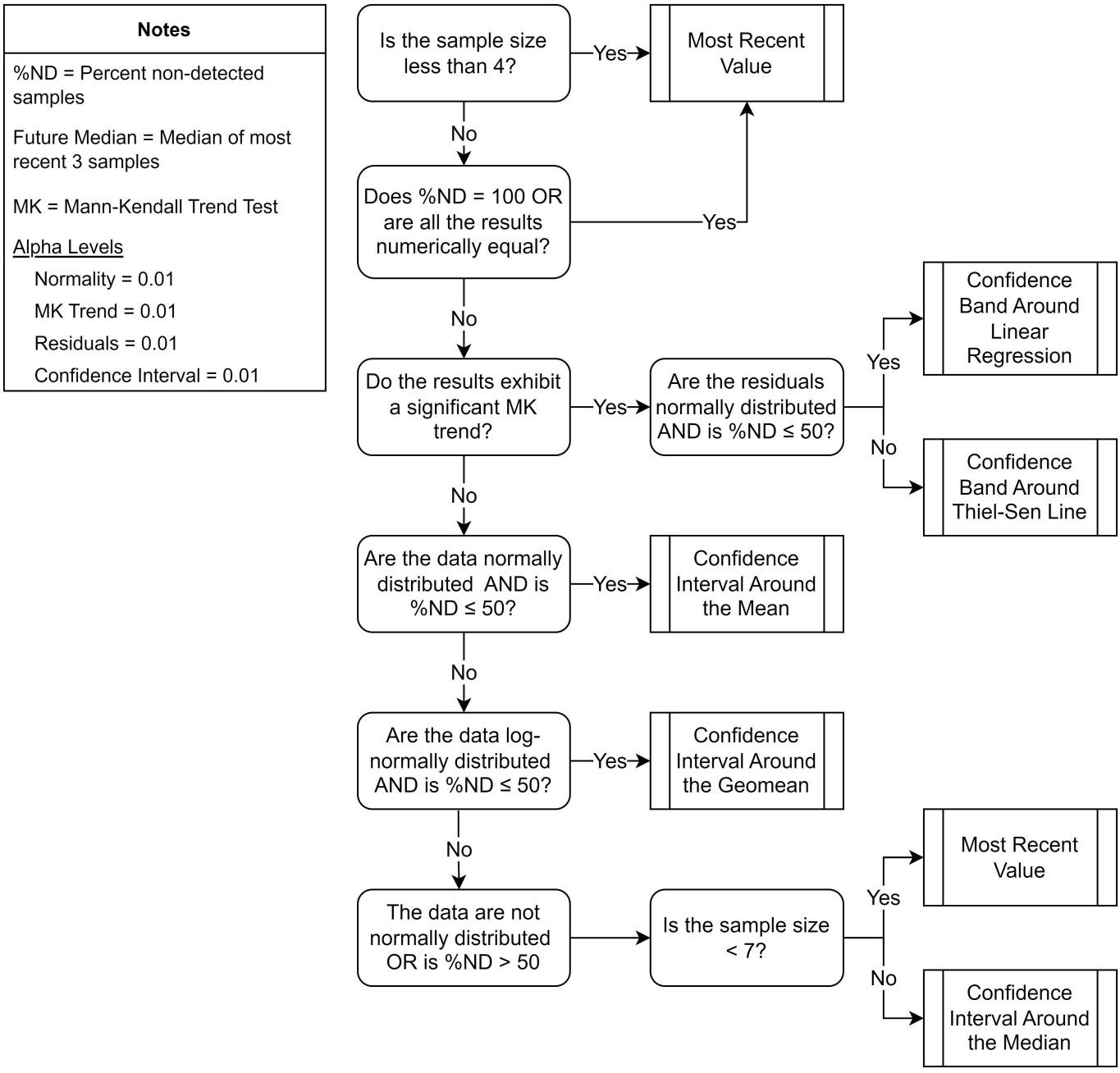
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 7/25/2022

APPENDIX B
STATISTICAL METHODOLGY FOR DETERMINATION OF BACKGROUND VALUES

Notes
%ND = Percent non-detected samples sd = standard deviation k = kappa for tolerance limit (95% confidence/95% coverage)



APPENDIX C
STATISTICAL METHODOLGY FOR DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS


Notes
%ND = Percent non-detected samples
Future Median = Median of most recent 3 samples
MK = Mann-Kendall Trend Test
Alpha Levels
Normality = 0.01
MK Trend = 0.01
Residuals = 0.01
Confidence Interval = 0.01
Is the sample size less than 4?
Yes
Most Recent Value
No
Does %ND = 100 OR are all the results numerically equal?
Yes
No
Do the results exhibit a significant MK trend?
Yes
Are the residuals normally distributed AND is %ND ≤ 50?
Yes
Confidence Band Around Linear Regression
No
Confidence Band Around Thiel-Sen Line
No
Are the data normally distributed AND is %ND ≤ 50?
Yes
Confidence Interval Around the Mean
No
Are the data log-normally distributed AND is %ND ≤ 50?
Yes
Confidence Interval Around the Geomean
No
The data are not normally distributed OR is %ND > 50
Is the sample size < 7?
Yes
Most Recent Value
No
Confidence Interval Around the Median