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January 31, 2023

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1940102203-004

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

ASH POND NO. 2

COFFEEN POWER PLANT

COFFEEN, ILLINOIS

CCR UNIT 102

**2022 ANNUAL GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT ASH POND NO. 2**

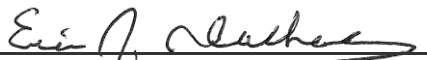
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ACRONYMS AND ABBREVIATIONS

§	Section
35 I.A.C.	Title 35 of the Illinois Administrative Code
40 C.F.R.	Title 40 of the Code of Federal Regulations
AP2	Ash Pond No. 2
ASD	Alternate Source Demonstration
CCR	coal combustion residuals
CMA	Corrective Measures Assessment
CPP	Coffeen Power Plant
GWPS	groundwater protection standard
IEPA	Illinois Environmental Protection Agency
NA	not applicable
NRT/OBG	Natural Resource Technology, an OBG Company
OBG	OBG, Part of Ramboll
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SAP	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 Ash Pond No. 2 (AP2) located at the Coffeen Power Plant (CPP) near Coffeen, Illinois.

Groundwater is being monitored at AP2 in accordance with the assessment monitoring program requirements specified in 40 C.F.R. § 257.95. Assessment Monitoring was initiated at AP2 on April 9, 2018.

No changes were made to the monitoring system in 2022 (no wells were installed or decommissioned). 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.

The following statistically significant levels (SSLs) of 40 C.F.R. § 257 Appendix IV parameters above groundwater protection standards (GWPSs) were determined in 2022:

- Cobalt at well G401
- Lithium at well G401

As required by 40 C.F.R. § 257.95(g)(3)(i), a Corrective Measures Assessment (CMA) (OBG, Part of Ramboll [OBG], 2019) following the requirements of 40 C.F.R. § 257.96 was initiated on May 8, 2019 and completed on July 8, 2019.

A public meeting was held on October 7, 2019 at the Coffeen Elementary School in Coffeen, Illinois to discuss the results of the CMA in accordance with 40 C.F.R. § 257.96(e).

The CMA was revised on November 30, 2020 (Ramboll Americas Engineering Solutions, Inc. [Ramboll], 2020) to address cobalt and lithium SSLs based on the 2020 assessment monitoring results, include additional information related to site geology/hydrogeology, and focus on application of the evaluation factors identified in 40 C.F.R. § 257.96(c) to potential groundwater corrective measures.

An Alternate Source Demonstration (ASD) was completed in 2022 for the cobalt SSL referenced above.

Remedy selection is in progress and the associated semiannual reports required by 40 C.F.R. § 257.97(a) are being completed.

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of Illinois Power Generating Company, to provide the information required by 40 C.F.R. § 257.90(e) for AP2 located at the CPP near Coffeen, 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 AP2 for calendar year 2022.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

Groundwater is being monitored at AP2 in accordance with the assessment monitoring program requirements specified in 40 C.F.R. § 257.95. Assessment monitoring was initiated on April 9, 2018. SSLs were determined for AP2 and alternate source evaluations were inconclusive for one or more SSLs. In accordance with 40 C.F.R. § 257.95(g)(5), a CMA following the requirements of 40 C.F.R. § 257.96 was initiated on April 8, 2019 and completed on July 8, 2019.

A public meeting was held on October 7, 2019 at the Coffeen Elementary School in Coffeen, Illinois to discuss the results of the CMA in accordance with 40 C.F.R. § 257.96(e).

The CMA was revised on November 30, 2020 to address the cobalt and lithium SSLs based on the 2020 assessment monitoring results, include additional information related to site geology/hydrogeology, and focus on application of the evaluation factors identified in 40 C.F.R. § 257.96(c) to potential groundwater corrective measures. Remedy selection is in progress and the associated semiannual reports required by 40 C.F.R. § 257.97(a) are being completed.

An ASD was completed in 2022 for the cobalt SSL at AP2.

AP2 remains in the assessment monitoring program in accordance with 40 C.F.R. § 257.96(b).

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) for both monitoring events in 2022 are presented in **Tables 1 through 3**. Laboratory reports for 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 statistically significant increases (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 is included in **Table 6**. A flow chart showing the statistical methodology for determination of SSLs is included as **Appendix C**.

An ASD was completed in 2022 for the cobalt SSL at AP2 (**Appendix D**). Alternate source evaluations for the lithium SSL were inconclusive. Consequently, and in accordance with 40 C.F.R. § 257.95(g)(5), a CMA following the requirements of 40 C.F.R. § 257.96 was initiated on April 8, 2019 and the required notification completed. The CMA (OBG, 2019) was completed on July 8, 2019 and posted to the publicly accessible website, as required by 40 C.F.R. § 257.107(h)(8). This CMA was revised on November 30, 2020 to address cobalt and lithium SSLs based on the 2020 assessment monitoring results, include additional information related to site geology/hydrogeology, and focus on application of the evaluation factors identified in 40 C.F.R. § 257.96(c) to potential groundwater corrective measures.

Remedy selection is in progress and the associated semiannual reports required by 40 C.F.R. § 257.97(a) were completed in January and July of 2022.

Table A. 2022 Assessment Monitoring Program Summary

Sampling Dates	Analytical Data Receipt Date	Parameters Collected	SSL(s)	SSL(s) Determination Date	ASD Completion Date	CMA Initiated
February 8-9, 2022	March 31, 2022	Appendix III Appendix IV	Cobalt (G401) Lithium (G401)	June 30, 2022	July 7, 2022 (Cobalt)	NA
August 24-25, 2022	November 17, 2022	Appendix III Appendix IV Detected ¹	Cobalt (G401)	January 6, 2023	NA	NA

Notes:

NA: not applicable

SSL: Statistically Significant Level

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 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 (NRT/OBG, 2017c)
 - 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 using background data to determine whether an SSI of Appendix III parameters detected at concentrations greater than background concentrations has occurred.
- Complete evaluation of analytical data from the compliance wells to determine whether an SSL of Appendix IV parameters above GWPSs has occurred.
- Remedy selection will continue; semiannual progress reports required by 40 C.F.R. § 257.97(a) will be completed and posted to the publicly accessible website as required by 40 C.F.R. § 257.107(h)(9).
- Revision 2 of the CMA will be completed in 2023 to include the ASD for cobalt and additional site geology/hydrogeology information gained during site investigation activities in 2021 related to permitting required by 35 I.A.C. § 845.

6. REFERENCES

Natural Resource Technology, an OBG Company (NRT/OBG), 2017a. Sampling and Analysis Plan, Coffeen Ash Pond No. 2, Coffeen Power Station, Coffeen, Illinois, Project No. 2285, Revision 0. October 17, 2017.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017b. Statistical Analysis Plan, Coffeen Power Station, Newton Power Station, Illinois Power Generating Company. October 17, 2017.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017c. Hydrogeologic Monitoring Plan, Coffeen Power Station, Coffeen, Illinois. October 17, 2017.

OBG, part of Ramboll (OBG), 2019. Corrective Measures Assessment, Coffeen Ash Pond No. 2, Coffeen Power Station 134 CIPS Lane, Coffeen, Illinois, Illinois Power Generating Company. July 8, 2019.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2020. Corrective Measures Assessment, Revision 1, Coffeen Ash Pond No. 2, Coffeen Power Station 134 CIPS Lane, Coffeen, Illinois, Illinois Power Generating Company. November 30, 2020.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021. Hydrogeological Site Characterization Report, Ash Pond No. 2, Coffeen Power Plant, Coffeen, 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, Ash Pond No. 2, Coffeen Power Plant, Coffeen, Illinois. December 28, 2022.

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, 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)
G045D	LCU	31.88 - 41.52	Water Level Only	39.06435	-89.39628	02/07/2022	8.80	615.01
G045D	LCU	31.88 - 41.52	Water Level Only	39.06435	-89.39628	08/23/2022	9.23	614.58
G046D	LCU	41.61 - 51.26	Water Level Only	39.06030	-89.39852	02/07/2022	14.53	610.71
G046D	LCU	41.61 - 51.26	Water Level Only	39.06030	-89.39852	08/23/2022	10.11	615.13
G101	UA	15.68 - 20.32	Water Level Only	39.07139	-89.40011	02/07/2022	4.90	622.70
G101	UA	15.68 - 20.32	Water Level Only	39.07139	-89.40011	08/23/2022	7.65	619.95
G102	UA	12.02 - 16.78	Water Level Only	39.07139	-89.39899	02/07/2022	5.30	623.74
G102	UA	12.02 - 16.78	Water Level Only	39.07139	-89.39899	08/23/2022	6.79	622.25
G103	UA	15.88 - 20.67	Water Level Only	39.07041	-89.39911	02/07/2022	10.05	623.75
G103	UA	15.88 - 20.67	Water Level Only	39.07041	-89.39911	08/23/2022	10.00	623.80
G105	UA	16.11 - 20.90	Water Level Only	39.06849	-89.39910	02/07/2022	8.95	623.13
G105	UA	16.11 - 20.90	Water Level Only	39.06849	-89.39910	08/23/2022	8.60	623.48
G106	UA	14.37 - 18.96	Water Level Only	39.06753	-89.39910	02/07/2022	9.24	621.91
G106	UA	14.37 - 18.96	Water Level Only	39.06753	-89.39910	08/23/2022	9.65	621.50
G107	UA	13.87 - 18.50	Water Level Only	39.06711	-89.39965	02/07/2022	8.82	621.40
G107	UA	13.87 - 18.50	Water Level Only	39.06711	-89.39965	08/23/2022	10.53	619.69
G108	UA	16.82 - 21.50	Water Level Only	39.06698	-89.40003	02/07/2022	10.83	619.39
G108	UA	16.82 - 21.50	Water Level Only	39.06698	-89.40003	08/23/2022	11.39	618.83
G109	UA	15.39 - 19.93	Water Level Only	39.06705	-89.40042	02/07/2022	11.10	618.66
G109	UA	15.39 - 19.93	Water Level Only	39.06705	-89.40042	08/23/2022	11.50	618.26
G110	UA	15.05 - 19.59	Water Level Only	39.06717	-89.40070	02/07/2022	12.02	617.63
G110	UA	15.05 - 19.59	Water Level Only	39.06717	-89.40070	08/23/2022	12.18	617.47
G111	UA	14.61 - 19.15	Water Level Only	39.06729	-89.40097	02/07/2022	13.23	616.67
G111	UA	14.61 - 19.15	Water Level Only	39.06729	-89.40097	08/23/2022	13.40	616.50
G119	UA	17.29 - 21.83	Water Level Only	39.06899	-89.40121	02/07/2022	14.34	617.21
G119	UA	17.29 - 21.83	Water Level Only	39.06899	-89.40121	08/23/2022	15.00	616.55
G120	UA	15.10 - 19.62	Water Level Only	39.06948	-89.40121	02/07/2022	13.97	617.90
G120	UA	15.10 - 19.62	Water Level Only	39.06948	-89.40121	08/23/2022	15.07	616.80
G121	UA	16.79 - 21.47	Water Level Only	39.06978	-89.40122	02/07/2022	13.82	619.01
G121	UA	16.79 - 21.47	Water Level Only	39.06978	-89.40122	08/23/2022	16.15	616.68

TABLE 1
GROUNDWATER ELEVATIONS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, 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)
G122	UA	16.51 - 21.05	Water Level Only	39.07010	-89.40122	02/07/2022	11.53	621.16
G122	UA	16.51 - 21.05	Water Level Only	39.07010	-89.40122	08/23/2022	15.66	617.03
G123	UA	20.94 - 25.46	Water Level Only	39.07040	-89.40122	02/07/2022	11.45	621.51
G123	UA	20.94 - 25.46	Water Level Only	39.07040	-89.40122	08/23/2022	13.46	619.50
G124	UA	15.98 - 20.51	Water Level Only	39.07072	-89.40122	02/07/2022	10.97	622.42
G124	UA	15.98 - 20.51	Water Level Only	39.07072	-89.40122	08/23/2022	14.22	619.17
G125	UA	17.03 - 21.56	Water Level Only	39.07100	-89.40122	02/07/2022	11.07	622.44
G125	UA	17.03 - 21.56	Water Level Only	39.07100	-89.40122	08/23/2022	14.37	619.14
G126	UA	12.89 - 17.43	Water Level Only	39.06730	-89.40127	02/07/2022	9.65	615.74
G126	UA	12.89 - 17.43	Water Level Only	39.06730	-89.40127	08/23/2022	9.69	615.70
G151	UA	15.34 - 19.84	Water Level Only	39.06720	-89.40159	02/07/2022	11.46	614.47
G151	UA	15.34 - 19.84	Water Level Only	39.06720	-89.40159	08/23/2022	11.31	614.62
G152	UA	13.59 - 18.09	Water Level Only	39.06628	-89.40129	02/07/2022	10.76	615.76
G152	UA	13.59 - 18.09	Water Level Only	39.06628	-89.40129	08/23/2022	11.45	615.07
G153	UA	15.90 - 20.34	Water Level Only	39.06586	-89.40257	02/07/2022	11.15	615.25
G153	UA	15.90 - 20.34	Water Level Only	39.06586	-89.40257	08/23/2022	11.77	614.63
G154	UA	14.26 - 18.76	Water Level Only	39.06709	-89.40357	02/07/2022	11.45	614.90
G154	UA	14.26 - 18.76	Water Level Only	39.06709	-89.40357	08/23/2022	13.00	613.35
G155	UA	15.09 - 19.58	Water Level Only	39.06749	-89.40266	02/07/2022	11.67	614.19
G155	UA	15.09 - 19.58	Water Level Only	39.06749	-89.40266	08/23/2022	12.56	613.30
G200	UA	12.19 - 16.98	Water Level Only	39.07514	-89.39501	02/07/2022	3.55	622.39
G200	UA	12.19 - 16.98	Water Level Only	39.07514	-89.39501	08/23/2022	6.21	619.73
G206	UA	17.51 - 21.92	Water Level Only	39.06740	-89.39855	02/07/2022	10.45	622.37
G206	UA	17.51 - 21.92	Water Level Only	39.06740	-89.39855	08/23/2022	11.21	621.61
G206D	DA	49.20 – 59.00	Water Level Only	39.06743	-89.39849	02/07/2022	35.92	598.22
G206D	DA	49.20 – 59.00	Water Level Only	39.06743	-89.39849	08/23/2022	31.28	602.86
G207	UA	18.24 - 22.77	Water Level Only	39.06757	-89.39795	02/07/2022	10.64	622.57
G207	UA	18.24 - 22.77	Water Level Only	39.06757	-89.39795	08/23/2022	11.33	621.88
G208	UA	17.53 - 22.06	Water Level Only	39.06774	-89.39740	02/07/2022	10.80	622.36
G208	UA	17.53 - 22.06	Water Level Only	39.06774	-89.39740	08/23/2022	11.04	622.12

TABLE 1
GROUNDWATER ELEVATIONS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, 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)
G209	UA	17.74 - 22.28	Water Level Only	39.06792	-89.39685	02/07/2022	10.56	622.35
G209	UA	17.74 - 22.28	Water Level Only	39.06792	-89.39685	08/23/2022	10.72	622.19
G210	UA	19.39 - 23.93	Water Level Only	39.06809	-89.39632	02/07/2022	11.05	621.94
G210	UA	19.39 - 23.93	Water Level Only	39.06809	-89.39632	08/23/2022	11.03	621.96
G211	UA	17.34 - 21.88	Water Level Only	39.06826	-89.39579	02/07/2022	10.76	621.88
G211	UA	17.34 - 21.88	Water Level Only	39.06826	-89.39579	08/23/2022	10.87	621.77
G212	UA	16.74 - 21.29	Water Level Only	39.06843	-89.39532	02/07/2022	11.10	621.79
G212	UA	16.74 - 21.29	Water Level Only	39.06843	-89.39532	08/23/2022	12.08	620.81
G213	UA	16.75 - 21.29	Water Level Only	39.06859	-89.39482	02/07/2022	11.23	621.58
G213	UA	16.75 - 21.29	Water Level Only	39.06859	-89.39482	08/23/2022	12.18	620.63
G214	UA	17.75 - 22.14	Water Level Only	39.06892	-89.39398	02/07/2022	14.52	618.33
G214	UA	17.75 - 22.14	Water Level Only	39.06892	-89.39398	08/23/2022	14.85	618.00
G215	UA	19.41 - 23.80	Water Level Only	39.06931	-89.39394	02/07/2022	14.45	618.61
G215	UA	19.41 - 23.80	Water Level Only	39.06931	-89.39394	08/23/2022	14.61	618.45
G216	UA	20.04 - 24.42	Water Level Only	39.06976	-89.39395	02/07/2022	13.68	619.08
G216	UA	20.04 - 24.42	Water Level Only	39.06976	-89.39395	08/23/2022	13.92	618.84
G217	UA	20.49 - 24.88	Water Level Only	39.07034	-89.39396	02/07/2022	14.76	618.34
G217	UA	20.49 - 24.88	Water Level Only	39.07034	-89.39396	08/23/2022	15.60	617.50
G218	UA	20.33 - 24.77	Water Level Only	39.07088	-89.39396	02/07/2022	13.78	619.33
G218	UA	20.33 - 24.77	Water Level Only	39.07088	-89.39396	08/23/2022	14.23	618.88
G270	UA	13.13 - 17.92	Background	39.06656	-89.39740	02/07/2022	2.59	623.27
G270	UA	13.13 - 17.92	Background	39.06656	-89.39740	08/23/2022	4.03	621.83
G271	UA	9.96 - 14.31	Water Level Only	39.06501	-89.39559	02/07/2022	9.06	616.51
G271	UA	9.96 - 14.31	Water Level Only	39.06501	-89.39559	08/23/2022	10.68	614.89
G272	UA	9.11 - 13.98	Water Level Only	39.06499	-89.39479	02/07/2022	8.92	614.89
G272	UA	9.11 - 13.98	Water Level Only	39.06499	-89.39479	08/23/2022	10.19	613.62
G273	UA	9.08 - 14.56	Water Level Only	39.06499	-89.39397	02/07/2022	10.32	612.70
G273	UA	9.08 - 14.56	Water Level Only	39.06499	-89.39397	08/23/2022	11.23	611.79
G274	UA	12.90 - 17.67	Water Level Only	39.06499	-89.39320	02/07/2022	13.90	610.14
G274	UA	12.90 - 17.67	Water Level Only	39.06499	-89.39320	08/23/2022	14.70	609.34
G275	UA	8.22 - 12.62	Water Level Only	39.06515	-89.39256	02/07/2022	13.16	605.10

TABLE 1
GROUNDWATER ELEVATIONS
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COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, 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)
G275	UA	8.22 - 12.62	Water Level Only	39.06515	-89.39256	08/23/2022	Dry	
G275D	DA	49.76 - 59.55	Water Level Only	39.06512	-89.39260	02/07/2022	39.85	580.46
G275D	DA	49.76 - 59.55	Water Level Only	39.06512	-89.39260	08/23/2022	39.49	580.82
G276	UA	22.41 - 27.22	Water Level Only	39.06553	-89.39262	02/07/2022	27.54	604.46
G276	UA	22.41 - 27.22	Water Level Only	39.06553	-89.39262	08/23/2022	27.34	604.66
G277	UA	14.29 - 18.77	Water Level Only	39.06593	-89.39257	02/07/2022	19.37	603.71
G277	UA	14.29 - 18.77	Water Level Only	39.06593	-89.39257	08/23/2022	19.62	603.46
G278	UA	18.93 - 23.7	Water Level Only	39.06674	-89.39316	02/07/2022	24.23	606.94
G278	UA	18.93 - 23.7	Water Level Only	39.06674	-89.39316	08/23/2022	22.66	608.51
G279	UA	22.40 - 26.79	Water Level Only	39.06716	-89.39300	02/07/2022	22.93	609.11
G279	UA	22.40 - 26.79	Water Level Only	39.06716	-89.39300	08/23/2022	23.00	609.04
G280	UA	12.79 - 17.63	Water Level Only	39.06722	-89.39499	02/07/2022	4.90	620.45
G280	UA	12.79 - 17.63	Water Level Only	39.06722	-89.39499	08/23/2022	4.10	621.25
G281	UA	15.51 - 20.16	Background	39.06541	-89.39932	02/07/2022	6.25	620.11
G281	UA	15.51 - 20.16	Background	39.06541	-89.39932	08/23/2022	6.85	619.51
G283	LCU	8.39 - 18.17	Water Level Only	39.06464	-89.39212	02/07/2022	4.79	605.96
G283	LCU	8.39 - 18.17	Water Level Only	39.06464	-89.39212	08/23/2022	8.06	602.69
G284	UA	8.08 - 12.85	Water Level Only	39.06549	-89.39063	02/07/2022	10.96	607.46
G284	UA	8.08 - 12.85	Water Level Only	39.06549	-89.39063	08/23/2022	12.00	606.42
G285	LCU	13.68 - 23.45	Water Level Only	39.06651	-89.39147	02/07/2022	7.21	606.31
G285	LCU	13.68 - 23.45	Water Level Only	39.06651	-89.39147	08/23/2022	6.44	607.08
G286	UA	3.37 - 8.16	Water Level Only	39.06728	-89.39188	02/07/2022	7.03	606.10
G286	UA	3.37 - 8.16	Water Level Only	39.06728	-89.39188	08/23/2022	Dry	
G287	UA	5.43 - 10.25	Water Level Only	39.06830	-89.39239	02/07/2022	9.10	608.35
G287	UA	5.43 - 10.25	Water Level Only	39.06830	-89.39239	08/23/2022	Dry	
G288	UA	7.59 - 12.26	Water Level Only	39.06783	-89.39008	02/07/2022	6.14	613.93
G288	UA	7.59 - 12.26	Water Level Only	39.06783	-89.39008	08/23/2022	7.68	612.39
G301	UA	11.31 - 15.96	Water Level Only	39.05951	-89.39541	02/07/2022	6.14	616.51
G301	UA	11.31 - 15.96	Water Level Only	39.05951	-89.39541	08/23/2022	7.07	615.58
G302	UA	13.21 - 17.86	Water Level Only	39.05954	-89.39319	02/07/2022	8.04	612.00
G302	UA	13.21 - 17.86	Water Level Only	39.05954	-89.39319	08/23/2022	9.15	610.89

TABLE 1
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COFFEEN POWER PLANT
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COFFEEN, 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)
G303	UA	10 - 20	Water Level Only	39.05714	-89.39172	02/07/2022	4.12	617.90
G303	UA	10 - 20	Water Level Only	39.05714	-89.39172	08/23/2022	6.06	615.96
G305	UA	13.44 - 18.27	Water Level Only	39.05656	-89.39680	02/07/2022	6.27	619.40
G305	UA	13.44 - 18.27	Water Level Only	39.05656	-89.39680	08/23/2022	7.61	618.06
G306	UA	13.07 - 17.68	Water Level Only	39.05649	-89.39356	02/07/2022	6.09	619.82
G306	UA	13.07 - 17.68	Water Level Only	39.05649	-89.39356	08/23/2022	8.12	617.79
G307	UA	12.96 - 17.80	Water Level Only	39.05721	-89.39554	02/07/2022	Above Top of Casing	
G307	UA	12.96 - 17.80	Water Level Only	39.05721	-89.39554	08/23/2022	Above Top of Casing	
G307D	LCU	48.98 - 58.75	Water Level Only	39.05721	-89.39552	02/07/2022	2.56	622.32
G307D	LCU	48.98 - 58.75	Water Level Only	39.05721	-89.39552	08/23/2022	9.79	615.09
G308	UA	10.10 - 14.89	Water Level Only	39.05738	-89.39713	02/07/2022	3.84	620.75
G308	UA	10.10 - 14.89	Water Level Only	39.05738	-89.39713	08/23/2022	7.24	617.35
G309	UA	12.97 - 17.75	Water Level Only	39.05851	-89.39724	02/07/2022	6.79	619.09
G309	UA	12.97 - 17.75	Water Level Only	39.05851	-89.39724	08/23/2022	7.24	618.64
G310	UA	10.24 - 15.03	Water Level Only	39.05953	-89.39691	02/07/2022	7.86	615.01
G310	UA	10.24 - 15.03	Water Level Only	39.05953	-89.39691	08/23/2022	8.89	613.98
G311	UA	9.27 - 14.04	Water Level Only	39.05951	-89.39436	02/07/2022	6.76	614.28
G311	UA	9.27 - 14.04	Water Level Only	39.05951	-89.39436	08/23/2022	7.85	613.19
G311D	LCU	50.16 - 60.10	Water Level Only	39.05951	-89.39431	02/07/2022	28.10	593.14
G311D	LCU	50.16 - 60.10	Water Level Only	39.05951	-89.39431	08/23/2022	23.78	597.46
G312	UA	9.79 - 14.58	Water Level Only	39.05956	-89.39198	02/07/2022	10.77	609.01
G312	UA	9.79 - 14.58	Water Level Only	39.05956	-89.39198	08/23/2022	11.28	608.50
G313	UA	6.30 - 11.11	Water Level Only	39.05877	-89.39112	02/07/2022	2.88	611.42
G313	UA	6.30 - 11.11	Water Level Only	39.05877	-89.39112	08/23/2022	2.38	611.92
G314	LCU	14.56 - 19.58	Water Level Only	39.05782	-89.39096	02/07/2022	6.03	607.85
G314	LCU	14.56 - 19.58	Water Level Only	39.05782	-89.39096	08/23/2022	3.30	610.58
G314D	DA	39.34 - 49.11	Water Level Only	39.05785	-89.39096	02/07/2022	23.24	590.46
G314D	DA	39.34 - 49.11	Water Level Only	39.05785	-89.39096	08/23/2022	18.00	595.70
G315	UA	9.69 - 14.48	Water Level Only	39.05716	-89.39367	02/07/2022	2.11	621.41
G315	UA	9.69 - 14.48	Water Level Only	39.05716	-89.39367	08/23/2022	3.31	620.21

TABLE 1
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COFFEEN, 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)
G316	LCU	10.02 - 14.82	Water Level Only	39.05785	-89.38970	02/07/2022	11.48	591.11
G316	LCU	10.02 - 14.82	Water Level Only	39.05785	-89.38970	08/23/2022	12.18	590.41
G317	UA	30.14 - 34.93	Water Level Only	39.05673	-89.39015	02/07/2022	32.04	609.89
G317	UA	30.14 - 34.93	Water Level Only	39.05673	-89.39015	08/23/2022	33.97	607.96
G401	UA	14.36 - 18.79	Compliance	39.06026	-89.39529	02/07/2022	21.14	604.43
G401	UA	14.36 - 18.79	Compliance	39.06026	-89.39529	08/23/2022	21.52	604.05
G402	UA	10 - 20	Compliance	39.06021	-89.39171	02/07/2022	9.24	604.13
G402	UA	10 - 20	Compliance	39.06021	-89.39171	08/23/2022	10.01	603.36
G403	UA	13.11 - 17.78	Compliance	39.06317	-89.39878	02/07/2022	6.39	620.08
G403	UA	13.11 - 17.78	Compliance	39.06317	-89.39878	08/23/2022	8.54	617.93
G404	UA	6.42 - 11.17	Compliance	39.06433	-89.39249	02/07/2022	3.58	612.09
G404	UA	6.42 - 11.17	Compliance	39.06433	-89.39249	08/23/2022	5.41	610.26
G405	UA	9.01 - 13.76	Compliance	39.06435	-89.39623	02/07/2022	6.35	617.28
G405	UA	9.01 - 13.76	Compliance	39.06435	-89.39623	08/23/2022	6.78	616.85
G406	UA	13.56 - 18.37	Water Level Only	39.06031	-89.39851	02/07/2022	11.81	613.55
G406	UA	13.56 - 18.37	Water Level Only	39.06031	-89.39851	08/23/2022	11.89	613.47
G407	UA	13.78 - 18.61	Water Level Only	39.06157	-89.40200	02/07/2022	5.93	615.39
G407	UA	13.78 - 18.61	Water Level Only	39.06157	-89.40200	08/23/2022	7.27	614.05
G410	UA	8.89 - 13.68	Water Level Only	39.06157	-89.40376	02/07/2022	8.12	611.67
G410	UA	8.89 - 13.68	Water Level Only	39.06157	-89.40376	08/23/2022	8.81	610.98
G411	UA	11.21 - 16.07	Water Level Only	39.06398	-89.40403	02/07/2022	6.48	616.77
G411	UA	11.21 - 16.07	Water Level Only	39.06398	-89.40403	08/23/2022	7.78	615.47
MW03D	DA	52.29 - 57.06	Water Level Only	39.07139	-89.39898	02/07/2022	30.55	598.46
MW03D	DA	52.29 - 57.06	Water Level Only	39.07139	-89.39898	08/23/2022	30.26	598.75
MW04S	UA	9.83 - 14.26	Water Level Only	39.07536	-89.39923	02/07/2022	6.33	619.56
MW04S	UA	9.83 - 14.26	Water Level Only	39.07536	-89.39923	08/23/2022	7.19	618.70
MW05S	UA	12.66 - 17.41	Water Level Only	39.07587	-89.40333	02/07/2022	7.29	618.66
MW05S	UA	12.66 - 17.41	Water Level Only	39.07587	-89.40333	08/23/2022	8.08	617.87
MW10S	UA	11.28 - 15.76	Water Level Only	39.07601	-89.39407	02/07/2022	5.54	618.91
MW10S	UA	11.28 - 15.76	Water Level Only	39.07601	-89.39407	08/23/2022	6.08	618.37
MW11S	UA	8.89 - 13.63	Water Level Only	39.07189	-89.39391	02/07/2022	3.28	621.99
MW11S	UA	8.89 - 13.63	Water Level Only	39.07189	-89.39391	08/23/2022	4.41	620.86
MW11D	LCU	28.31 - 33.04	Water Level Only	39.07189	-89.39389	02/07/2022	4.17	621.35
MW11D	LCU	28.31 - 33.04	Water Level	39.07189	-89.39389	08/23/2022	5.12	620.40

TABLE 1
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COFFEEN POWER PLANT
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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)
			Only					
MW12S	UA	10.61 - 15.18	Water Level Only	39.06851	-89.39420	02/07/2022	5.53	619.78
MW12D	DA	42.46 - 46.99	Water Level Only	39.06850	-89.39420	02/07/2022	12.52	612.69
MW12D	DA	42.46 - 46.99	Water Level Only	39.06850	-89.39420	08/23/2022	12.93	612.28
MW16S	UA	14.59 - 19.41	Water Level Only	39.07357	-89.39701	02/07/2022	5.73	623.74
MW16S	UA	14.59 - 19.41	Water Level Only	39.07357	-89.39701	08/23/2022	9.45	620.02
MW16D	DA	45.90 - 50.34	Water Level Only	39.07357	-89.39704	02/07/2022	12.46	616.92
MW16D	DA	45.90 - 50.34	Water Level Only	39.07357	-89.39704	08/23/2022	11.95	617.43
MW20S	UA	8.41 - 13.22	Water Level Only	39.06497	-89.39432	02/07/2022	8.86	614.04
MW20S	UA	8.41 - 13.22	Water Level Only	39.06497	-89.39432	08/23/2022	10.21	612.69
R104	UA	14.59 - 19.32	Water Level Only	39.06947	-89.39911	02/07/2022	8.06	624.78
R104	UA	14.59 - 19.32	Water Level Only	39.06947	-89.39911	08/23/2022	7.77	625.07
R201	UA	14.59 - 19.32	Water Level Only	39.07514	-89.39786	02/07/2022	3.49	622.85
R201	UA	14.59 - 19.32	Water Level Only	39.07514	-89.39786	08/23/2022	5.92	620.42
R205	UA	11.32 - 16.01	Water Level Only	39.06859	-89.39416	02/07/2022	4.10	620.42
R205	UA	11.32 - 16.01	Water Level Only	39.06859	-89.39416	08/23/2022	6.36	618.16
T127	UA	17.53 - 22.07	Water Level Only	39.06812	-89.40121	02/07/2022	14.00	616.96
T127	UA	17.53 - 22.07	Water Level Only	39.06812	-89.40121	08/23/2022	14.49	616.47
T128	UA	16.53 - 21.04	Water Level Only	39.06853	-89.40121	02/07/2022	13.70	617.23
T128	UA	16.53 - 21.04	Water Level Only	39.06853	-89.40121	08/23/2022	14.50	616.43
T202	UA	12.27 - 16.65	Water Level Only	39.07178	-89.39771	02/07/2022	5.68	622.95
T202	UA	12.27 - 16.65	Water Level Only	39.07178	-89.39771	08/23/2022	6.44	622.19
T408	LCU	20.66 - 25.49	Water Level Only	39.06435	-89.39631	02/07/2022	7.20	616.88
T408	LCU	20.66 - 25.49	Water Level Only	39.06435	-89.39631	08/23/2022	7.09	616.99
T409	LCU	21.79 - 26.59	Water Level Only	39.06030	-89.39854	02/07/2022	10.04	614.97
T409	LCU	21.79 - 26.59	Water Level Only	39.06030	-89.39854	08/23/2022	14.28	610.73
TA31	UA	15.09 - 19.57	Water Level Only	39.07137	-89.40137	02/07/2022	4.83	621.72
TA31	UA	15.09 - 19.57	Water Level Only	39.07137	-89.40137	08/23/2022	7.89	618.66
TA33	UA	12.23 - 16.89	Water Level Only	39.07156	-89.40351	02/07/2022	7.26	618.01
TA33	UA	12.23 - 16.89	Water Level Only	39.07156	-89.40351	08/23/2022	9.35	615.92
TA34	UA	10.92 - 15.41	Water Level Only	39.06963	-89.40276	02/07/2022	7.76	618.76

TABLE 1
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COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, 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)
TA34	UA	10.92 - 15.41	Water Level Only	39.06963	-89.40276	08/23/2022	9.51	617.01
TR32	UA	11.00 - 15.68	Water Level Only	39.07406	-89.40224	02/07/2022	6.47	615.21
TR32	UA	11.00 - 15.68	Water Level Only	39.07406	-89.40224	08/23/2022	5.91	615.77
XPW01	CCR	8.21 - 12.98	Water Level Only	39.05788	-89.39620	02/07/2022	4.32	630.25
XPW01	CCR	8.21 - 12.98	Water Level Only	39.05788	-89.39620	08/23/2022	7.90	626.67
XPW02	CCR	8.05 - 17.85	Water Level Only	39.05883	-89.39527	02/07/2022	9.31	630.38
XPW02	CCR	8.05 - 17.85	Water Level Only	39.05883	-89.39527	08/23/2022	8.88	630.81
XSG-01	CCR	NA	Water Level Only	39.05913	-89.39673	02/07/2022	5.25	630.27
XSG-01	CCR	NA	Water Level Only	39.05913	-89.39673	08/23/2022	3.07	632.45
SG-02	SW	NA	Water Level Only	39.05969	-89.39143	02/07/2022	7.35	598.52
SG-02	SW	NA	Water Level Only	39.05969	-89.39143	08/23/2022	7.45	598.42
SG-03	SW	NA	Water Level Only	39.05909	-89.39034	02/07/2022	5.01	589.93
SG-03	SW	NA	Water Level Only	39.05909	-89.39034	08/23/2022	9.81	585.13
SG-04	SW	NA	Water Level Only	39.06415	-89.39050	02/07/2022	6.52	593.00
SG-04	SW	NA	Water Level Only	39.06415	-89.39050	08/23/2022	6.16	593.36

Notes:
BGS = below ground surface
BMP = below measuring point
NAVD88 = North American Vertical Datum of 1988
NA = not available/not applicable
Monitored Unit Abbreviations:
CCR = coal combustion residuals
DA = deep aquifer
LCU = lower confining unit
SW = surface water
UA = uppermost aquifer

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 COFFEEN POWER PLANT
 102 - ASH POND NO. 2
 COFFEEN, 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)	--	--	--	0.0220	150	75.0	0.493	6.7/7.3	370	840
G270	Background	02/08/2022	A5	0.0120	53.0	8.70	0.378	7.2	53.0	410
G270	Background	08/24/2022	A5D	0.0071 U	56.0	9.70	0.325	7.3	53.0	500
G281	Background	02/08/2022	A5	0.01 U	130	78.0	0.295	7.0	270	910
G281	Background	08/25/2022	A5D	0.0140	150	69.0	0.302	6.8	310	980
G401	Compliance	02/09/2022	A5	3.50	450	6.40	0.25 U	5.8	2,000	2,800
G401	Compliance	09/20/2022	A5D	4.30	490	2.90 B	0.198	6.1	2,100	2,900
G402	Compliance	02/09/2022	A5	5.20	230	2.50 B	0.274	7.0	690	1,300
G402	Compliance	08/24/2022	A5D	5.70	230	3.00 B	0.338	6.8	600	1,400
G403	Compliance	02/08/2022	A5	0.01 U	76.0	5.00	0.365	7.0	53.0	400
G403	Compliance	08/24/2022	A5D	0.100	80.0	6.00	0.289	6.7	58.0	400
G404	Compliance	02/08/2022	A5	5.00	200	160	0.25 U	6.9	480	1,300
G404	Compliance	08/24/2022	A5D	13.0	290	120	0.145	6.5	810	1,800
G405	Compliance	02/08/2022	A5	10.0	260	6.20	0.364	7.0	1,000	1,400
G405	Compliance	08/24/2022	A5D	9.40	250	6.90	0.426	6.7	1,000	1,900

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.
 B = The analyte was found in sample and in associated method blank.

TABLE 3
ANALYTICAL RESULTS - APPENDIX IV PARAMETERS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, 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)
G270	Background	02/08/2022	0.003 U	0.001 U	0.0330	0.001 U	0.001 U	0.004 U	0.002 U	0.378	0.001 U	0.02 U	0.0002 U	0.001 U	0	0.001 U	0.001 U
G270	Background	08/24/2022	0.00043 U	0.00069 U	0.0360	0.00059 U	0.00074 U	0.0028 U	0.00048 U	0.325	0.00022 U	0.005 U	0.00014 U	0.00074 U	0.835 B	0.00074 U	0.00038 U
G281	Background	02/08/2022	0.003 U	0.001 U	0.0650	0.001 U	0.001 U	0.004 U	0.002 U	0.295	0.001 U	0.02 U	0.0002 U	0.001 U	0.214	0.001 U	0.001 U
G281	Background	08/24/2022	--	--	--	--	--	--	--	--	--	--	--	--	1.23	--	--
G281	Background	08/25/2022	0.00043 U	0.00096	0.0680	0.00059 U	0.00074 U	0.0028 U	0.00074	0.302	0.00043	0.005 U	0.00014 U	0.00074 U	--	0.00074 U	0.00038 U
G401	Compliance	02/09/2022	0.003 U	0.001 U	0.0110	0.001 U	0.001 U	0.004 U	0.150	0.25 U	0.001 U	0.0390	0.0002 U	0.001 U	1.21	0.001 U	0.001 U
G401	Compliance	09/20/2022	0.00043 U	0.00069 U	0.0110	0.00059 U	0.00074 U	0.0028 U	0.140	0.198	0.00022 U	0.0230	0.00014 U	0.00074 U	0.14	0.00074 U	0.00038 U
G402	Compliance	02/09/2022	0.003 U	0.00480	0.0270	0.001 U	0.001 U	0.004 U	0.00440	0.274	0.00210	0.0340	0.0002 U	0.00220	0.873	0.001 U	0.001 U
G402	Compliance	08/24/2022	0.00043 U	0.00650	0.0310	0.00059 U	0.00074 U	0.00560	0.00360	0.338	0.00340	0.0260	0.00014 U	0.00240	0.496	0.00074 U	0.00038 U
G403	Compliance	02/08/2022	0.003 U	0.00130	0.130	0.001 U	0.001 U	0.004 U	0.00230	0.365	0.00120	0.02 U	0.0002 U	0.001 U	1.25	0.001 U	0.001 U
G403	Compliance	08/24/2022	0.00043 U	0.00069 U	0.110	0.00059 U	0.00074 U	0.0028 U	0.00048 U	0.289	0.00022 U	0.005 U	0.00014 U	0.00074 U	0.506	0.00074 U	0.00038 U
G404	Compliance	02/08/2022	0.003 U	0.001 U	0.0280	0.001 U	0.001 U	0.004 U	0.002 U	0.25 U	0.001 U	0.02 U	0.0002 U	0.001 U	0.353	0.001 U	0.001 U
G404	Compliance	08/24/2022	0.00043 U	0.00069 U	0.0290	0.00059 U	0.00074 U	0.0028 U	0.00048 U	0.145	0.00022 U	0.0088	0.00014 U	0.00074 U	0.861	0.00074 U	0.00038 U
G405	Compliance	02/08/2022	0.003 U	0.001 U	0.0150	0.001 U	0.001 U	0.004 U	0.002 U	0.364	0.001 U	0.02 U	0.0002 U	0.001 U	0	0.001 U	0.001 U
G405	Compliance	08/24/2022	0.00043 U	0.00081	0.0160	0.00059 U	0.00074 U	0.0028 U	0.001	0.426	0.00022 U	0.005 U	0.00014 U	0.00074 U	1.06	0.00074 U	0.00038 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.
B = The analyte was found in sample and in associated method blank.

TABLE 4
STATISTICAL BACKGROUND VALUES
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, IL

Parameter	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)
Boron (mg/L)	11/20/2015 - 07/12/2017	16	75	Non-parametric UPL	0.0220
Calcium (mg/L)	11/20/2015 - 07/12/2017	16	0	Non-parametric UPL	150
Chloride (mg/L)	11/20/2015 - 07/12/2017	16	0	Non-parametric UPL	75.0
Fluoride (mg/L)	11/20/2015 - 07/12/2017	16	0	Parametric UPL	0.493
pH (field) (SU)	11/20/2015 - 07/12/2017	16	0	Parametric LPL/UPL	6.7/7.3
Sulfate (mg/L)	11/20/2015 - 07/12/2017	16	0	Non-parametric UPL	370
Total Dissolved Solids (mg/L)	11/20/2015 - 07/12/2017	16	0	Non-parametric UPL	840

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
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, 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)	11/20/2015 - 07/12/2017	16	100	All ND - Last Reporting Limit	0.003	0.006	0.006	MCL/HBL
Arsenic (mg/L)	11/20/2015 - 07/12/2017	16	75	Non-parametric UTL	0.00430	0.010	0.010	MCL/HBL
Barium (mg/L)	11/20/2015 - 07/12/2017	16	0	Parametric UTL (log-transformed)	0.182	2	2	MCL/HBL
Beryllium (mg/L)	11/20/2015 - 07/12/2017	16	100	All ND - Last Reporting Limit	0.001	0.004	0.004	MCL/HBL
Cadmium (mg/L)	11/20/2015 - 07/12/2017	16	100	All ND - Last Reporting Limit	0.001	0.005	0.005	MCL/HBL
Chromium (mg/L)	11/20/2015 - 07/12/2017	16	94	Non-parametric UTL	0.0110	0.1	0.1	MCL/HBL
Cobalt (mg/L)	11/20/2015 - 07/12/2017	16	94	Non-parametric UTL	0.00560	0.006	0.006	MCL/HBL
Fluoride (mg/L)	11/20/2015 - 07/12/2017	16	0	Parametric UTL	0.515	4.0	4.0	MCL/HBL
Lead (mg/L)	11/20/2015 - 07/12/2017	16	69	Non-parametric UTL	0.00630	0.015	0.015	MCL/HBL
Lithium (mg/L)	11/20/2015 - 07/12/2017	16	94	Non-parametric UTL	0.0130	0.04	0.04	MCL/HBL
Mercury (mg/L)	11/20/2015 - 07/12/2017	16	100	All ND - Last Reporting Limit	0.0002	0.002	0.002	MCL/HBL
Molybdenum (mg/L)	11/20/2015 - 07/12/2017	16	81	Non-parametric UTL	0.00150	0.1	0.1	MCL/HBL
Radium 226 + Radium 228 (pCi/L)	11/20/2015 - 07/12/2017	16	0	Parametric UTL	1.96	5	5	MCL/HBL
Selenium (mg/L)	11/20/2015 - 07/12/2017	16	88	Non-parametric UTL	0.00120	0.05	0.05	MCL/HBL
Thallium (mg/L)	11/20/2015 - 07/12/2017	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
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G401	Antimony, total	mg/L	A5	11/21/2015 - 02/09/2022	14	100	All ND - Last	0.003	0.006	MCL/HBL
G401	Antimony, total	mg/L	A5D	11/21/2015 - 09/20/2022	15	100	All ND - Last	0.00043	0.006	MCL/HBL
G401	Arsenic, total	mg/L	A5	11/21/2015 - 02/09/2022	17	35	CI around geomean	0.00204	0.010	MCL/HBL
G401	Arsenic, total	mg/L	A5D	11/21/2015 - 09/20/2022	18	39	CI around geomean	0.00187	0.010	MCL/HBL
G401	Barium, total	mg/L	A5	11/21/2015 - 02/09/2022	17	0	CI around geomean	0.0203	2	MCL/HBL
G401	Barium, total	mg/L	A5D	11/21/2015 - 09/20/2022	18	0	CI around geomean	0.0192	2	MCL/HBL
G401	Beryllium, total	mg/L	A5	11/21/2015 - 02/09/2022	16	69	CI around median	0.00100	0.004	MCL/HBL
G401	Beryllium, total	mg/L	A5D	11/21/2015 - 09/20/2022	17	71	CI around median	0.00100	0.004	MCL/HBL
G401	Cadmium, total	mg/L	A5	11/21/2015 - 02/09/2022	17	47	CI around median	0.00100	0.005	MCL/HBL
G401	Cadmium, total	mg/L	A5D	11/21/2015 - 09/20/2022	18	50	CI around median	0.00100	0.005	MCL/HBL
G401	Chromium, total	mg/L	A5	11/21/2015 - 02/09/2022	17	47	CI around median	0.00400	0.1	MCL/HBL
G401	Chromium, total	mg/L	A5D	11/21/2015 - 09/20/2022	18	50	CI around median	0.00400	0.1	MCL/HBL
G401	Cobalt, total	mg/L	A5	11/21/2015 - 02/09/2022	17	0	CI around mean	0.209	0.006	MCL/HBL
G401	Cobalt, total	mg/L	A5D	11/21/2015 - 09/20/2022	18	0	CI around mean	0.203	0.006	MCL/HBL
G401	Fluoride, total	mg/L	A5	11/21/2015 - 02/09/2022	18	94	CI around median	0.250	4.0	MCL/HBL
G401	Fluoride, total	mg/L	A5D	11/21/2015 - 09/20/2022	19	95	CI around median	0.250	4.0	MCL/HBL
G401	Lead, total	mg/L	A5	11/21/2015 - 02/09/2022	16	44	CI around median	0.00100	0.015	MCL/HBL
G401	Lead, total	mg/L	A5D	11/21/2015 - 09/20/2022	17	47	CI around median	0.00100	0.015	MCL/HBL
G401	Lithium, total	mg/L	A5	11/21/2015 - 02/09/2022	19	0	CI around geomean	0.0406	0.04	MCL/HBL
G401	Lithium, total	mg/L	A5D	11/21/2015 - 09/20/2022	20	0	CI around geomean	0.0388	0.04	MCL/HBL
G401	Mercury, total	mg/L	A5	11/21/2015 - 02/09/2022	16	69	CI around median	0.000200	0.002	MCL/HBL
G401	Mercury, total	mg/L	A5D	11/21/2015 - 09/20/2022	17	71	CI around median	0.000200	0.002	MCL/HBL
G401	Molybdenum, total	mg/L	A5	11/21/2015 - 02/09/2022	17	59	CI around median	0.00100	0.1	MCL/HBL
G401	Molybdenum, total	mg/L	A5D	11/21/2015 - 09/20/2022	18	61	CI around median	0.00100	0.1	MCL/HBL
G401	Radium 226 + Radium 228, total	pCi/L	A5	11/21/2015 - 02/09/2022	17	0	CI around geomean	0.705	5	MCL/HBL
G401	Radium 226 + Radium 228, total	pCi/L	A5D	11/21/2015 - 09/20/2022	18	0	CI around geomean	0.587	5	MCL/HBL
G401	Selenium, total	mg/L	A5	11/21/2015 - 02/09/2022	17	41	CI around geomean	0.00142	0.05	MCL/HBL
G401	Selenium, total	mg/L	A5D	11/21/2015 - 09/20/2022	18	44	CI around median	0.00100	0.05	MCL/HBL
G401	Thallium, total	mg/L	A5	11/21/2015 - 02/09/2022	14	100	All ND - Last	0.001	0.002	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G401	Thallium, total	mg/L	A5D	11/21/2015 - 09/20/2022	15	100	All ND - Last	0.00038	0.002	MCL/HBL
G402	Antimony, total	mg/L	A5	11/21/2015 - 02/09/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
G402	Antimony, total	mg/L	A5D	11/21/2015 - 08/24/2022	14	100	All ND - Last	0.00043	0.006	MCL/HBL
G402	Arsenic, total	mg/L	A5	11/21/2015 - 02/09/2022	15	0	CB around linear reg	-0.0110	0.010	MCL/HBL
G402	Arsenic, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	0	CB around linear reg	-0.00992	0.010	MCL/HBL
G402	Barium, total	mg/L	A5	11/21/2015 - 02/09/2022	15	0	CB around linear reg	-0.0174	2	MCL/HBL
G402	Barium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	0	CB around linear reg	-0.0153	2	MCL/HBL
G402	Beryllium, total	mg/L	A5	11/21/2015 - 02/09/2022	14	100	All ND - Last	0.001	0.004	MCL/HBL
G402	Beryllium, total	mg/L	A5D	11/21/2015 - 08/24/2022	15	100	All ND - Last	0.00059	0.004	MCL/HBL
G402	Cadmium, total	mg/L	A5	11/21/2015 - 02/09/2022	15	93	Most recent sample	0.001	0.005	MCL/HBL
G402	Cadmium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	94	Most recent sample	0.00074	0.005	MCL/HBL
G402	Chromium, total	mg/L	A5	11/21/2015 - 02/09/2022	15	47	CB around linear reg	-0.00947	0.1	MCL/HBL
G402	Chromium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	44	CB around linear reg	-0.00866	0.1	MCL/HBL
G402	Cobalt, total	mg/L	A5	11/21/2015 - 02/09/2022	15	20	CB around linear reg	-0.00547	0.006	MCL/HBL
G402	Cobalt, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	19	CB around linear reg	-0.00518	0.006	MCL/HBL
G402	Fluoride, total	mg/L	A5	11/21/2015 - 02/09/2022	16	12	CI around mean	0.260	4.0	MCL/HBL
G402	Fluoride, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	12	CI around median	0.295	4.0	MCL/HBL
G402	Lead, total	mg/L	A5	11/21/2015 - 02/09/2022	14	21	CB around linear reg	-0.00829	0.015	MCL/HBL
G402	Lead, total	mg/L	A5D	11/21/2015 - 08/24/2022	15	20	CB around linear reg	-0.00759	0.015	MCL/HBL
G402	Lithium, total	mg/L	A5	11/21/2015 - 02/09/2022	15	0	CB around linear reg	0.00895	0.04	MCL/HBL
G402	Lithium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	0	CB around linear reg	0.00945	0.04	MCL/HBL
G402	Mercury, total	mg/L	A5	11/21/2015 - 02/09/2022	14	100	All ND - Last	0.0002	0.002	MCL/HBL
G402	Mercury, total	mg/L	A5D	11/21/2015 - 08/24/2022	15	100	All ND - Last	0.00014	0.002	MCL/HBL
G402	Molybdenum, total	mg/L	A5	11/21/2015 - 02/09/2022	15	0	CB around linear reg	0.0000968	0.1	MCL/HBL
G402	Molybdenum, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	0	CB around linear reg	0.000228	0.1	MCL/HBL
G402	Radium 226 + Radium 228, total	pCi/L	A5	11/21/2015 - 02/09/2022	17	0	CI around geomean	0.710	5	MCL/HBL
G402	Radium 226 + Radium 228, total	pCi/L	A5D	11/21/2015 - 08/24/2022	18	0	CB around linear reg	-1.35	5	MCL/HBL
G402	Selenium, total	mg/L	A5	11/21/2015 - 02/09/2022	15	60	CB around T-S line	-0.00111	0.05	MCL/HBL
G402	Selenium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	62	CB around T-S line	-0.000962	0.05	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G402	Thallium, total	mg/L	A5	11/21/2015 - 02/09/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL
G402	Thallium, total	mg/L	A5D	11/21/2015 - 08/24/2022	14	100	All ND - Last	0.00038	0.002	MCL/HBL
G403	Antimony, total	mg/L	A5	11/23/2015 - 02/08/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
G403	Antimony, total	mg/L	A5D	11/23/2015 - 08/24/2022	14	100	All ND - Last	0.00043	0.006	MCL/HBL
G403	Arsenic, total	mg/L	A5	11/23/2015 - 02/08/2022	15	33	CI around geomean	0.00111	0.010	MCL/HBL
G403	Arsenic, total	mg/L	A5D	11/23/2015 - 08/24/2022	16	38	CI around median	0.00100	0.010	MCL/HBL
G403	Barium, total	mg/L	A5	11/23/2015 - 02/08/2022	15	0	CB around linear reg	0.0704	2	MCL/HBL
G403	Barium, total	mg/L	A5D	11/23/2015 - 08/24/2022	16	0	CB around linear reg	0.0691	2	MCL/HBL
G403	Beryllium, total	mg/L	A5	11/23/2015 - 02/08/2022	14	100	All ND - Last	0.001	0.004	MCL/HBL
G403	Beryllium, total	mg/L	A5D	11/23/2015 - 08/24/2022	15	100	All ND - Last	0.00059	0.004	MCL/HBL
G403	Cadmium, total	mg/L	A5	11/23/2015 - 02/08/2022	15	100	All ND - Last	0.001	0.005	MCL/HBL
G403	Cadmium, total	mg/L	A5D	11/23/2015 - 08/24/2022	16	100	All ND - Last	0.00074	0.005	MCL/HBL
G403	Chromium, total	mg/L	A5	11/23/2015 - 02/08/2022	15	87	CI around median	0.00400	0.1	MCL/HBL
G403	Chromium, total	mg/L	A5D	11/23/2015 - 08/24/2022	16	88	CI around median	0.00400	0.1	MCL/HBL
G403	Cobalt, total	mg/L	A5	11/23/2015 - 02/08/2022	15	47	CI around median	0.00200	0.006	MCL/HBL
G403	Cobalt, total	mg/L	A5D	11/23/2015 - 08/24/2022	16	50	CI around median	0.00200	0.006	MCL/HBL
G403	Fluoride, total	mg/L	A5	11/23/2015 - 02/08/2022	16	6	CI around median	0.382	4.0	MCL/HBL
G403	Fluoride, total	mg/L	A5D	11/23/2015 - 08/24/2022	17	6	CI around mean	0.351	4.0	MCL/HBL
G403	Lead, total	mg/L	A5	11/23/2015 - 02/08/2022	14	79	CI around median	0.00100	0.015	MCL/HBL
G403	Lead, total	mg/L	A5D	11/23/2015 - 08/24/2022	15	80	CI around median	0.00100	0.015	MCL/HBL
G403	Lithium, total	mg/L	A5	11/23/2015 - 02/08/2022	15	100	All ND - Last	0.02	0.04	MCL/HBL
G403	Lithium, total	mg/L	A5D	11/23/2015 - 08/24/2022	16	100	All ND - Last	0.005	0.04	MCL/HBL
G403	Mercury, total	mg/L	A5	11/23/2015 - 02/08/2022	14	100	All ND - Last	0.0002	0.002	MCL/HBL
G403	Mercury, total	mg/L	A5D	11/23/2015 - 08/24/2022	15	100	All ND - Last	0.00014	0.002	MCL/HBL
G403	Molybdenum, total	mg/L	A5	11/23/2015 - 02/08/2022	15	67	CI around median	0.00100	0.1	MCL/HBL
G403	Molybdenum, total	mg/L	A5D	11/23/2015 - 08/24/2022	16	69	CI around median	0.00100	0.1	MCL/HBL
G403	Radium 226 + Radium 228, total	pCi/L	A5	11/23/2015 - 02/08/2022	17	0	CI around mean	0.507	5	MCL/HBL
G403	Radium 226 + Radium 228, total	pCi/L	A5D	11/23/2015 - 08/24/2022	18	0	CI around mean	0.561	5	MCL/HBL
G403	Selenium, total	mg/L	A5	11/23/2015 - 02/08/2022	15	93	CI around median	0.00100	0.05	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G403	Selenium, total	mg/L	A5D	11/23/2015 - 08/24/2022	16	94	CI around median	0.00100	0.05	MCL/HBL
G403	Thallium, total	mg/L	A5	11/23/2015 - 02/08/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL
G403	Thallium, total	mg/L	A5D	11/23/2015 - 08/24/2022	14	100	All ND - Last	0.00038	0.002	MCL/HBL
G404	Antimony, total	mg/L	A5	11/21/2015 - 02/08/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
G404	Antimony, total	mg/L	A5D	11/21/2015 - 08/24/2022	14	100	All ND - Last	0.00043	0.006	MCL/HBL
G404	Arsenic, total	mg/L	A5	11/21/2015 - 02/08/2022	15	87	CI around median	0.00100	0.010	MCL/HBL
G404	Arsenic, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	88	CI around median	0.00100	0.010	MCL/HBL
G404	Barium, total	mg/L	A5	11/21/2015 - 02/08/2022	15	0	CI around mean	0.0373	2	MCL/HBL
G404	Barium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	0	CI around mean	0.0364	2	MCL/HBL
G404	Beryllium, total	mg/L	A5	11/21/2015 - 02/08/2022	14	100	All ND - Last	0.001	0.004	MCL/HBL
G404	Beryllium, total	mg/L	A5D	11/21/2015 - 08/24/2022	15	100	All ND - Last	0.00059	0.004	MCL/HBL
G404	Cadmium, total	mg/L	A5	11/21/2015 - 02/08/2022	15	100	All ND - Last	0.001	0.005	MCL/HBL
G404	Cadmium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	100	All ND - Last	0.00074	0.005	MCL/HBL
G404	Chromium, total	mg/L	A5	11/21/2015 - 02/08/2022	15	100	All ND - Last	0.004	0.1	MCL/HBL
G404	Chromium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	100	All ND - Last	0.0028	0.1	MCL/HBL
G404	Cobalt, total	mg/L	A5	11/21/2015 - 02/08/2022	15	100	All ND - Last	0.002	0.006	MCL/HBL
G404	Cobalt, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	100	All ND - Last	0.00048	0.006	MCL/HBL
G404	Fluoride, total	mg/L	A5	11/21/2015 - 02/08/2022	16	81	CI around median	0.250	4.0	MCL/HBL
G404	Fluoride, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	82	CI around median	0.250	4.0	MCL/HBL
G404	Lead, total	mg/L	A5	11/21/2015 - 02/08/2022	14	100	All ND - Last	0.001	0.015	MCL/HBL
G404	Lead, total	mg/L	A5D	11/21/2015 - 08/24/2022	15	100	All ND - Last	0.00022	0.015	MCL/HBL
G404	Lithium, total	mg/L	A5	11/21/2015 - 02/08/2022	15	93	CB around linear reg	0.0172	0.04	MCL/HBL
G404	Lithium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	94	CB around T-S line	0.00970	0.04	MCL/HBL
G404	Mercury, total	mg/L	A5	11/21/2015 - 02/08/2022	14	100	All ND - Last	0.0002	0.002	MCL/HBL
G404	Mercury, total	mg/L	A5D	11/21/2015 - 08/24/2022	15	100	All ND - Last	0.00014	0.002	MCL/HBL
G404	Molybdenum, total	mg/L	A5	11/21/2015 - 02/08/2022	15	100	All ND - Last	0.001	0.1	MCL/HBL
G404	Molybdenum, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	100	All ND - Last	0.00074	0.1	MCL/HBL
G404	Radium 226 + Radium 228, total	pCi/L	A5	11/21/2015 - 02/08/2022	17	0	CI around mean	0.567	5	MCL/HBL
G404	Radium 226 + Radium 228, total	pCi/L	A5D	11/21/2015 - 08/24/2022	18	0	CI around mean	0.630	5	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, IL

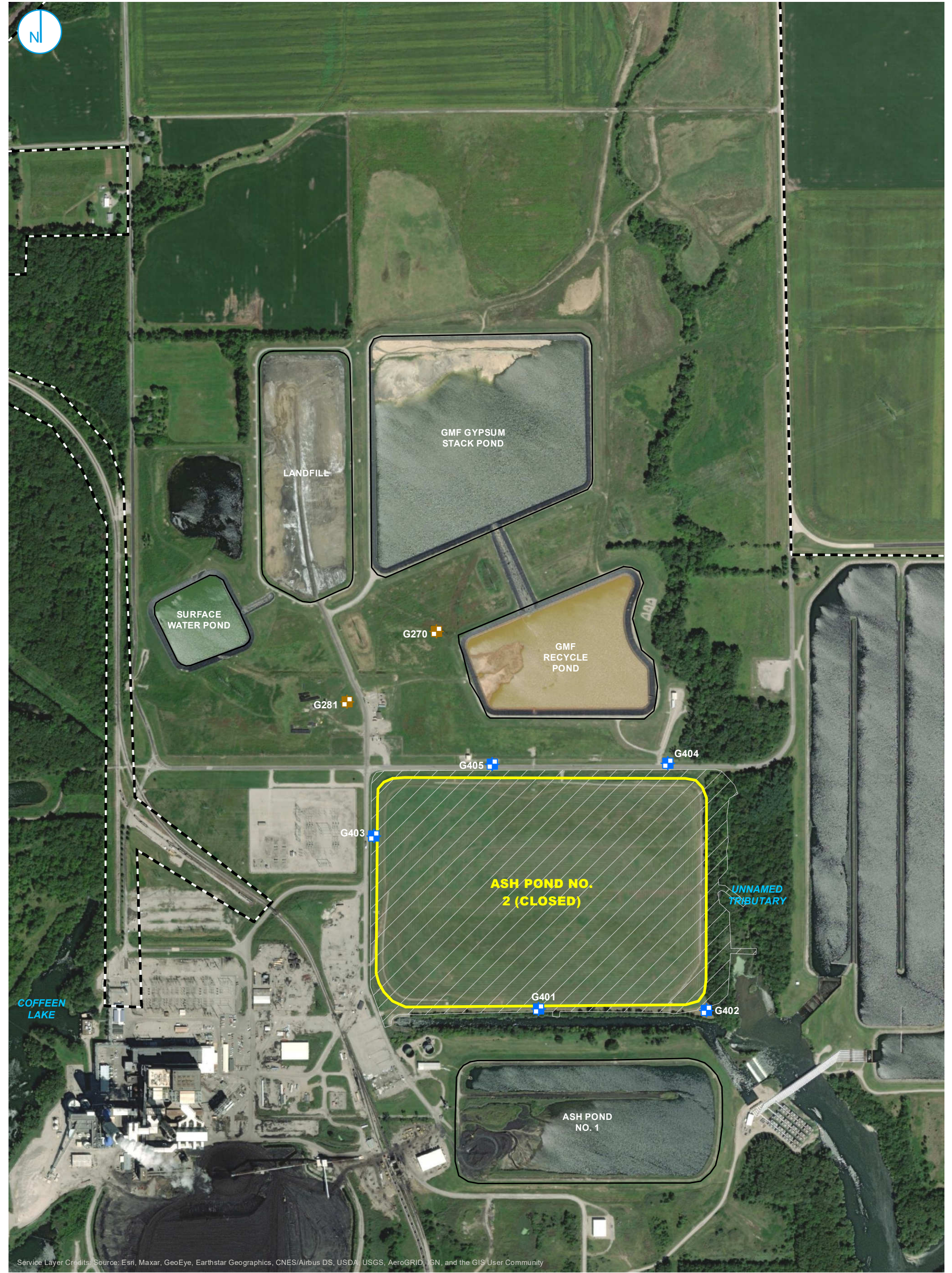
Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G404	Selenium, total	mg/L	A5	11/21/2015 - 02/08/2022	15	100	All ND - Last	0.001	0.05	MCL/HBL
G404	Selenium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	100	All ND - Last	0.00074	0.05	MCL/HBL
G404	Thallium, total	mg/L	A5	11/21/2015 - 02/08/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL
G404	Thallium, total	mg/L	A5D	11/21/2015 - 08/24/2022	14	100	All ND - Last	0.00038	0.002	MCL/HBL
G405	Antimony, total	mg/L	A5	11/21/2015 - 02/08/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
G405	Antimony, total	mg/L	A5D	11/21/2015 - 08/24/2022	14	100	All ND - Last	0.00043	0.006	MCL/HBL
G405	Arsenic, total	mg/L	A5	11/21/2015 - 02/08/2022	16	31	CB around T-S line	-0.00765	0.010	MCL/HBL
G405	Arsenic, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	35	CB around T-S line	-0.00812	0.010	MCL/HBL
G405	Barium, total	mg/L	A5	11/21/2015 - 02/08/2022	16	0	CI around mean	0.0196	2	MCL/HBL
G405	Barium, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	0	CI around mean	0.0192	2	MCL/HBL
G405	Beryllium, total	mg/L	A5	11/21/2015 - 02/08/2022	15	100	All ND - Last	0.001	0.004	MCL/HBL
G405	Beryllium, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	100	All ND - Last	0.00059	0.004	MCL/HBL
G405	Cadmium, total	mg/L	A5	11/21/2015 - 02/08/2022	16	94	CI around median	0.00100	0.005	MCL/HBL
G405	Cadmium, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	94	CI around median	0.00100	0.005	MCL/HBL
G405	Chromium, total	mg/L	A5	11/21/2015 - 02/08/2022	16	88	CI around median	0.00400	0.1	MCL/HBL
G405	Chromium, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	88	CI around median	0.00400	0.1	MCL/HBL
G405	Cobalt, total	mg/L	A5	11/21/2015 - 02/08/2022	16	69	CI around median	0.00200	0.006	MCL/HBL
G405	Cobalt, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	71	CI around median	0.00200	0.006	MCL/HBL
G405	Fluoride, total	mg/L	A5	11/21/2015 - 02/08/2022	17	6	CI around mean	0.412	4.0	MCL/HBL
G405	Fluoride, total	mg/L	A5D	11/21/2015 - 08/24/2022	18	6	CI around mean	0.413	4.0	MCL/HBL
G405	Lead, total	mg/L	A5	11/21/2015 - 02/08/2022	15	33	CI around geomean	0.00113	0.015	MCL/HBL
G405	Lead, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	38	CB around linear reg	-0.00228	0.015	MCL/HBL
G405	Lithium, total	mg/L	A5	11/21/2015 - 02/08/2022	16	100	All ND - Last	0.02	0.04	MCL/HBL
G405	Lithium, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	100	All ND - Last	0.005	0.04	MCL/HBL
G405	Mercury, total	mg/L	A5	11/21/2015 - 02/08/2022	15	100	All ND - Last	0.0002	0.002	MCL/HBL
G405	Mercury, total	mg/L	A5D	11/21/2015 - 08/24/2022	16	100	All ND - Last	0.00014	0.002	MCL/HBL
G405	Molybdenum, total	mg/L	A5	11/21/2015 - 02/08/2022	16	25	CI around median	0.00100	0.1	MCL/HBL
G405	Molybdenum, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	29	CI around median	0.00100	0.1	MCL/HBL
G405	Radium 226 + Radium 228, total	pCi/L	A5	11/21/2015 - 02/08/2022	17	0	CI around median	0.541	5	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
102 - ASH POND NO. 2
COFFEEN, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G405	Radium 226 + Radium 228, total	pCi/L	A5D	11/21/2015 - 08/24/2022	18	0	CI around median	0.789	5	MCL/HBL
G405	Selenium, total	mg/L	A5	11/21/2015 - 02/08/2022	16	94	CI around median	0.00100	0.05	MCL/HBL
G405	Selenium, total	mg/L	A5D	11/21/2015 - 08/24/2022	17	94	CI around median	0.00100	0.05	MCL/HBL
G405	Thallium, total	mg/L	A5	11/21/2015 - 02/08/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL
G405	Thallium, total	mg/L	A5D	11/21/2015 - 08/24/2022	14	100	All ND - Last	0.00038	0.002	MCL/HBL

Notes:
Exceedance of GWPS
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
Most recent sample = Result for the most recently collected sample used due to insufficient data
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



- BACKGROUND WELL
 - COMPLIANCE WELL
 - 40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
 - SITE FEATURE
 - LIMITS OF FINAL COVER
 - PROPERTY BOUNDARY
- 0200400

Feet

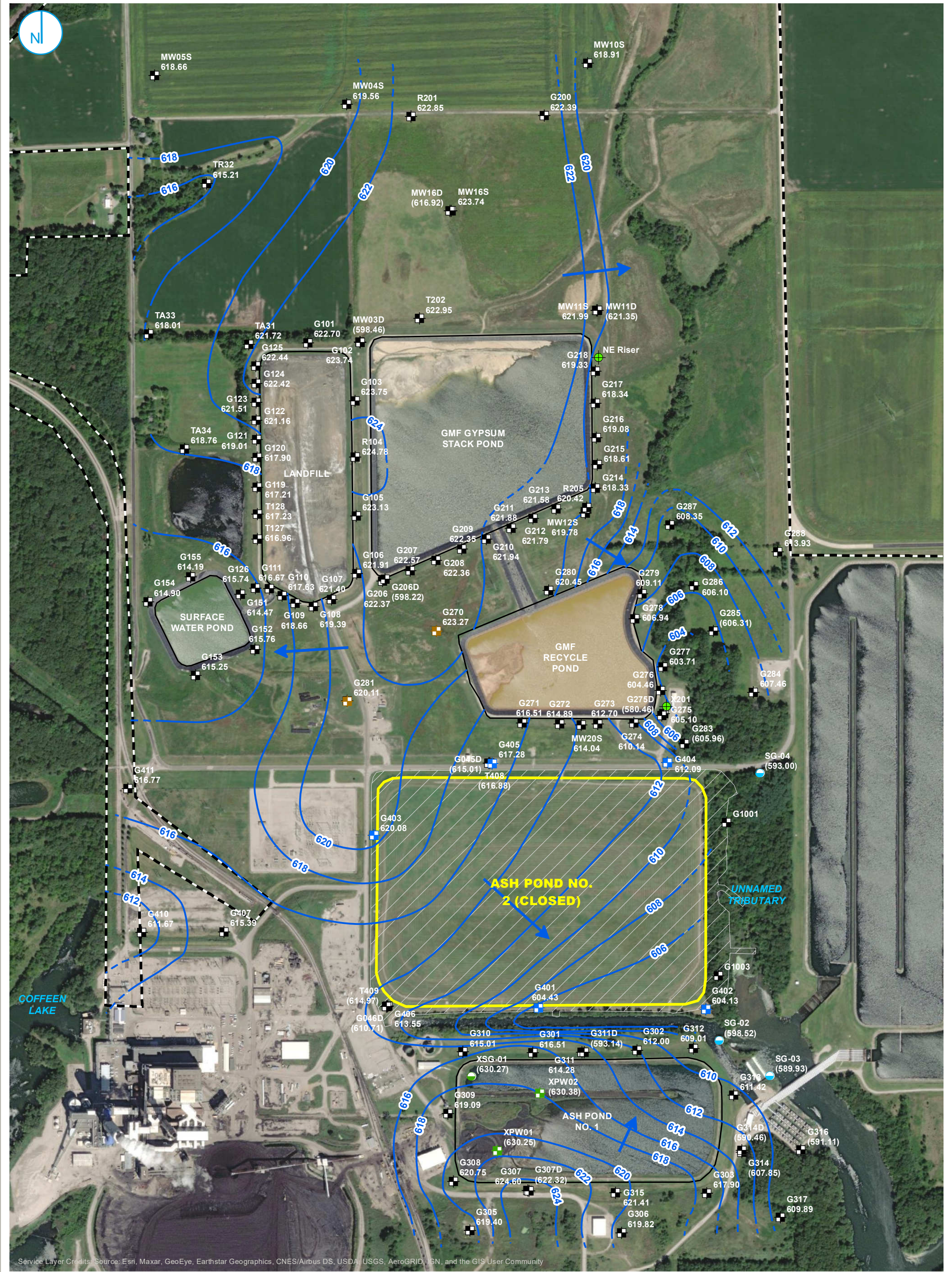
MONITORING WELL LOCATION MAP

FIGURE 1

2022 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT
ASH POND NO. 2
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.





- BACKGROUND WELL

COMPLIANCE WELL

PORE WATER WELL

LEACHATE WELL

MONITORING WELL

STAFF GAGE, CCR UNIT

STAFF GAGE, RIVER
- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)

INFERRED GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

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

LIMITS OF FINAL COVER

PROPERTY BOUNDARY

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

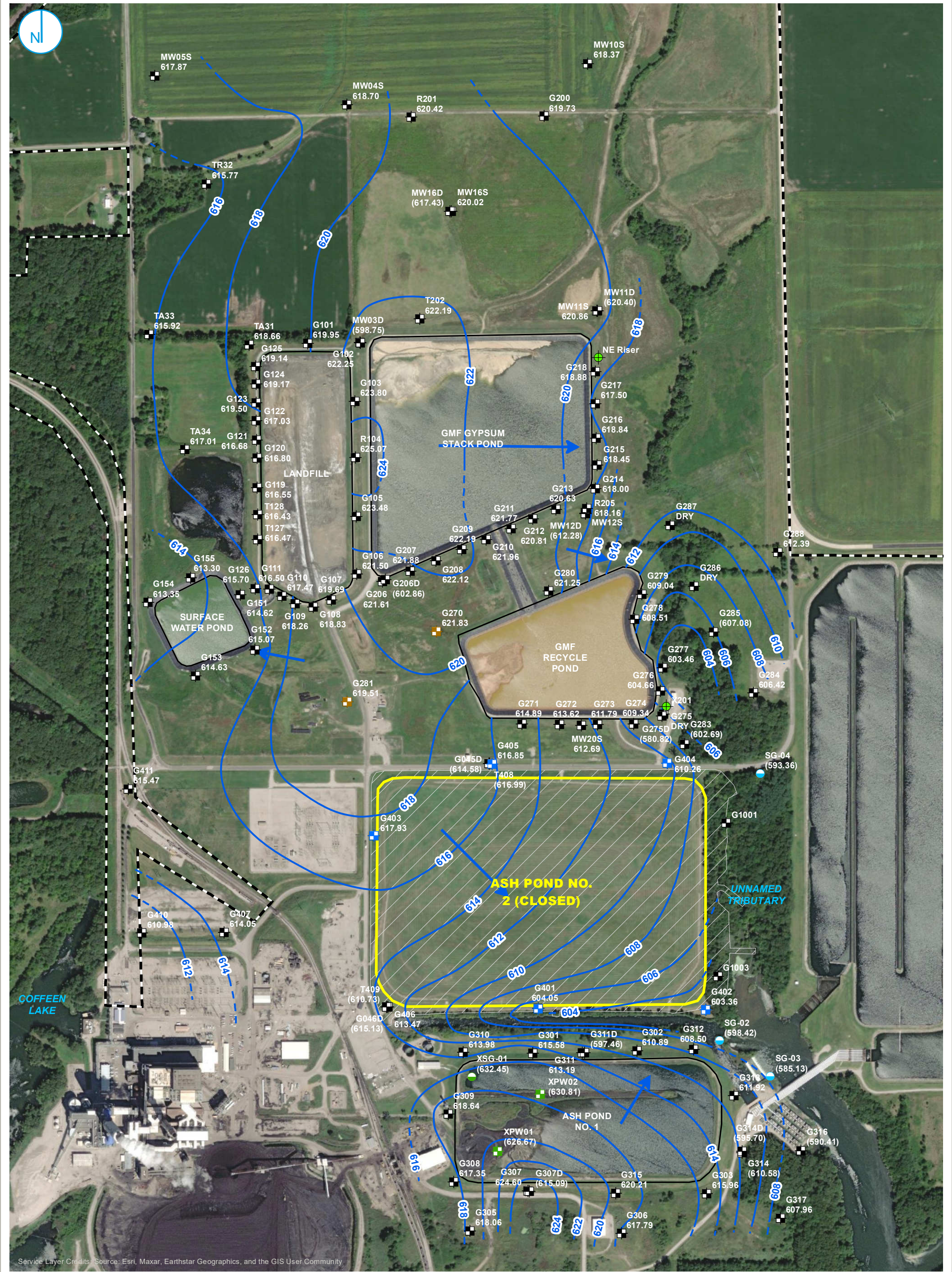
POTENTIOMETRIC SURFACE MAP
FEBRUARY 7, 2022

2022 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT
ASH POND NO. 2
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.





- BACKGROUND WELL

COMPLIANCE WELL

PORE WATER WELL

LEACHATE WELL

MONITORING WELL

STAFF GAGE, CCR UNIT

STAFF GAGE, RIVER
- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)

INFERRED GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

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

SITE FEATURE

LIMITS OF FINAL COVER

PROPERTY BOUNDARY

NOTES:

1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.

2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

POTENTIOMETRIC SURFACE MAP
AUGUST 23, 2022

FIGURE 3

2022 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT
ASH POND NO. 2
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



APPENDICES

APPENDIX A LABORATORY REPORTS



Pace Analytical Services, LLC

2231 W. Altorfer Drive

Peoria, IL 61615

(800)752-6651

March 31, 2022

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

Dear Eric Bauer:

Please find enclosed the **revised** 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.

Gail Schindler

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



Pace Analytical Services, LLC

2231 W. Altorfer Drive

Peoria, IL 61615

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**SAMPLE RECEIPT CHECK LIST**

Items not applicable will be marked as in compliance

Work Order FB01364

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
YES	Short hold time analysis
YES	Current PDC COC submitted
YES	Case narrative provided



Work Order FB01774

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
YES	Short hold time analysis
NO	Current PDC COC submitted
YES	Case narrative provided



Pace Analytical Services, LLC

2231 W. Altorfer Drive

Peoria, IL 61615

(800)752-6651

Case Narrative

Well Cross Reference:

G403 FB01364-01 = FB01360-05

G404 FB01364-02 = FB01360-06

G405 FB01364-03 = FB01360-07

G270 FB01360-01 = FB01362-03 = FB01364-04

Well Cross Reference:

G401 FB01773-01 = FB01774-01

G402 FB01773-02 = FB01774-02



Pace Analytical Services, LLC

2231 W. Altorfer Drive

Peoria, IL 61615

(800)752-6651



ANALYTICAL RESULTS

Sample: FB01364-01

Name: G403

Alias: COF_257_102

Sampled: 02/08/22 09:46

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	5.0	mg/L		02/09/22 23:03	1	1.0	02/09/22 23:03	CRD	EPA 300.0 REV 2.1
Fluoride	0.365	mg/L		02/09/22 23:03	1	0.250	02/09/22 23:03	CRD	EPA 300.0 REV 2.1
Sulfate	53	mg/L		02/09/22 23:22	10	10	02/09/22 23:22	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.36	Feet		02/08/22 09:46	1		02/08/22 09:46	FIELD	Field
Dissolved oxygen, Field	3.6	mg/L		02/08/22 09:46	1		02/08/22 09:46	FIELD	Field
Oxidation Reduction Potential	19.5	mV		02/08/22 09:46	1	-500	02/08/22 09:46	FIELD	Field
pH, Field Measured	7.02	pH Units		02/08/22 09:46	1		02/08/22 09:46	FIELD	Field
Specific Conductance, Field Measured	685.9	umhos/cm		02/08/22 09:46	1		02/08/22 09:46	FIELD	Field
Temperature, Field Measured	11.1	°C		02/08/22 09:46	1		02/08/22 09:46	FIELD	Field
Turbidity, Field Measured	446	NTU		02/08/22 09:46	1	0.00	02/08/22 09:46	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	310	mg/L		02/10/22 07:37	1	10	02/10/22 07:37	JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO ₃	< 10	mg/L		02/10/22 07:37	1	10	02/10/22 07:37	JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	400	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/10/22 09:21	5	3.0	02/11/22 12:16	KMC	EPA 6020A
Arsenic	1.3	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:16	KMC	EPA 6020A
Barium	130	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:16	KMC	EPA 6020A
Beryllium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:16	KMC	EPA 6020A
Boron	< 10	ug/L		02/10/22 09:21	5	10	02/11/22 12:16	WJM	EPA 6020A
Cadmium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:16	KMC	EPA 6020A
Calcium	76	mg/L		02/10/22 09:21	5	0.20	02/11/22 12:16	KMC	EPA 6020A
Chromium	< 4.0	ug/L		02/10/22 09:21	5	4.0	02/11/22 12:16	KMC	EPA 6020A
Cobalt	2.3	ug/L		02/10/22 09:21	5	2.0	02/11/22 12:16	KMC	EPA 6020A
Lead	1.2	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:16	KMC	EPA 6020A
Magnesium	35	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:16	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/10/22 09:21	5	0.20	02/11/22 12:16	KMC	EPA 6020A
Molybdenum	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:16	KMC	EPA 6020A
Potassium	0.76	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:16	KMC	EPA 6020A
Selenium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:16	KMC	EPA 6020A
Sodium	25	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:16	KMC	EPA 6020A



Pace Analytical Services, LLC

2231 W. Altorfer Drive

Peoria, IL 61615

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ANALYTICAL RESULTS

Sample: FB01364-01

Name: G403

Alias: COF_257_102

Sampled: 02/08/22 09:46

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:16	KMC	EPA 6020A
Lithium	< 20	ug/L		02/10/22 09:21	1	20	02/15/22 10:08	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01364-02

Name: G404

Alias: COF_257_102

Sampled: 02/08/22 10:43

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	160	mg/L		02/10/22 00:52	100	100	02/10/22 00:52	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/10/22 00:16	1	0.250	02/10/22 00:16	CRD	EPA 300.0 REV 2.1
Sulfate	480	mg/L		02/10/22 00:52	100	100	02/10/22 00:52	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	3.5	Feet		02/08/22 10:43	1		02/08/22 10:43	FIELD	Field
Dissolved oxygen, Field	4.4	mg/L		02/08/22 10:43	1		02/08/22 10:43	FIELD	Field
Oxidation Reduction Potential	229	mV		02/08/22 10:43	1	-500	02/08/22 10:43	FIELD	Field
pH, Field Measured	6.91	pH Units		02/08/22 10:43	1		02/08/22 10:43	FIELD	Field
Specific Conductance, Field Measured	1822	umhos/cm		02/08/22 10:43	1		02/08/22 10:43	FIELD	Field
Temperature, Field Measured	8.9	°C		02/08/22 10:43	1		02/08/22 10:43	FIELD	Field
Turbidity, Field Measured	< 0.00	NTU		02/08/22 10:43	1	0.00	02/08/22 10:43	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	310	mg/L		02/10/22 07:37	1	10	02/10/22 07:37	JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/10/22 07:37	1	10	02/10/22 07:37	JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1300	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/10/22 09:21	5	3.0	02/11/22 12:20	KMC	EPA 6020A
Arsenic	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:20	KMC	EPA 6020A
Barium	28	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:20	KMC	EPA 6020A
Beryllium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:20	KMC	EPA 6020A
Boron	5000	ug/L		02/10/22 09:21	5	10	02/11/22 12:20	KMC	EPA 6020A
Cadmium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:20	KMC	EPA 6020A
Calcium	200	mg/L		02/10/22 09:21	5	0.20	02/11/22 12:20	KMC	EPA 6020A
Chromium	< 4.0	ug/L		02/10/22 09:21	5	4.0	02/11/22 12:20	KMC	EPA 6020A
Cobalt	< 2.0	ug/L		02/10/22 09:21	5	2.0	02/11/22 12:20	KMC	EPA 6020A
Lead	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:20	KMC	EPA 6020A
Magnesium	97	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:20	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/10/22 09:21	5	0.20	02/11/22 12:20	KMC	EPA 6020A
Molybdenum	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:20	KMC	EPA 6020A
Potassium	0.42	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:20	KMC	EPA 6020A
Selenium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:20	KMC	EPA 6020A
Sodium	72	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:20	KMC	EPA 6020A



ANALYTICAL RESULTS

Sample: FB01364-02

Name: G404

Alias: COF_257_102

Sampled: 02/08/22 10:43

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:20	KMC	EPA 6020A
Lithium	< 20	ug/L		02/10/22 09:21	1	20	02/15/22 10:16	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01364-03

Name: G405

Alias: COF_257_102

Sampled: 02/08/22 12:02

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	6.2	mg/L		02/10/22 01:10	1	1.0	02/10/22 01:10	CRD	EPA 300.0 REV 2.1
Fluoride	0.364	mg/L		02/10/22 01:10	1	0.250	02/10/22 01:10	CRD	EPA 300.0 REV 2.1
Sulfate	1000	mg/L		02/10/22 20:46	250	250	02/10/22 22:27	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.22	Feet		02/08/22 12:02	1		02/08/22 12:02	FIELD	Field
Dissolved oxygen, Field	1.4	mg/L		02/08/22 12:02	1		02/08/22 12:02	FIELD	Field
Oxidation Reduction Potential	152	mV		02/08/22 12:02	1	-500	02/08/22 12:02	FIELD	Field
pH, Field Measured	7.03	pH Units		02/08/22 12:02	1		02/08/22 12:02	FIELD	Field
Specific Conductance, Field Measured	2185	umhos/cm		02/08/22 12:02	1		02/08/22 12:02	FIELD	Field
Temperature, Field Measured	9.6	°C		02/08/22 12:02	1		02/08/22 12:02	FIELD	Field
Turbidity, Field Measured	1.63	NTU		02/08/22 12:02	1	0.00	02/08/22 12:02	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	250	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO ₃	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1400	mg/L		02/11/22 10:15	1	26	02/11/22 11:45	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/10/22 09:21	5	3.0	02/11/22 12:24	KMC	EPA 6020A
Arsenic	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:24	KMC	EPA 6020A
Barium	15	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:24	KMC	EPA 6020A
Beryllium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:24	KMC	EPA 6020A
Boron	10000	ug/L		02/10/22 09:21	5	10	02/11/22 12:24	KMC	EPA 6020A
Cadmium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:24	KMC	EPA 6020A
Calcium	260	mg/L		02/10/22 09:21	5	0.20	02/11/22 12:24	KMC	EPA 6020A
Chromium	< 4.0	ug/L		02/10/22 09:21	5	4.0	02/11/22 12:24	KMC	EPA 6020A
Cobalt	< 2.0	ug/L		02/10/22 09:21	5	2.0	02/11/22 12:24	KMC	EPA 6020A
Lead	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:24	KMC	EPA 6020A
Magnesium	120	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:24	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/10/22 09:21	5	0.20	02/11/22 12:24	KMC	EPA 6020A
Molybdenum	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:24	KMC	EPA 6020A
Potassium	0.46	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:24	KMC	EPA 6020A
Selenium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:24	KMC	EPA 6020A
Sodium	110	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:24	KMC	EPA 6020A



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ANALYTICAL RESULTS

Sample: FB01364-03

Name: G405

Alias: COF_257_102

Sampled: 02/08/22 12:02

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:24	KMC	EPA 6020A
Lithium	< 20	ug/L		02/10/22 09:21	1	20	02/15/22 10:19	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01364-04

Name: G270

Alias: COF_257_102

Sampled: 02/08/22 13:50

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	8.7	mg/L		02/09/22 22:09	1	1.0	02/09/22 22:09	CRD	EPA 300.0 REV 2.1
Fluoride	0.378	mg/L		02/09/22 22:09	1	0.250	02/09/22 22:09	CRD	EPA 300.0 REV 2.1
Sulfate	53	mg/L		02/09/22 19:45	10	10	02/09/22 19:45	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	2.51	Feet		02/08/22 13:50	1		02/08/22 13:50	FIELD	Field
Dissolved oxygen, Field	2.1	mg/L		02/08/22 13:50	1		02/08/22 13:50	FIELD	Field
Oxidation Reduction Potential	101	mV		02/08/22 13:50	1	-500	02/08/22 13:50	FIELD	Field
pH, Field Measured	7.20	pH Units		02/08/22 13:50	1		02/08/22 13:50	FIELD	Field
Specific Conductance, Field Measured	645.2	umhos/cm		02/08/22 13:50	1		02/08/22 13:50	FIELD	Field
Temperature, Field Measured	10.4	°C		02/08/22 13:50	1		02/08/22 13:50	FIELD	Field
Turbidity, Field Measured	1.28	NTU		02/08/22 13:50	1	0.00	02/08/22 13:50	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	340	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	410	mg/L		02/10/22 12:10	1	17	02/10/22 14:17	adm	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/14/22 12:51	5	3.0	02/15/22 15:50	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:50	JMW	EPA 6020A
Barium	33	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:50	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:50	JMW	EPA 6020A
Boron	12	ug/L		02/14/22 12:51	5	10	02/16/22 10:42	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/16/22 10:42	JMW	EPA 6020A
Calcium	53	mg/L		02/14/22 12:51	5	0.20	02/16/22 10:42	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/14/22 12:51	5	4.0	02/16/22 10:42	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/14/22 12:51	5	2.0	02/16/22 10:42	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:50	JMW	EPA 6020A
Magnesium	22	mg/L		02/14/22 12:51	5	0.10	02/17/22 11:59	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/14/22 12:51	5	0.20	02/15/22 15:50	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:50	JMW	EPA 6020A
Potassium	0.58	mg/L		02/14/22 12:51	5	0.10	02/16/22 10:42	JMW	EPA 6020A



ANALYTICAL RESULTS

Sample: FB01364-04

Name: G270

Alias: COF_257_102

Sampled: 02/08/22 13:50

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Selenium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:50	JMW	EPA 6020A
Sodium	89	mg/L		02/14/22 12:51	5	0.10	02/16/22 10:42	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:50	JMW	EPA 6020A
Lithium	< 20	ug/L		02/14/22 12:51	1	20	02/15/22 09:27	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01774-01

Name: G401

Alias: COF_257_102

Sampled: 02/09/22 11:52

Received: 02/09/22 16:03

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	6.4	mg/L		02/15/22 14:24	5	5.0	02/15/22 14:24	CRD	EPA 300.0 REV 2.1
Sulfate	2000	mg/L		02/15/22 12:00	500	500	02/15/22 14:42	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	20.68	Feet		02/09/22 11:52	1		02/09/22 11:52	FIELD	Field
Dissolved oxygen, Field	0.90	mg/L		02/09/22 11:52	1		02/09/22 11:52	FIELD	Field
Oxidation Reduction Potential	78.1	mV		02/09/22 11:52	1	-500	02/09/22 11:52	FIELD	Field
pH, Field Measured	5.76	pH Units		02/09/22 11:52	1		02/09/22 11:52	FIELD	Field
Specific Conductance, Field Measured	2917	umhos/cm		02/09/22 11:52	1		02/09/22 11:52	FIELD	Field
Temperature, Field Measured	13.1	°C		02/09/22 11:52	1		02/09/22 11:52	FIELD	Field
Turbidity, Field Measured	50.3	NTU		02/09/22 11:52	1	0.00	02/09/22 11:52	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	75	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Fluoride	< 0.250	mg/L		02/24/22 12:18	1	0.250	02/24/22 12:18	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	2800	mg/L		02/16/22 08:36	1	26	02/16/22 10:01	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/15/22 12:31	5	3.0	02/18/22 12:47	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/18/22 12:47	JMW	EPA 6020A
Barium	11	ug/L		02/15/22 12:31	5	1.0	02/18/22 12:47	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/18/22 12:47	JMW	EPA 6020A
Boron	3500	ug/L		02/15/22 12:31	5	10	02/18/22 12:47	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/18/22 12:47	JMW	EPA 6020A
Calcium	450	mg/L		02/15/22 12:31	5	0.20	02/18/22 12:47	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/15/22 12:31	5	4.0	02/18/22 12:47	JMW	EPA 6020A
Cobalt	150	ug/L		02/15/22 12:31	5	2.0	02/18/22 12:47	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/18/22 12:47	JMW	EPA 6020A
Magnesium	140	mg/L		02/15/22 12:31	5	0.10	02/18/22 12:47	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/15/22 12:31	5	0.20	02/18/22 12:47	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/18/22 12:47	JMW	EPA 6020A
Potassium	3.2	mg/L		02/15/22 12:31	5	0.10	02/18/22 12:47	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/18/22 12:47	JMW	EPA 6020A
Sodium	81	mg/L		02/15/22 12:31	5	0.10	02/18/22 12:47	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FB01774-01

Name: G401

Alias: COF_257_102

Sampled: 02/09/22 11:52

Received: 02/09/22 16:03

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/18/22 12:47	JMW	EPA 6020A
Lithium	39	ug/L		02/15/22 12:31	1	20	02/18/22 09:49	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01774-02

Name: G402

Alias: COF_257_102

Sampled: 02/09/22 13:20

Received: 02/09/22 16:03

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	2.5	mg/L		02/11/22 10:19	1	1.0	02/11/22 10:19	CRD	EPA 300.0 REV 2.1
Fluoride	0.274	mg/L		02/11/22 10:19	1	0.250	02/11/22 10:19	CRD	EPA 300.0 REV 2.1
Sulfate	690	mg/L		02/15/22 12:00	100	100	02/15/22 15:00	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	8.15	Feet		02/09/22 13:20	1		02/09/22 13:20	FIELD	Field
Dissolved oxygen, Field	3.2	mg/L		02/09/22 13:20	1		02/09/22 13:20	FIELD	Field
Oxidation Reduction Potential	95.8	mV		02/09/22 13:20	1	-500	02/09/22 13:20	FIELD	Field
pH, Field Measured	6.96	pH Units		02/09/22 13:20	1		02/09/22 13:20	FIELD	Field
Specific Conductance, Field Measured	1225	umhos/cm		02/09/22 13:20	1		02/09/22 13:20	FIELD	Field
Temperature, Field Measured	12.1	°C		02/09/22 13:20	1		02/09/22 13:20	FIELD	Field
Turbidity, Field Measured	117	NTU		02/09/22 13:20	1	0.00	02/09/22 13:20	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	490	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1300	mg/L		02/16/22 08:36	1	26	02/16/22 10:01	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/15/22 12:31	5	3.0	02/21/22 11:07	JMW	EPA 6020A
Arsenic	4.8	ug/L		02/15/22 12:31	5	1.0	02/21/22 11:07	JMW	EPA 6020A
Barium	27	ug/L		02/15/22 12:31	5	1.0	02/21/22 11:07	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/21/22 11:07	JMW	EPA 6020A
Boron	5200	ug/L		02/15/22 12:31	5	10	02/21/22 11:07	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/21/22 11:07	JMW	EPA 6020A
Calcium	230	mg/L		02/15/22 12:31	5	0.20	02/21/22 11:07	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/15/22 12:31	5	4.0	02/21/22 11:07	JMW	EPA 6020A
Cobalt	4.4	ug/L		02/15/22 12:31	5	2.0	02/21/22 11:07	JMW	EPA 6020A
Lead	2.1	ug/L		02/15/22 12:31	5	1.0	02/21/22 11:07	JMW	EPA 6020A
Magnesium	140	mg/L		02/15/22 12:31	5	0.10	02/21/22 11:07	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/15/22 12:31	5	0.20	02/21/22 11:07	JMW	EPA 6020A
Molybdenum	2.2	ug/L		02/15/22 12:31	5	1.0	02/21/22 11:07	JMW	EPA 6020A
Potassium	1.2	mg/L		02/15/22 12:31	5	0.10	02/21/22 11:07	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/21/22 11:07	JMW	EPA 6020A
Sodium	53	mg/L		02/15/22 12:31	5	0.22	02/21/22 11:07	JMW	EPA 6020A



Pace Analytical Services, LLC

2231 W. Altorfer Drive

Peoria, IL 61615

(800)752-6651

ANALYTICAL RESULTS

Sample: FB01774-02

Name: G402

Alias: COF_257_102

Sampled: 02/09/22 13:20

Received: 02/09/22 16:03

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/15/22 12:31	5	1.0	02/21/22 11:07	JMW	EPA 6020A
Lithium	34	ug/L		02/15/22 12:31	1	20	02/18/22 09:56	TJJ	EPA 6010B



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B224022 - SW 3015 - EPA 6020A**Blank (B224022-BLK1)**

Prepared: 02/10/22 Analyzed: 02/11/22

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 (B224022-BS1)

Prepared: 02/10/22 Analyzed: 02/11/22

Antimony	547	ug/L	555.6	98	80-120
Arsenic	523	ug/L	555.6	94	80-120
Barium	542	ug/L	555.6	98	80-120
Beryllium	535	ug/L	555.6	96	80-120
Boron	517	ug/L	555.6	93	80-120
Cadmium	528	ug/L	555.6	95	80-120
Calcium	5.80	mg/L	5.556	104	80-120
Chromium	545	ug/L	555.6	98	80-120
Cobalt	545	ug/L	555.6	98	80-120
Lead	540	ug/L	555.6	97	80-120
Magnesium	6.07	mg/L	5.556	109	80-120
Mercury	51.4	ug/L	55.56	93	80-120
Molybdenum	504	ug/L	555.6	91	80-120
Potassium	5.84	mg/L	5.556	105	80-120
Selenium	535	ug/L	555.6	96	80-120
Sodium	6.02	mg/L	5.556	108	80-120
Thallium	539	ug/L	555.6	97	80-120
Lithium	526	ug/L	555.6	95	80-120

Batch B224043 - IC No Prep - EPA 300.0 REV 2.1**Calibration Blank (B224043-CCB1)**

Prepared & Analyzed: 02/09/22

Chloride	0.469	mg/L
Sulfate	0.0350	mg/L



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B224043 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B224043-CCB1)				Prepared & Analyzed: 02/09/22					
Fluoride	0.00	mg/L							
Calibration Check (B224043-CCV1)				Prepared & Analyzed: 02/09/22					
Sulfate	4.67	mg/L		5.000		93	90-110		
Fluoride	4.85	mg/L		5.000		97	90-110		
Chloride	4.58	mg/L		5.000		92	90-110		
<u>Batch B224051 - No Prep - SM 2540C</u>									
Blank (B224051-BLK1)				Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224051-BS1)				Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	960	mg/L		1000		96	84.9-109		
Solids - total dissolved solids (TDS)	960	mg/L		1000		96	84.9-109		
<u>Batch B224172 - No Prep - SM 2540C</u>									
Blank (B224172-BLK1)				Prepared & Analyzed: 02/11/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224172-BS1)				Prepared & Analyzed: 02/11/22					
Solids - total dissolved solids (TDS)	940	mg/L		1000		94	84.9-109		
<u>Batch B224222 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B224222-CCB1)				Prepared & Analyzed: 02/10/22					
Sulfate	0.104	mg/L							
<u>Batch B224309 - No Prep - SM 2320B 1997</u>									
Blank (B224309-BLK1)				Prepared & Analyzed: 02/10/22					
Alkalinity - carbonate as CaCO ₃	2.50	mg/L							
Blank (B224309-BLK2)				Prepared & Analyzed: 02/10/22					
Alkalinity - carbonate as CaCO ₃	2.50	mg/L							
<u>Batch B224310 - No Prep - SM 2320B 1997</u>									
Blank (B224310-BLK1)				Prepared & Analyzed: 02/10/22					
Alkalinity - bicarbonate as CaCO ₃	2.50	mg/L							
Blank (B224310-BLK2)				Prepared & Analyzed: 02/10/22					
Alkalinity - bicarbonate as CaCO ₃	2.50	mg/L							
<u>Batch B224335 - SW 3015 - EPA 6020A</u>									
Blank (B224335-BLK1)				Prepared: 02/14/22 Analyzed: 02/15/22					
Antimony	< 3.0	ug/L							
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B224335 - SW 3015 - EPA 6020A</u>									
Blank (B224335-BLK1)				Prepared: 02/14/22 Analyzed: 02/15/22					
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 (B224335-BS1)				Prepared: 02/14/22 Analyzed: 02/15/22					
Antimony	552	ug/L		555.6		99	80-120		
Arsenic	527	ug/L		555.6		95	80-120		
Barium	547	ug/L		555.6		98	80-120		
Beryllium	542	ug/L		555.6		98	80-120		
Boron	568	ug/L		555.6		102	80-120		
Cadmium	542	ug/L		555.6		98	80-120		
Calcium	6.56	mg/L		5.556		118	80-120		
Chromium	581	ug/L		555.6		105	80-120		
Cobalt	558	ug/L		555.6		100	80-120		
Lead	585	ug/L		555.6		105	80-120		
Magnesium	6.23	mg/L		5.556		112	80-120		
Mercury	56.0	ug/L		55.56		101	80-120		
Molybdenum	536	ug/L		555.6		97	80-120		
Potassium	6.22	mg/L		5.556		112	80-120		
Selenium	555	ug/L		555.6		100	80-120		
Sodium	6.53	mg/L		5.556		118	80-120		
Thallium	562	ug/L		555.6		101	80-120		
Lithium	511	ug/L		555.6		92	80-120		
<u>Batch B224339 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B224339-CCB1)				Prepared & Analyzed: 02/11/22					
Chloride	0.294	mg/L							
Fluoride	0.00	mg/L							
Calibration Check (B224339-CCV1)				Prepared & Analyzed: 02/11/22					
Fluoride	5.10	mg/L		5.000		102	90-110		
Chloride	4.85	mg/L		5.000		97	90-110		
<u>Batch B224468 - SW 3015 - EPA 6020A</u>									
Blank (B224468-BLK1)				Prepared: 02/15/22 Analyzed: 02/18/22					
Antimony	< 3.0	ug/L							



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B224468 - SW 3015 - EPA 6020A</u>									
Blank (B224468-BLK1)				Prepared: 02/15/22 Analyzed: 02/18/22					
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 (B224468-BS1)				Prepared: 02/15/22 Analyzed: 02/18/22					
Antimony	537	ug/L		555.6		97	80-120		
Arsenic	527	ug/L		555.6		95	80-120		
Barium	555	ug/L		555.6		100	80-120		
Beryllium	518	ug/L		555.6		93	80-120		
Boron	506	ug/L		555.6		91	80-120		
Cadmium	547	ug/L		555.6		99	80-120		
Calcium	6.28	mg/L		5.556		113	80-120		
Chromium	580	ug/L		555.6		104	80-120		
Cobalt	572	ug/L		555.6		103	80-120		
Lead	550	ug/L		555.6		99	80-120		
Magnesium	6.23	mg/L		5.556		112	80-120		
Mercury	54.4	ug/L		55.56		98	80-120		
Molybdenum	558	ug/L		555.6		100	80-120		
Potassium	6.42	mg/L		5.556		116	80-120		
Selenium	547	ug/L		555.6		99	80-120		
Sodium	6.46	mg/L		5.556		116	80-120		
Thallium	548	ug/L		555.6		99	80-120		
Lithium	574	ug/L		555.6		103	80-120		
<u>Batch B224516 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B224516-CCB1)				Prepared: 02/14/22 Analyzed: 02/15/22					
Chloride	0.554	mg/L							
Sulfate	0.00	mg/L							
Calibration Blank (B224516-CCB2)				Prepared & Analyzed: 02/14/22					
Chloride	0.494	mg/L							
Sulfate	0.00410	mg/L							



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B224516 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Check (B224516-CCV1)				Prepared & Analyzed: 02/14/22					
Sulfate	5.10	mg/L		5.000		102	90-110		
Chloride	5.12	mg/L		5.000		102	90-110		
Calibration Check (B224516-CCV2)				Prepared & Analyzed: 02/14/22					
Sulfate	4.99	mg/L		5.000		100	90-110		
Chloride	4.94	mg/L		5.000		99	90-110		
<u>Batch B224541 - No Prep - SM 2540C</u>									
Blank (B224541-BLK1)				Prepared & Analyzed: 02/16/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224541-BS1)				Prepared & Analyzed: 02/16/22					
Solids - total dissolved solids (TDS)	940	mg/L		1000		94	84.9-109		
<u>Batch B224606 - No Prep - SM 2320B 1997</u>									
Blank (B224606-BLK1)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO ₃	2.50	mg/L							
Blank (B224606-BLK2)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO ₃	2.50	mg/L							
Blank (B224606-BLK3)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO ₃	2.50	mg/L							
<u>Batch B224607 - No Prep - SM 2320B 1997</u>									
Blank (B224607-BLK1)				Prepared & Analyzed: 02/15/22					
Alkalinity - carbonate as CaCO ₃	< 2.0	mg/L							
Blank (B224607-BLK2)				Prepared & Analyzed: 02/15/22					
Alkalinity - carbonate as CaCO ₃	< 2.0	mg/L							
<u>Batch B225340 - No Prep - SM 4500F C 1997</u>									
Calibration Blank (B225340-CCB1)				Prepared & Analyzed: 02/24/22					
Fluoride	0.00600	mg/L							
Calibration Blank (B225340-CCB2)				Prepared & Analyzed: 02/24/22					
Fluoride	0.0120	mg/L							
Calibration Check (B225340-CCV1)				Prepared & Analyzed: 02/24/22					
Fluoride	0.706	mg/L		0.7000		101	90-110		
Calibration Check (B225340-CCV2)				Prepared & Analyzed: 02/24/22					
Fluoride	0.706	mg/L		0.7000		101	90-110		



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

Revised Report - added missing field calibration information

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

Gail G Schindler



Certified by: Gail Schindler, Project Manager

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION											
Site: Coffeen Ash Pond 2		Client: RAMBOLL		Task #: Unit 102		Start Date: 2/19/2022		Time: 1031			
Project Number: 2285		Finish Date: 2/19/2022		Time: 1152							
Field Personnel: Aaron Pemberton											
WELL INFORMATION			EVENT TYPE		PURGE INFORMATION						
Well ID: G401	☐ Well Development		☐ Well Development		Purge Method: ☐ Bailor ☒ Pump						
Casing ID: 2	☒ Low-Flow / Low-Stress Sampling		☐ Low-Flow / Low-Stress Sampling		Bailer Type: n/a						
Screen Interval: 4.43'	☐ Well Volume Approach Sampling		☐ Well Volume Approach Sampling		Pump Type and Serial #: n/a						
Borehole Diameter: n/a	☐ Other (Specify below)		☐ Other (Specify below)		Tube/Pump Intake Depth: n/a						
Filter Pack Interval: n/a					Stabilized Pumping Rate: 100 ml/min						
DEPTH MEASUREMENTS			VOLUME CALCULATION AND PRODUCTION INFORMATION								
INITIAL			Volume Calculation Type: ☒ Well Casing ☐ Borehole								
Depth	Date/Time	Depth	Date/Time	Volume Per Foot: _____ feet							
FT BTOC	(24-Hour)	FT BTOC	(24-Hour)								
LNAPL	n/a	n/a	n/a								
Groundwater	20.68	20.95	1152	1 Well Volume: n/a Gallons 3 Well Volumes: n/a Gallons							
DNAPL	n/a	n/a	n/a	5 Well Volumes: n/a Gallons 10 Well Volumes: n/a Gallons							
Casing Base	n/a	n/a	n/a	Total Volumes Produced: n/a Gallons							
Water Level Serial #: 4778-7			Water Quality Probe Type and Serial #: 47600 #767098								
WATER QUALITY INDICATOR PARAMETERS											
Sampling Stage	Time (military)	Volume Removed (mls)	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	1045	0	20.68	0	13.03	5.72	2786.6	1.10	86.21	84.2	clear
purge	1057	1200	20.95	0.27	13.04	5.74	2550.3	0.96	64.92	80.2	clear
	1059	1400	20.95	0.27	13.07	5.76	2916.9	0.90	50.22	78.1	clear
	1101	1600	20.95	0.27							
NOTES											
GMZ Filled here MS/MSD 13up Filled here											
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 Celsius											

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION											
Site: Coffeen Ash Pond 2		Client: RAMBOLL		Task #: Unit 102		Start Date: 2/19/2022		Time: 1207			
Project Number: 2285		Finish Date: 2/19/2022		Time: 1320							
Field Personnel: Aaron Pemberton											
WELL INFORMATION			EVENT TYPE		PURGE INFORMATION						
Well ID: G402			☐ Well Development		Purge Method: ☐ Bailer ☒ Pump						
Casing ID: 2			☒ Low-Flow / Low-Stress Sampling		Bailer Type: n/a						
Screen Interval: 10'			☐ Well Volume Approach Sampling		Pump Type and Serial #: n/a						
Borehole Diameter: n/a			☐ Other (Specify below)		Tube/Pump Intake Depth: n/a						
Filter Pack Interval: n/a					Stabilized Pumping Rate: 100 ml/min						
DEPTH MEASUREMENTS			VOLUME CALCULATION AND PRODUCTION INFORMATION								
INITIAL			Volume Calculation Type: ☒ Well Casing ☐ Borehole								
FINAL			Volume Per Foot: _____ feet								
Standing Water Column:											
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 #: Heron 0144-7 #4778-7			Water Quality Probe Type and Serial #: AT 000 #162098								
WATER QUALITY INDICATOR PARAMETERS											
Sampling Stage	Time (military)	Volume Removed (mls)	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	1220	0	8.15	0	-	-	-	-	-	-	-
purge	1232	1200	8.45	0.30	12.10	6.95	1305.6	3.24	12160	88.3	clear
	1234	1400	8.45	0.30	12.04	6.95	1500.5	3.16	11888	90.6	clear
	1236	1600	8.45	0.30	12.11	6.96	1225.3	3.22	11726	95.8	clear
NOTES										ABBREVIATIONS	
GMZ - Dilled wa										Cond. - Actual Conductivity FT BTOC - Feet Below Top of Casing na - Not Applicable mm - Not Measured °C - Degrees Celsius	

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION											
Site: Coffeen Ash Pond 2		Client: RAMBOLL		Task #: Unit 102		Start Date: 2/8/22		Time: 0857			
Project Number: 2285		Finish Date: 2/8/22		Time: 0946							
Field Personnel: Grant Newick											
WELL INFORMATION			EVENT TYPE			PURGE INFORMATION					
Well ID: G403			☐ Well Development ☒ Low-Flow / Low-Stress Sampling ☐ Well Volume Approach Sampling ☐ Other (Specify below)			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/min					
Casing ID: 2			Inches								
Screen Interval: 4.67'			Inches								
Borehole Diameter: n/a			Inches								
Filter Pack Interval: n/a			Inches								
DEPTH MEASUREMENTS			VOLUME CALCULATION AND PRODUCTION INFORMATION								
INITIAL			FINAL								
Depth	Date/Time	Depth	Date/Time	Volume Per Foot:	Standing Water Column:	1 Well Volumes:	3 Well Volumes:	10 Well Volumes:	Gallons		
FT BTOC	(24-Hour)	FT BTOC	(24-Hour)								
n/a	n/a	n/a	n/a								
LNAPL											
Groundwater	0858	10.40	0943								
DNAPL	n/a	n/a	n/a								
Casing Base	n/a	n/a	n/a								
Water Level Serial #: 269560			Water Quality Probe Type and Serial #: A7600 846000								
WATER QUALITY INDICATOR PARAMETERS											
Sampling Stage	Time (military)	Volume Removed (mls)	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	0909	1500	8.60	—	—	—	—	—	—	—	—
Purge	0913	1900	8.68	0.08	11.22	7.64	687.12	3.74	487.67	17.1	Mod color
	0914	2000	8.88	0.20	11.09	7.03	687.10	3.68	441.27	18.3	tan
	0915	2100	9.02	0.14	11.10	7.02	685.86	3.56	445.93	19.5	Slight tan
										ABBREVIATIONS	
										Cond. - Actual Conductivity	
										FT BTOC - Feet Below Top of Casing	
										SEC - Specific Electrical Conductance	
										SU - Standard Units	
Temp - Temperature											
°C - Degrees Celsius											
NOTES											
218/22 G/MZ 											

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION											
Site: Coffeen Ash Pond 2		Client: RAMBOLL		Task #: Unit 102		Start Date: 2/8/2022		Time: 0934			
Project Number: 2285		Finish Date: 2/8/2022		Time: 1043							
Field Personnel: Aaron Pemberton											
WELL INFORMATION			EVENT TYPE		PURGE INFORMATION						
Well ID: G404	☐ Well Development		Purge Method:	☐ Bailer	☒ Pump						
Casing ID: 2	☒ Low-Flow / Low-Stress Sampling		Bailer Type:	n/a							
Screen Interval: 4.75'	☐ Well Volume Approach Sampling		Pump Type and Serial #:	n/a							
Borehole Diameter: n/a	☐ Other (Specify below)		Tube/Pump Intake Depth:	n/a							
Filter Pack Interval: n/a			Stabilized Pumping Rate:	100 ml/min							
DEPTH MEASUREMENTS			VOLUME CALCULATION AND PRODUCTION INFORMATION								
INITIAL			Volume Calculation Type: ☒ Well Casing ☐ Borehole								
Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)	Volume Per Foot:							
n/a	n/a	n/a	n/a	Standing Water Column: feet							
LNAPL	n/a	n/a	n/a	1 Well Volume:	n/a	Gallons	3 Well Volumes:	n/a	Gallons		
Groundwater	0942	3.96	1043	5 Well Volumes:	n/a	Gallons	10 Well Volumes:	n/a	Gallons		
DNAPL	n/a	n/a	n/a	Total Volumes Produced:	n/a						
Casing Base	n/a	n/a	n/a	Well Purged Dry?	☐ Yes ☒ No						
Water Level Serial #: Helon D'Appa - 7 #4778-7			Water Quality Probe Type and Serial # 47600 #762098								
WATER QUALITY INDICATOR PARAMETERS											
Sampling Stage	Time (military)	Volume Removed (mls)	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	0942	0	3.50	0	-	-	-	-	-	-	-
purge	0954	1200	3.96	0.46	8.92	6.91	1822.4	4.40	0.00	233.4	Slight Yellow
	0956	1400	3.96	0.46	8.94	6.92	1822.7	4.34	0.00	231.8	Slight Yellow
	0958	1600	3.96	0.46	8.91	6.91	1822.5	4.38	0.00	229.1	Slight Yellow
NOTES											
GMZ Files here											
ABBREVIATIONS											
Cond - Actual Conductivity FT BTOC - Feet Below Top of Casing na - Not Applicable nm - Not Measured °C - Degrees Celsius ORP - Oxidation-Reduction Potential SEC - Specific Electrical Conductance SU - Standard Units Temp - Temperature											

PROJECT INFORMATION											
Site: Coffee Ash Pond 2		Client: RAMBOLL									
Project Number: 2380		Task #: 8		Start Date: 2/18/2022		Time: 10:50					
Field Personnel: Aaron Amberson				Finish Date: 2/18/2022		Time: 12:02					
WELL INFORMATION			EVENT TYPE			PURGE INFORMATION					
Well ID: G405		☐ Well Development		☐ Bailer		☒ Pump					
Casing ID: 2		☒ Low-Flow / Low-Stress Sampling		Bailer Type: n/a							
Screen Interval:		☐ Well Volume Approach Sampling		Pump Type and Serial #: n/a							
Borehole Diameter: n/a		☐ Other (Specify below)		Tube/Pump Intake Depth: n/a							
Filter Pack Interval: n/a				Stabilized Pumping Rate: 100 ml/min							
DEPTH MEASUREMENTS			VOLUME CALCULATION AND PRODUCTION INFORMATION								
	INITIAL		FINAL		Volume Calculation Type: ☒ Well Casing ☐ Borehole						
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)	Volume Per Foot:						
LNAPL	n/a	n/a	n/a	n/a	Standing Water Column:						
Groundwater	6.22	10:53	6.43	12:02	1 Well Volume: n/a Gallons		3 Well Volumes: n/a Gallons				
DNAPL	n/a	n/a	n/a	n/a	5 Well Volumes: n/a Gallons		10 Well Volumes: n/a Gallons				
Casing Base	n/a	n/a	n/a	n/a	Total Volumes Produced: n/a Gallons						
Water Level Serial #:		Heran Digger - 7 #4778-T		Water Quality Probe Type and Serial #		A-7600 #762078					
APP 2/18/22											
WATER QUALITY INDICATOR PARAMETERS											
Sampling Stage	Time (military)	Volume Removed (mls)	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	10:53	0	6.22	0	-	-	-	-	-	-	-
Purge	11:05	1200	6.43	0.21	9.87	7.02	2082.7	0.73	5.64	172.8	Slightly cloudy
	11:07	1400	6.43	0.21	9.85	7.02	2153.2	0.70	1.41	169.3	Slightly cloudy
	11:09	1600	6.43	0.21	9.72	7.03	2015.6	1.25	1.20	159.3	Slightly cloudy
	11:11	1800	6.43	0.21	9.64	7.04	2183.4	1.38	2.61	158.1	Slightly cloudy
	11:13	2000	6.43	0.21	9.56	7.03	2184.7	1.44	1.63	151.5	Slightly cloudy
NOTES										ABBREVIATIONS	
GMZ Filled here										Cond. - Actual Conductivity	
										FT BTOC - Feet Below Top of Casing	
										na - Not Applicable	
										mm - Not Measured	
										ORP - Oxidation-Reduction Potential	
										SEC - Specific Electrical Conductance	
										SU - Standard Units	
										Temp - Temperature	
										C - Degrees Celsius	

SITE

COFFEEN GMZ

WELL/SAMPLE POINT

G270

Date: 2/8/22 Start Time: 1243 Finish/Sample Time: 1350Well Depth (Bottom) From MP: 21.13 ftDepth to Water From MP: 2.51 ftWell Water Volume: 11.52 LWater Column Length: 19.02 ftTotal Purge Volume: 2100 mL

Reading	Time	pH	Spec Con	Temp	DO	Turbidity	ORP
(Units)		(s.u.)	(umhos/cm)	(deg C)	(mg/L)	(NTU)	(mV)
1 2/8/22	1243	7.20	687.09	10.40	2.19	1.70	96.6
2	1258	7.21	705.69	10.39	2.11	1.96	97.8
3	1300	7.20	642.56	10.40	2.08 2.24	2.02	99.0
4	1302	7.20	681.93	10.35	2.05	1.59	100.0
5	1304	7.20	645.20	10.38	+2.08	1.28	100.9

Sampled with:

bladder pump

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ StrongColor: ☒ None ☐ Slight ☐ Mod. ☐ StrongTurb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Weather/Environment

Remarks:

Final DTW
2.80 ft

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Phenols (A,G,250mL, H2SO4)
GP2 / + 1	Cyanide (P, 250mL, NaOH)
GP2 / + 1	Metals (P, 250mL, HNO3)
GP2 / + 1	General (P, 500mL)
GP2 / 1	HNO3 (P, 2.5L)

Filtered	
Qty	Bottles
GP2 / + 1	Metals (P,250mL, HNO3)
1	General (P,500mL)
	In-Line Filters Used

Comments

5 GMZ6 Quart

Sampler's Signature:



Multiparameter Meter Field Calibration Checklist

Field Personnel:	MJN	Date:	3/8/22		
Weather conditions:	21-46°, sunny, NE 6 mph wind	Signature:	<i>[Signature]</i>		
Make/Model:	AquaTroll 600	S/N:	846800		
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 regimen (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: **0820**

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.04	s.u.	±0.1 s.u.			
7a	7.05	s.u.	±0.1 s.u.			
10a	10.03	s.u.	±0.1 s.u.			
SC Zero (DI)	13.07	µS/cm	0<25 µS/cm			
SC 2000	2015	µS/cm	±5%			
ORP	242	mV	±15 mV			
DO (Zero pt)	0.03	mg/L	±0.1			
DO (Saturated)	95.47	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.04	s.u.	±0.15 s.u.		
7b	6.91	s.u.	±0.15 s.u.		
10b	10.05	s.u.	±0.15 s.u.		
SC1000	1007	µS/cm	±5%		

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			

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:



Date:

2/8/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Tracy Carroll		Date:	2/8/22	
Weather conditions:	25-43 Partly Cloudy 0-10 Above Cloudy		Signature:	Tracy Carroll	
Make/Model	AquaTroll 600		S/N	739450	
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 regimen (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 #:	K063-05	Lot #:	K134-08	Lot #:	J235-04
exp:	6/8/23	exp:	6/23/23	exp:	12/17/22
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:	LabChem	Manufacturer:	Geotech
Lot #:	OGD046	Lot #:	J214-24	Lot #:	OGC851
exp:	AUG/23	exp:	APR/23	exp:	MAY/23
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 #:	4002A08	Lot #:	OGA078
		exp:	DEC/22	exp:	APR/22
RDO					
Sodium Sulfite in DI Water		ORP		Zobell's Standard	
Value:	0	Value*:	245.9	10.9	
Range:	+/- 0.01	Range:		+/- 10 mV	
Manufacturer:	Fisher Chemical	Manufacturer:		In-Situ	
Lot #:	168261	Lot #:		OGC1145	
Prepared by:	PDC Tech Services, Inc.	exp:		AUG/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					

3/21/22
TC

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:

8:42

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	3.93	s.u.	±0.1 s.u.	P	No	
7a	6.96	s.u.	±0.1 s.u.	P		
10a	10.03	s.u.	±0.1 s.u.	P		
SC Zero (DI)	22.35	µS/cm	0<25 µS/cm	P		
SC 2000	208.0	µS/cm	±5%	P		
ORP @ 13	245.9	mV	±15 mV	P		
DO (Zero pt)	0.05	mg/L	±0.1	P		
DO (Saturated)	142.20	%	97-100%	F	Y	100
Turbidity (DI)	0.17	NTU	<2 NTU	P	NU	/

ICV (Initial Calibration Verification)

9:08

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	3.93	s.u.	±0.15 s.u.	P	
7b	6.87	s.u.	±0.15 s.u.	P	
10b	9.94	s.u.	±0.15 s.u.	P	
SC1000	1033.0	µS/cm	±5%	P	

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.03	s.u.	±0.1 s.u.	P	N	NA
7	6.99	s.u.	±0.1 s.u.	P		
10	9.99	s.u.	±0.1 s.u.	P		
SC 1000	995.77	µS/cm	±5%	P		
DO (Zero pt)	0.09	mg/L	±0.1 mg/L	P		
Turbidity (DI)	0.83	NTU	<2 NTU	P		

CCV (Continued Calibration Verification):

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.	P	N	NA
7*	7.02	s.u.	±0.1 s.u.	P		
10	10.04	s.u.	±0.1 s.u.	P		
SC 1000	1009.0	µS/cm	±5%	P		
DO (Zero pt)	0.10	mg/L	±0.1 mg/L	P		
Turbidity (DI)	0.18	NTU	<2 NTU	P		

Comments:

Signature:

Jessy Carzola

Date:

2/8/22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Haron Amelton	Date:	2/18/2022
Weather conditions:	30°-45° Sunny Wind S at 6 mph	Signature:	
Make/Model:	AquaTroll 600	S/N:	262098

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*:	242 @ 15°		
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: 1248

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.03	s.u.	±0.1 s.u.	pass	NO	N/A
7a	7.06	s.u.	±0.1 s.u.			
10a	10.05	s.u.	±0.1 s.u.			
SC Zero (DI)	6.27	µS/cm	0<25 µS/cm			
SC 2000	1092.7	µS/cm	±5%			
ORP	235.6	mV	±15 mV			
DO (Zero pt)	0.08	mg/L	±0.1			
DO (Saturated)	97.23	%	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.	pass	N/A
7b	6.06	s.u.	±0.15 s.u.		
10b	10.00	s.u.	±0.15 s.u.		
SC1000	991.00	µS/cm	±5%		

CCV (Continued Calibration Verification): 1320

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.05	s.u.	±0.1 s.u.	pass	NO	N/A
7	7.00	s.u.	±0.1 s.u.			
10	10.06	s.u.	±0.1 s.u.			
SC 1000	1013.7	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:



Date:

2/18/2022

Multiparameter Meter Field Calibration Checklist

Field Personnel	Matt Tuller		Date:	2/9/22	
Weather conditions:	44° P sunny - P. cloudy wind w 5-10 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:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	3.96	s.u.	±0.1 s.u.	Pass	No	NA
7a	7.04	s.u.	±0.1 s.u.			
10a	10.07	s.u.	±0.1 s.u.			
SC Zero (DI)	18.39	µS/cm	0<25 µS/cm			
SC 2000	2003.0	µS/cm	±5%			
ORP	237.7 @ 14°C	mV	±15 mV			
DO (Zero pt)	0.04	mg/L	±0.1			
DO (Saturated)	99.05	%	97-100%			
Turbidity (DI)	0.89	NTU	<2 NTU			

ICV (Initial Calibration Verification)

1128

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.07	s.u.	±0.15 s.u.	Pass	None
7b	6.91	s.u.	±0.15 s.u.		
10b	9.99	s.u.	±0.15 s.u.		
SC1000	1010.3	µS/cm	±5%		

CCV (Continued Calibration Verification):

1710

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.03	s.u.	±0.1 s.u.	Pass	No	NA
7	7.04	s.u.	±0.1 s.u.			
10	10.10	s.u.	±0.1 s.u.			
SC 1000	996.15	µS/cm	±5%			
DO (Zero pt)	0.08	mg/L	±0.1 mg/L			
Turbidity (DI)	1.07	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:

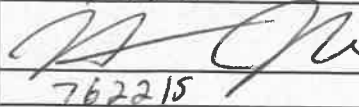


Date:

2/9/22

 MB
2/9/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Matt Julion		Date:	2/8/22	
Weather conditions:	54°-57°F P. Cloudy wind 10-20 mph SW		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:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.00	s.u.	±0.1 s.u.	Pass	No	NA
7a	7.04	s.u.	±0.1 s.u.	↓	↓	↓
10a	10.26	s.u.	±0.1 s.u.	↓	↓	↓
SC Zero (DI)	23.51	µS/cm	0<25 µS/cm	↓	↓	↓
SC 2000	2004.7	µS/cm	±5%	↓	↓	↓
ORP	243.2 @ 15°C	mV	±15 mV	↓	↓	↓
DO (Zero pt)	0.03	mg/L	±0.1	↓	↓	↓
DO (Saturated)	99.72	%	97-100%	↓	↓	↓
Turbidity (DI)	0.92	NTU	<2 NTU	↓	↓	↓

ICV (Initial Calibration Verification)

1054

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.09	s.u.	±0.15 s.u.	Pass	None
7b	6.91	s.u.	±0.15 s.u.	↓	↓
10b	9.98	s.u.	±0.15 s.u.	↓	↓
SC1000	986.10	µS/cm	±5%	↓	↓

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.05	s.u.	±0.1 s.u.	Pass	No	NA
7	7.07	s.u.	±0.1 s.u.	↓	↓	↓
10	10.09	s.u.	±0.1 s.u.	↓	↓	↓
SC 1000	991.32	µS/cm	±5%	↓	↓	↓
DO (Zero pt)	0.08	mg/L	±0.1 mg/L	↓	↓	↓
Turbidity (DI)	1.02	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:

Date:

2/18/22

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Terry Carroll</u>	Date: <u>2/9/22</u>		
Weather conditions: <u>44° Wind 8-10 mph Partly Cloudy</u>	Signature: <u>Terry Carroll</u>		
Make/Model: <u>AquaTroll 600</u>	S/N: <u>739450</u>		
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 regimen (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
Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	K063-05	Lot #:	K134-08
exp:	<u>6/8/23</u>	exp:	<u>6/23/23</u>
Secondary Source:			
pH: 4b	4.00	pH: 7b	7.00
Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	LabChem
Lot #:	OGD046	Lot #:	J214-24
exp:	<u>AUG/23</u>	exp:	<u>APR/23</u>
Spec Con.			
µS/cm: DI water	0	µS/cm: SC1000	1000
Range:	Not Measured	Range:	+/- 1
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical
Received:		Lot #:	4002A08
		exp:	<u>Dec/22</u>
		exp:	<u>APR/22</u>
RDO			
Sodium Sulfite in DI Water		ORP	
Value:	0	Value*:	<u>237.9</u>
Range:	+/- 0.01	Range:	<u>+/- 10 mV</u>
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	OGC1145
Prepared by:	PDC Tech Services, Inc:	exp:	<u>AUG/22</u>
Turbidity (if required)			
0 NTU	0 (DI Water)	1 NTU	1
Range:	Not Measured	Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	
Lot #:	NA	Lot #:	
exp:	NA	exp:	
Notes:			
*See bottle for chart of values based on Temperature			

3/2/22
TC

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:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	3.92	s.u.	±0.1 s.u.	P	N	NA
7a	6.91	s.u.	±0.1 s.u.			
10a	10.00	s.u.	±0.1 s.u.			
SC Zero (DI)	13.43	µS/cm	0<25 µS/cm			
SC 2000	2037.2	µS/cm	±5%			
ORP 13	237.9	mV	±15 mV			
DO (Zero pt)	0.03	mg/L	±0.1			
DO (Saturated)	97.15	%	97-100%			
Turbidity (DI)	0.20	NTU	<2 NTU			

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	3.87	s.u.	±0.15 s.u.	P	NA
7b	6.85	s.u.	±0.15 s.u.		
10b	9.94	s.u.	±0.15 s.u.		
SC1000	1036.2	µS/cm	±5%		

CCV (Continued Calibration Verification):

1530
Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.07	s.u.	±0.1 s.u.	P	N	NA
7	7.06	s.u.	±0.1 s.u.			
10	10.09	s.u.	±0.1 s.u.			
SC 1000	1036.6	µS/cm	±5%			
DO (Zero pt)	0.10	mg/L	±0.1 mg/L			
Turbidity (DI)	0.37	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:

Juan Carlos

Date:

2/9/2022
TR

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Aisha Rimbunan		Date:	2/1/2012	
Weather conditions:	36-43°C Sunny Wind SW @ 10 mph		Signature:		
Make/Model:	AquaTroll 600		S/N:	262098	
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*:	242 @ 15°C		
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: 0830

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.04	s.u.	±0.1 s.u.	Pass	No	N/A
7a	7.06	s.u.	±0.1 s.u.			
10a	10.04	s.u.	±0.1 s.u.			
SC Zero (DI)	2.56	µS/cm	0<25 µS/cm			
SC 2000	2013.2	µS/cm	±5%			
ORP	235.7	mV	±15 mV			
DO (Zero pt)	0.08	mg/L	±0.1			
DO (Saturated)	98.22	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.05	s.u.	±0.15 s.u.	Pass	N/A
7b	6.96	s.u.	±0.15 s.u.		
10b	10.03	s.u.	±0.15 s.u.		
SC1000	991.52	µS/cm	±5%		

CCV (Continued Calibration Verification):

185

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.0	s.u.	±0.1 s.u.	Pass	No	N/A
7	7.09	s.u.	±0.1 s.u.			
10	10.02	s.u.	±0.1 s.u.			
SC 1000	1006.6	µS/cm	±5%			
DO (Zero pt)	0.07	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:

Date:

2/19/2022

Multiparameter Meter Field Calibration Checklist

Field Personnel	Mike Giovannine		Date:	2/9/2022	
Weather conditions:			Signature:	Mike Giovannine	
Make/Model	AquaTroll 600		S/N	739449	
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					
Value:	Sodium Sulfite in DI Water		ORP	Zobell's Standard	
Range:	+/- 0.01		Value*: 240.9	+/- 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:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	3.44	s.u.	±0.1 s.u.	P	N/C	/
7a	7.07	s.u.	±0.1 s.u.	P		/
10a	10.09	s.u.	±0.1 s.u.	P		/
SC Zero (DI)	6.49	µS/cm	0<25 µS/cm	P		/
SC 2000	1992.5	µS/cm	±5%	P		/
ORP	242.4	mV	±15 mV	P		/
DO (Zero pt)	0.07	mg/L	±0.1	P		/
DO (Saturated)	92.67	%	97-100%	F	100% Yes	100%
Turbidity (DI)	0.00	NTU	<2 NTU	P	No	/

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	3.44	s.u.	±0.15 s.u.	P	/
7b	6.46	s.u.	±0.15 s.u.	P	/
10b	9.93	s.u.	±0.15 s.u.	P	/
SC1000	1009.3	µS/cm	±5%	P	/

CCV (Continued Calibration Verification):

10:50

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.10	s.u.	±0.1 s.u.	P	No	/
7	7.15	s.u.	±0.1 s.u.	P	Yes	7.00
10	9.92	s.u.	±0.1 s.u.	P	No	/
SC 1000	1012.2	µS/cm	±5%	P	/	/
DO (Zero pt)	0.07	mg/L	±0.1 mg/L	P	/	/
Turbidity (DI)	0.00	NTU	<2 NTU	P	/	/

CCV (Continued Calibration Verification):

14:33

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.09	s.u.	±0.1 s.u.	P	No	/
7*	6.99	s.u.	±0.1 s.u.	P	/	/
10	9.91	s.u.	±0.1 s.u.	P	/	/
SC 1000	1016.6	µS/cm	±5%	P	/	/
DO (Zero pt)	0.07	mg/L	±0.1 mg/L	P	/	/
Turbidity (DI)	0.00	NTU	<2 NTU	P	/	/
Comments:						

Signature:



Date:

2/9/22



Pace Analytical Services, LLC

2231 W. Altorfer Drive

Peoria, IL 61615

(800)752-6651

March 31, 2022

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

Dear Eric Bauer:

Please find enclosed the **revised** 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.

Gail Schindler

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 FB01365

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
NO	Current PDC COC submitted
YES	Case narrative provided



Work Order FB01775

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
NO	Current PDC COC submitted
NO	Case narrative provided



Work Order FB02282

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
NO	Current PDC COC submitted
NO	Case narrative provided



ANALYTICAL RESULTS

Sample: FB01365-01

Name: G301

Alias: COF_257_101

Sampled: 02/08/22 16:24

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	15	mg/L	Q4	02/21/22 11:14	10	10	02/21/22 11:14	CRD	EPA 300.0 REV 2.1
Fluoride	0.347	mg/L		02/21/22 10:13	1	0.250	02/21/22 10:13	CRD	EPA 300.0 REV 2.1
Sulfate	620	mg/L	Q4	02/21/22 11:34	100	100	02/21/22 11:34	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.12	Feet		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Dissolved oxygen, Field	0.28	mg/L		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Oxidation Reduction Potential	-23.3	mV		02/08/22 16:24	1	-500	02/08/22 16:24	FIELD	Field
pH, Field Measured	6.48	pH Units		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Specific Conductance, Field Measured	1406	umhos/cm		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Temperature, Field Measured	12.6	°C		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Turbidity, Field Measured	2.88	NTU		02/08/22 16:24	1	0.00	02/08/22 16:24	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	150	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO ₃	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1100	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/14/22 12:51	5	3.0	02/15/22 15:54	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Barium	13	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Boron	2200	ug/L		02/14/22 12:51	5	10	02/16/22 10:46	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/16/22 10:46	JMW	EPA 6020A
Calcium	140	mg/L		02/14/22 12:51	5	0.20	02/16/22 10:46	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/14/22 12:51	5	4.0	02/16/22 10:46	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/14/22 12:51	5	2.0	02/16/22 10:46	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Magnesium	49	mg/L		02/14/22 12:51	5	0.10	02/17/22 12:03	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/14/22 12:51	5	0.20	02/15/22 15:54	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Potassium	1.4	mg/L		02/14/22 12:51	5	0.10	02/16/22 10:46	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Sodium	140	mg/L		02/14/22 12:51	5	0.10	02/16/22 10:46	JMW	EPA 6020A



ANALYTICAL RESULTS

Sample: FB01365-01

Name: G301

Alias: COF_257_101

Sampled: 02/08/22 16:24

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Lithium	< 20	ug/L		02/14/22 12:51	1	20	02/15/22 09:47	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01365-02

Name: G302

Alias: COF_257_101

Sampled: 02/08/22 16:41

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	15	mg/L		02/21/22 12:14	10	10	02/21/22 12:14	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/21/22 11:54	1	0.250	02/21/22 11:54	CRD	EPA 300.0 REV 2.1
Sulfate	410	mg/L		02/21/22 12:34	100	100	02/21/22 12:34	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	7.89	Feet		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Dissolved oxygen, Field	2.9	mg/L		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Oxidation Reduction Potential	-13.9	mV		02/08/22 16:41	1	-500	02/08/22 16:41	FIELD	Field
pH, Field Measured	6.73	pH Units		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Specific Conductance, Field Measured	1517	umhos/cm		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Temperature, Field Measured	11.8	°C		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Turbidity, Field Measured	3.46	NTU		02/08/22 16:41	1	0.00	02/08/22 16:41	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	450	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1100	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/14/22 12:51	5	3.0	02/15/22 15:58	JMW	EPA 6020A
Arsenic	1.2	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Barium	25	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Boron	2200	ug/L		02/14/22 12:51	5	10	02/16/22 11:11	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/16/22 11:11	JMW	EPA 6020A
Calcium	170	mg/L		02/14/22 12:51	5	0.20	02/16/22 11:11	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/14/22 12:51	5	4.0	02/16/22 11:11	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/14/22 12:51	5	2.0	02/16/22 11:11	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Magnesium	68	mg/L		02/14/22 12:51	5	0.10	02/17/22 12:07	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/14/22 12:51	5	0.20	02/15/22 15:58	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Potassium	0.68	mg/L		02/14/22 12:51	5	0.10	02/16/22 11:11	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Sodium	120	mg/L		02/14/22 12:51	5	0.10	02/15/22 15:58	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FB01365-02

Name: G302

Alias: COF_257_101

Sampled: 02/08/22 16:41

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Lithium	< 20	ug/L		02/14/22 12:51	1	20	02/15/22 09:50	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01365-03

Name: G303

Alias: COF_257_101

Sampled: 02/08/22 15:01

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	29	mg/L		02/21/22 13:55	10	10	02/21/22 13:55	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/21/22 13:35	1	0.250	02/21/22 13:35	CRD	EPA 300.0 REV 2.1
Sulfate	650	mg/L		02/21/22 14:15	100	100	02/21/22 14:15	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	3.99	Feet		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Dissolved oxygen, Field	2.2	mg/L		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Oxidation Reduction Potential	5.70	mV		02/08/22 15:01	1	-500	02/08/22 15:01	FIELD	Field
pH, Field Measured	6.79	pH Units		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Specific Conductance, Field Measured	2069	umhos/cm		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Temperature, Field Measured	11.7	°C		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Turbidity, Field Measured	3.45	NTU		02/08/22 15:01	1	0.00	02/08/22 15:01	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	590	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO ₃	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1500	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/14/22 12:51	5	3.0	02/15/22 16:01	JMW	EPA 6020A
Arsenic	1.6	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Barium	13	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Boron	2500	ug/L		02/14/22 12:51	5	10	02/16/22 11:15	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/16/22 11:15	JMW	EPA 6020A
Calcium	170	mg/L		02/14/22 12:51	5	0.20	02/16/22 11:15	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/14/22 12:51	5	4.0	02/16/22 11:15	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/14/22 12:51	5	2.0	02/16/22 11:15	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Magnesium	130	mg/L		02/14/22 12:51	5	0.10	02/17/22 12:10	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/14/22 12:51	5	0.20	02/15/22 16:01	JMW	EPA 6020A
Molybdenum	1.4	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Potassium	1.1	mg/L		02/14/22 12:51	5	0.10	02/16/22 11:15	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Sodium	180	mg/L		02/14/22 12:51	5	0.10	02/15/22 16:01	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FB01365-03

Name: G303

Alias: COF_257_101

Sampled: 02/08/22 15:01

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Lithium	20	ug/L		02/14/22 12:51	1	20	02/15/22 09:53	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01365-04

Name: G306

Alias: COF_257_101

Sampled: 02/08/22 13:57

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	1.3	mg/L		02/18/22 22:59	1	1.0	02/18/22 22:59	CRD	EPA 300.0 REV 2.1
Fluoride	0.270	mg/L		02/18/22 22:59	1	0.250	02/18/22 22:59	CRD	EPA 300.0 REV 2.1
Sulfate	200	mg/L		02/18/22 23:36	100	100	02/18/22 23:36	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.06	Feet		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Dissolved oxygen, Field	7.4	mg/L		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Oxidation Reduction Potential	11.6	mV		02/08/22 13:57	1	-500	02/08/22 13:57	FIELD	Field
pH, Field Measured	6.77	pH Units		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Specific Conductance, Field Measured	912.0	umhos/cm		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Temperature, Field Measured	12.0	°C		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Turbidity, Field Measured	1.29	NTU		02/08/22 13:57	1	0.00	02/08/22 13:57	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	310	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO ₃	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	640	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/14/22 12:51	5	3.0	02/15/22 16:16	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Barium	29	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Boron	3500	ug/L		02/14/22 12:51	5	10	02/16/22 11:18	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/16/22 11:18	JMW	EPA 6020A
Calcium	120	mg/L		02/14/22 12:51	5	0.20	02/16/22 11:18	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/14/22 12:51	5	4.0	02/16/22 11:18	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/14/22 12:51	5	2.0	02/16/22 11:18	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Magnesium	41	mg/L		02/14/22 12:51	5	0.10	02/17/22 12:14	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/14/22 12:51	5	0.20	02/15/22 16:16	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Potassium	0.27	mg/L		02/14/22 12:51	5	0.10	02/16/22 11:18	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Sodium	47	mg/L		02/14/22 12:51	5	0.10	02/16/22 11:18	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FB01365-04

Name: G306

Alias: COF_257_101

Sampled: 02/08/22 13:57

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Lithium	< 20	ug/L		02/14/22 12:51	1	20	02/15/22 09:55	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01365-05

Name: G281

Alias: COF_257_101

Sampled: 02/08/22 12:12

Received: 02/08/22 17:45

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	78	mg/L		02/09/22 22:27	10	10	02/09/22 22:27	CRD	EPA 300.0 REV 2.1
Fluoride	0.295	mg/L		02/09/22 22:09	1	0.250	02/09/22 22:09	CRD	EPA 300.0 REV 2.1
Sulfate	270	mg/L		02/09/22 22:45	50	50	02/09/22 22:45	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.21	Feet		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Dissolved oxygen, Field	2.5	mg/L		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Oxidation Reduction Potential	102	mV		02/08/22 12:12	1	-500	02/08/22 12:12	FIELD	Field
pH, Field Measured	7.00	pH Units		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Specific Conductance, Field Measured	1338	umhos/cm		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Temperature, Field Measured	10.6	°C		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Turbidity, Field Measured	6.69	NTU		02/08/22 12:12	1	0.00	02/08/22 12:12	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	340	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO ₃	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	910	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/10/22 09:21	5	3.0	02/11/22 12:12	KMC	EPA 6020A
Arsenic	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Barium	65	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Beryllium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Boron	< 10	ug/L		02/10/22 09:21	5	10	02/11/22 12:12	WJM	EPA 6020A
Cadmium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Calcium	130	mg/L		02/10/22 09:21	5	0.20	02/11/22 12:12	KMC	EPA 6020A
Chromium	< 4.0	ug/L		02/10/22 09:21	5	4.0	02/11/22 12:12	KMC	EPA 6020A
Cobalt	< 2.0	ug/L		02/10/22 09:21	5	2.0	02/11/22 12:12	KMC	EPA 6020A
Lead	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Magnesium	60	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:12	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/10/22 09:21	5	0.20	02/11/22 12:12	KMC	EPA 6020A
Molybdenum	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Potassium	0.51	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:12	KMC	EPA 6020A
Selenium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Sodium	89	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:12	KMC	EPA 6020A



ANALYTICAL RESULTS

Sample: FB01365-05
Name: G281
Alias: COF_257_101

Sampled: 02/08/22 12:12
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Lithium	< 20	ug/L		02/10/22 09:21	1	20	02/15/22 10:06	TJJ	EPA 6010B

Sample: FB01775-01
Name: FIELD BLANK
Matrix: DI Water - Field Blank

Sampled: 02/09/22 16:25
Received: 02/09/22 16:30

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Anions - PIA

Chloride	< 1.0	mg/L		02/25/22 12:39	1	1.0	02/25/22 12:39	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/25/22 12:39	1	0.250	02/25/22 12:39	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/25/22 12:39	1	1.0	02/25/22 12:39	CRD	EPA 300.0 REV 2.1

General Chemistry - PIA

Alkalinity - bicarbonate as CaCO3	< 2.0	mg/L		02/15/22 08:14	1	2.0	02/15/22 08:14	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 2.0	mg/L		02/15/22 08:14	1	2.0	02/15/22 08:14	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	< 17	mg/L		02/11/22 15:13	1	17	02/11/22 16:21	ADM	SM 2540C

Total Metals - PIA

Antimony	< 3.0	ug/L		02/15/22 07:51	5	3.0	02/17/22 15:13	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Barium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Boron	76	ug/L		02/15/22 07:51	5	10	02/18/22 12:39	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Calcium	< 0.20	mg/L		02/15/22 07:51	5	0.20	02/17/22 15:39	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/15/22 07:51	5	4.0	02/17/22 15:39	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/15/22 07:51	5	2.0	02/17/22 15:39	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Magnesium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/18/22 12:39	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/15/22 07:51	5	0.20	02/17/22 15:39	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Potassium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/17/22 15:39	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Sodium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/18/22 12:39	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:13	JMW	EPA 6020A
Lithium	< 20	ug/L		02/15/22 07:51	1	20	02/15/22 11:41	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB01775-02

Name: EQUIPMENT BLANK

Matrix: DI Water - Equipment Blank

Sampled: 02/09/22 16:25

Received: 02/09/22 16:30

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 1.0	mg/L		02/25/22 12:57	1	1.0	02/25/22 12:57	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/25/22 12:57	1	0.250	02/25/22 12:57	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/25/22 12:57	1	1.0	02/25/22 12:57	CRD	EPA 300.0 REV 2.1
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	< 2.0	mg/L		02/15/22 08:14	1	2.0	02/15/22 08:14	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO ₃	< 2.0	mg/L		02/15/22 08:14	1	2.0	02/15/22 08:14	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	< 17	mg/L		02/14/22 14:37	1	17	02/14/22 15:44	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/15/22 07:51	5	3.0	02/17/22 15:17	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Barium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Boron	78	ug/L		02/15/22 07:51	5	10	02/18/22 12:43	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Calcium	< 0.20	mg/L		02/15/22 07:51	5	0.20	02/17/22 15:42	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/15/22 07:51	5	4.0	02/17/22 15:42	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/15/22 07:51	5	2.0	02/17/22 15:42	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Magnesium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/18/22 12:43	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/15/22 07:51	5	0.20	02/17/22 15:42	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Potassium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/17/22 15:42	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Sodium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/18/22 12:43	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:17	JMW	EPA 6020A
Lithium	< 20	ug/L		02/15/22 07:51	1	20	02/15/22 11:50	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FB02282-01

Name: G307

Alias: COF_257_101

Sampled: 02/11/22 11:48

Received: 02/11/22 13:18

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	16	mg/L		02/28/22 18:01	10	10	02/28/22 18:01	CRD	EPA 300.0 REV 2.1
Fluoride	0.431	mg/L		02/28/22 17:41	1	0.250	02/28/22 17:41	CRD	EPA 300.0 REV 2.1
Sulfate	780	mg/L		02/28/22 18:22	250	250	02/28/22 18:22	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	0	Feet		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Dissolved oxygen, Field	5.3	mg/L		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Oxidation Reduction Potential	144	mV		02/11/22 11:48	1	-500	02/11/22 11:48	FIELD	Field
pH, Field Measured	7.28	pH Units		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Specific Conductance, Field Measured	1633	umhos/cm		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Temperature, Field Measured	9.1	°C		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Turbidity, Field Measured	12.2	NTU		02/11/22 11:48	1	0.00	02/11/22 11:48	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	120	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO ₃	< 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		02/16/22 12:37	1	26	02/16/22 14:44	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 09:54	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Barium	21	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Boron	2000	ug/L		02/17/22 08:20	5	10	02/21/22 09:54	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Calcium	190	mg/L		02/17/22 08:20	5	0.20	02/21/22 09:54	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 09:54	JMW	EPA 6020A
Cobalt	2.5	ug/L		02/17/22 08:20	5	2.0	02/21/22 09:54	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Magnesium	65	mg/L		02/17/22 08:20	5	0.10	02/21/22 09:54	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 09:54	JMW	EPA 6020A
Molybdenum	1.2	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Potassium	4.2	mg/L		02/17/22 08:20	5	0.10	02/21/22 09:54	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Sodium	97	mg/L		02/17/22 08:20	5	0.22	02/21/22 09:54	JMW	EPA 6020A



Pace Analytical Services, LLC

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ANALYTICAL RESULTS

Sample: FB02282-01

Name: G307

Alias: COF_257_101

Sampled: 02/11/22 11:48

Received: 02/11/22 13:18

Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Lithium	< 20	ug/L		02/17/22 08:20	1	20	02/18/22 10:27	TJJ	EPA 6010B



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B224022 - SW 3015 - EPA 6020A**Blank (B224022-BLK1)**

Prepared: 02/10/22 Analyzed: 02/11/22

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 (B224022-BS1)

Prepared: 02/10/22 Analyzed: 02/11/22

Antimony	547	ug/L	555.6	98	80-120
Arsenic	523	ug/L	555.6	94	80-120
Barium	542	ug/L	555.6	98	80-120
Beryllium	535	ug/L	555.6	96	80-120
Boron	517	ug/L	555.6	93	80-120
Cadmium	528	ug/L	555.6	95	80-120
Calcium	5.80	mg/L	5.556	104	80-120
Chromium	545	ug/L	555.6	98	80-120
Cobalt	545	ug/L	555.6	98	80-120
Lead	540	ug/L	555.6	97	80-120
Magnesium	6.07	mg/L	5.556	109	80-120
Mercury	51.4	ug/L	55.56	93	80-120
Molybdenum	504	ug/L	555.6	91	80-120
Potassium	5.84	mg/L	5.556	105	80-120
Selenium	535	ug/L	555.6	96	80-120
Sodium	6.02	mg/L	5.556	108	80-120
Thallium	539	ug/L	555.6	97	80-120
Lithium	526	ug/L	555.6	95	80-120

Batch B224043 - IC No Prep - EPA 300.0 REV 2.1**Calibration Blank (B224043-CCB1)**

Prepared & Analyzed: 02/09/22

Fluoride	0.00	mg/L
Chloride	0.469	mg/L



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B224043 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B224043-CCB1)				Prepared & Analyzed: 02/09/22					
Sulfate	0.0350	mg/L							
Calibration Check (B224043-CCV1)				Prepared & Analyzed: 02/09/22					
Fluoride	4.85	mg/L		5.000		97	90-110		
Sulfate	4.67	mg/L		5.000		93	90-110		
Chloride	4.58	mg/L		5.000		92	90-110		
<u>Batch B224051 - No Prep - SM 2540C</u>									
Blank (B224051-BLK1)				Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224051-BS1)				Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	960	mg/L		1000		96	84.9-109		
Duplicate (B224051-DUP1)				Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	1110	mg/L			1070			4	5
Duplicate (B224051-DUP2)				Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	1560	mg/L			1520			3	5
<u>Batch B224238 - No Prep - SM 2540C</u>									
Blank (B224238-BLK1)				Prepared & Analyzed: 02/11/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224238-BS1)				Prepared & Analyzed: 02/11/22					
Solids - total dissolved solids (TDS)	900	mg/L		1000		90	84.9-109		
<u>Batch B224335 - SW 3015 - EPA 6020A</u>									
Blank (B224335-BLK1)				Prepared: 02/14/22 Analyzed: 02/15/22					
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 (B224335-BS1)				Prepared: 02/14/22 Analyzed: 02/15/22					
Antimony	552	ug/L		555.6		99	80-120		



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B224335 - SW 3015 - EPA 6020A</u>									
LCS (B224335-BS1)				Prepared: 02/14/22 Analyzed: 02/15/22					
Arsenic	527	ug/L		555.6		95	80-120		
Barium	547	ug/L		555.6		98	80-120		
Beryllium	542	ug/L		555.6		98	80-120		
Boron	568	ug/L		555.6		102	80-120		
Cadmium	542	ug/L		555.6		98	80-120		
Calcium	6.56	mg/L		5.556		118	80-120		
Chromium	581	ug/L		555.6		105	80-120		
Cobalt	558	ug/L		555.6		100	80-120		
Lead	585	ug/L		555.6		105	80-120		
Magnesium	6.23	mg/L		5.556		112	80-120		
Mercury	56.0	ug/L		55.56		101	80-120		
Molybdenum	536	ug/L		555.6		97	80-120		
Potassium	6.22	mg/L		5.556		112	80-120		
Selenium	555	ug/L		555.6		100	80-120		
Sodium	6.53	mg/L		5.556		118	80-120		
Thallium	562	ug/L		555.6		101	80-120		
Lithium	511	ug/L		555.6		92	80-120		
<u>Batch B224361 - No Prep - SM 2540C</u>									
Blank (B224361-BLK1)				Prepared & Analyzed: 02/14/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224361-BS1)				Prepared & Analyzed: 02/14/22					
Solids - total dissolved solids (TDS)	953	mg/L		1000		95	84.9-109		
<u>Batch B224401 - SW 3015 - EPA 6020A</u>									
Blank (B224401-BLK1)				Prepared: 02/15/22 Analyzed: 02/17/22					
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	0.101	mg/L	B						
Thallium	< 1.0	ug/L							
Lithium	< 20	ug/L							



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B224401 - SW 3015 - EPA 6020A</u>									
LCS (B224401-BS1)				Prepared: 02/15/22 Analyzed: 02/17/22					
Antimony	542	ug/L		555.6		97	80-120		
Arsenic	520	ug/L		555.6		94	80-120		
Barium	572	ug/L		555.6		103	80-120		
Beryllium	528	ug/L		555.6		95	80-120		
Boron	504	ug/L		555.6		91	80-120		
Cadmium	534	ug/L		555.6		96	80-120		
Calcium	6.37	mg/L		5.556		115	80-120		
Chromium	564	ug/L		555.6		101	80-120		
Cobalt	550	ug/L		555.6		99	80-120		
Lead	565	ug/L		555.6		102	80-120		
Magnesium	6.25	mg/L		5.556		112	80-120		
Mercury	53.1	ug/L		55.56		96	80-120		
Molybdenum	513	ug/L		555.6		92	80-120		
Potassium	6.60	mg/L		5.556		119	80-120		
Selenium	537	ug/L		555.6		97	80-120		
Sodium	6.49	mg/L		5.556		117	80-120		
Thallium	557	ug/L		555.6		100	80-120		
Lithium	519	ug/L		555.6		93	80-120		
<u>Batch B224603 - No Prep - SM 2540C</u>									
Blank (B224603-BLK1)				Prepared & Analyzed: 02/16/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224603-BS1)				Prepared & Analyzed: 02/16/22					
Solids - total dissolved solids (TDS)	907	mg/L		1000		91	84.9-109		
<u>Batch B224606 - No Prep - SM 2320B 1997</u>									
Blank (B224606-BLK1)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO ₃	2.50	mg/L							
Blank (B224606-BLK2)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO ₃	2.50	mg/L							
Blank (B224606-BLK3)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO ₃	2.50	mg/L							
<u>Batch B224607 - No Prep - SM 2320B 1997</u>									
Blank (B224607-BLK1)				Prepared & Analyzed: 02/15/22					
Alkalinity - carbonate as CaCO ₃	< 2.0	mg/L							
Blank (B224607-BLK2)				Prepared & Analyzed: 02/15/22					
Alkalinity - carbonate as CaCO ₃	< 2.0	mg/L							
<u>Batch B224612 - No Prep - SM 2320B 1997</u>									
Blank (B224612-BLK1)				Prepared: 02/16/22 Analyzed: 02/15/22					
Alkalinity - carbonate as CaCO ₃	< 2.0	mg/L							
<u>Batch B224613 - No Prep - SM 2320B 1997</u>									



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B224613 - No Prep - SM 2320B 1997</u>									
Blank (B224613-BLK1)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO ₃	< 2.0	mg/L							
<u>Batch B224681 - SW 3015 - EPA 6020A</u>									
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		
<u>Batch B224912 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B224912-CCB1)				Prepared & Analyzed: 02/18/22					



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B224912 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B224912-CCB1)				Prepared & Analyzed: 02/18/22					
Fluoride	0.00	mg/L							
Sulfate	0.00	mg/L							
Chloride	0.572	mg/L							
Calibration Check (B224912-CCV1)				Prepared & Analyzed: 02/18/22					
Chloride	4.84	mg/L		5.000		97	90-110		
Sulfate	4.85	mg/L		5.000		97	90-110		
Fluoride	5.18	mg/L		5.000		104	90-110		
<u>Batch B225087 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B225087-CCB1)				Prepared & Analyzed: 02/21/22					
Chloride	0.514	mg/L							
Fluoride	0.00	mg/L							
Sulfate	0.0413	mg/L							
Calibration Check (B225087-CCV1)				Prepared & Analyzed: 02/21/22					
Fluoride	4.86	mg/L		5.000		97	90-110		
Sulfate	4.78	mg/L		5.000		96	90-110		
Chloride	4.67	mg/L		5.000		93	90-110		
Matrix Spike (B225087-MS1)				Sample: FB01365-01		Prepared & Analyzed: 02/21/22			
Fluoride	1.55	mg/L		1.500	0.347	80	80-120		
Chloride	1.0E9	mg/L	Q4	1.500	15	NR	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	620	NR	80-120		
Matrix Spike Dup (B225087-MSD1)				Sample: FB01365-01		Prepared & Analyzed: 02/21/22			
Chloride	1.0E9	mg/L	Q4	1.500	15	NR	80-120	0	20
Sulfate	1.00E9	mg/L	Q4	1.500	620	NR	80-120	0	20
Fluoride	1.49	mg/L		1.500	0.347	76	80-120	4	20
<u>Batch B225239 - No Prep - SM 2320B 1997</u>									
Blank (B225239-BLK1)				Prepared & Analyzed: 02/22/22					
Alkalinity - carbonate as CaCO ₃	< 2.0	mg/L							
<u>Batch B225240 - No Prep - SM 2320B 1997</u>									
Blank (B225240-BLK1)				Prepared & Analyzed: 02/22/22					
Alkalinity - bicarbonate as CaCO ₃	2.50	mg/L							
Blank (B225240-BLK2)				Prepared & Analyzed: 02/22/22					
Alkalinity - bicarbonate as CaCO ₃	5.00	mg/L							
<u>Batch B225525 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B225525-CCB1)				Prepared & Analyzed: 02/25/22					
Sulfate	0.00	mg/L							
Fluoride	0.00	mg/L							
Chloride	0.00	mg/L							
Calibration Check (B225525-CCV1)				Prepared & Analyzed: 02/25/22					
Sulfate	5.02	mg/L		5.000		100	90-110		
Chloride	4.93	mg/L		5.000		99	90-110		



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B225525 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Check (B225525-CCV1)				Prepared & Analyzed: 02/25/22					
Fluoride	4.81	mg/L		5.000		96	90-110		
<u>Batch B225681 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B225681-CCB1)				Prepared & Analyzed: 02/28/22					
Sulfate	0.0666	mg/L							
Chloride	0.612	mg/L							
Fluoride	0.00	mg/L							
Calibration Check (B225681-CCV1)				Prepared & Analyzed: 02/28/22					
Fluoride	4.73	mg/L		5.000		95	90-110		
Sulfate	4.98	mg/L		5.000		100	90-110		
Chloride	4.91	mg/L		5.000		98	90-110		



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

Revised Report - edited calibration forms

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

B Present in the method blank at 101 ug/L.

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



WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 Client: RAMBOLL
 Project Number: 2285 Task #: Unit 101 Start Date: 2/8/22 Time: 15:20
 Field Personnel: Tracy Carroll Tracy Carroll Finish Date: 2/8/22 Time: 16:24

WELL INFORMATION

Well ID: G301
 Casing ID: 2 Inches
 Screen Interval: 4.65'
 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/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Groundwater	<u>6.12</u>	<u>2/8/22 15:20</u>	<u>6.55</u>	<u>16:24</u>
DNAPL	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Casing Base	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ☒ Well Casing ☐ Borehole
 Volume Per Foot: _____ feet
 Standing Water Column: _____ 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+13 Heron

Water Quality Probe Type and Serial #: 47600 739450

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	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	<u>15:20</u>	<u>0</u>	<u>6.12</u>								
purge	<u>15:38</u>	<u>1000</u>	<u>6.55</u>	<u>0.43</u>	<u>13.06</u>	<u>6.51</u>	<u>1411.5</u>	<u>0.26</u>	<u>2.31</u>	<u>-29.9</u>	<u>Clear</u>
	<u>15:40</u>	<u>1200</u>	<u>6.55</u>	<u>0.43</u>	<u>12.66</u>	<u>6.49</u>	<u>1412.3</u>	<u>0.27</u>	<u>2.79</u>	<u>-28.3</u>	<u>Clear</u>
	<u>15:42</u>	<u>1400</u>	<u>6.55</u>	<u>0.43</u>	<u>12.56</u>	<u>6.49</u>	<u>1411.3</u>	<u>0.28</u>	<u>2.72</u>	<u>-25.5</u>	<u>Clear</u>
	<u>15:44</u>	<u>1600</u>	<u>6.55</u>	<u>0.43</u>	<u>12.57</u>	<u>6.48</u>	<u>1405.7</u>	<u>0.28</u>	<u>2.88</u>	<u>-23.3</u>	<u>Clear</u>

NOTES

ms/msd / DLP

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 Celsius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 Client: RAMBOLL
 Project Number: 2285 Task #: Unit 101 Start Date: 2/8/22 Time: 16:41
 Field Personnel: Luke Godwin Luke Shumard Finish Date: 2/8/22 Time: 16:41

WELL INFORMATION

Well ID: G302
 Casing ID: 2 Inches
 Screen Interval: 4.65'
 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/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	<u>7.89</u>	<u>15:54</u>	<u>8.18</u>	<u>16:41</u>
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: _____
 Standing Water Column: _____ 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 #: 19FF211192HB HECON Water Quality Probe Type and Serial #: AT400 739450

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	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	<u>15:54</u>	<u>0</u>	<u>7.89</u>								
purge	<u>16:06</u>	<u>800</u>	<u>8.15</u>	<u>0.26</u>	<u>11.79</u>	<u>6.73</u>	<u>1560.4</u>	<u>2.87</u>	<u>2.86</u>	<u>-18.0</u>	<u>clear</u>
	<u>16:08</u>	<u>1000</u>	<u>8.14</u>	<u>0.25</u>	<u>11.80</u>	<u>6.77</u>	<u>1527.6</u>	<u>2.85</u>	<u>3.50</u>	<u>-15.9</u>	<u>clear</u>
	<u>16:10</u>	<u>1200</u>	<u>8.15</u>	<u>0.26</u>	<u>11.77</u>	<u>6.73</u>	<u>1517.2</u>	<u>2.90</u>	<u>3.46</u>	<u>-13.9</u>	<u>clear</u>

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 Celsius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 Client: RAMBOLL
 Project Number: 2285 Task #: Unit 101 Start Date: 2/8/22 Time: 14:12
 Field Personnel: Luke Coffeen, John Rasmussen Finish Date: 2/8/22 Time: 15:01

WELL INFORMATION

EVENT TYPE

PURGE INFORMATION

Well ID: G303
 Casing ID: 2 Inches
 Screen Interval: 10'
 Borehole Diameter: n/a Inches
 Filter Pack Interval: n/a

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

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/min

DEPTH MEASUREMENTS

VOLUME CALCULATION AND PRODUCTION INFORMATION

	INITIAL		FINAL		Volume Calculation Type: ☒ Well Casing ☐ Borehole
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)	
LNAPL	n/a	n/a	n/a	n/a	Volume Per Foot: Standing Water Column: _____ feet 1 Well Volume: <u>n/a</u> Gallons 3 Well Volumes: <u>n/a</u> Gallons 5 Well Volumes: <u>n/a</u> Gallons 10 Well Volumes: <u>n/a</u> Gallons Total Volumes Produced: <u>n/a</u> Gallons Well Purged Dry? ☐ Yes ☒ No
Groundwater	<u>3.99</u>	<u>14:12</u>	<u>4.73</u>	<u>15:01</u>	
DNAPL	n/a	n/a	n/a	n/a	
Casing Base	n/a	n/a	n/a	n/a	

Water Level Serial #: 19EE21192HB Heron Water Quality Probe Type and Serial #: AT600 739450

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	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	<u>14:12</u>	<u>0</u>	<u>3.99</u>								
purge	<u>14:25</u>	<u>700</u>	<u>4.39</u>	<u>0.40</u>	<u>11.54</u>	<u>6.76</u>	<u>2103.5</u>	<u>2.07</u>	<u>3.77</u>	<u>86</u>	<u>clear</u>
	<u>14:27</u>	<u>900</u>	<u>4.45</u>	<u>0.46</u>	<u>11.82</u>	<u>6.78</u>	<u>2075.1</u>	<u>2.11</u>	<u>2.61</u>	<u>6.6</u>	<u>clear</u>
	<u>14:29</u>	<u>1100</u>	<u>4.53</u>	<u>0.54</u>	<u>11.70</u>	<u>6.79</u>	<u>2068.9</u>	<u>2.18</u>	<u>3.45</u>	<u>5.7</u>	<u>clear</u>

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 Celsius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 Client: RAMBOLL
 Project Number: 2285 Task #: Unit 101 Start Date: 2-8-22 Time: 1302
 Field Personnel: Tracy Carroll Danny Carroll Finish Date: 2/8/22 Time: 1357

WELL INFORMATION

Well ID: G306
 Casing ID: 2 Inches
 Screen Interval: _____
 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/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	<u>6.06</u>	<u>2/8/22 1352</u>	<u>6.88</u>	<u>2/8/22 1357</u>
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: _____ feet
 Standing Water Column: _____ 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 #: 19FP2111192HB HERON

Water Quality Probe Type and Serial #: Nova Troll 600 739450

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	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	<u>1302</u>	<u>0</u>	<u>6.06</u>								
purge	<u>1317</u>	<u>1500</u>	<u>6.82</u>	<u>0.76</u>	<u>12.14</u>	<u>6.78</u>	<u>903.78</u>	<u>7.38</u>	<u>1.84</u>	<u>9.3</u>	<u>Clear</u>
	<u>1319</u>	<u>1700</u>	<u>6.82</u>	<u>0.76</u>	<u>12.06</u>	<u>6.78</u>	<u>907.52</u>	<u>7.35</u>	<u>1.46</u>	<u>10.2</u>	<u>Clear</u>
	<u>1321</u>	<u>1900</u>	<u>6.81</u>	<u>0.75</u>	<u>11.98</u>	<u>6.78</u>	<u>910.29</u>	<u>7.34</u>	<u>1.38</u>	<u>11.1</u>	<u>Clear</u>
	<u>1322</u>	<u>2000</u>	<u>6.81</u>	<u>0.75</u>	<u>11.95</u>	<u>6.77</u>	<u>912.01</u>	<u>7.35</u>	<u>1.29</u>	<u>11.6</u>	<u>Clear</u>

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

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 Client: RAMBOLL
 Project Number: 2285 Task #: Unit 101 Start Date: 2/11/2022 Time: 1057
 Field Personnel: David J. Amberson Finish Date: 2/11/2022 Time: 1148

WELL INFORMATION

Well ID: G307
 Casing ID: 2 Inches
 Screen Interval: 10'
 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/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Groundwater	<u>0.80</u>	<u>1059</u>	<u>0.00</u>	<u>1148</u>
DNAPL	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Casing Base	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ☒ Well Casing ☐ Borehole
 Volume Per Foot: _____
 Standing Water Column: _____ 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 #: Heran Diggs - T H 4775-T Water Quality Probe Type and Serial #: AT600 #762098

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	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	<u>1059</u>	<u>0</u>	<u>0.00</u>	<u>0.00</u>	<u>—</u>	<u>7.28</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
purge	<u>1109</u>	<u>1000</u>	<u>0.00</u>	<u>0.00</u>	<u>9.14</u>	<u>7.29</u>	<u>1635.8</u>	<u>5.31</u>	<u>8.33</u>	<u>145.2</u>	<u>clear</u>
	<u>1111</u>	<u>1200</u>	<u>0.00</u>	<u>0.00</u>	<u>9.11</u>	<u>7.28</u>	<u>1634.3</u>	<u>5.33</u>	<u>8.35</u>	<u>144.1</u>	<u>clear</u>
	<u>1113</u>	<u>1400</u>	<u>0.00</u>	<u>0.00</u>	<u>9.12</u>	<u>7.28</u>	<u>1633.2</u>	<u>5.30</u>	<u>12.24</u>	<u>144.0</u>	<u>clear</u>

NOTES

Artesian well

ABBREVIATIONS

Cond. - Actual Conductivity
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 SU - Standard Units
 Temp - Temperature
 °C - Degrees Celsius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 Client: RAMBOLL
 Project Number: 2285 Task #: Unit 101, 102 Start Date: 2/8/22 Time: 1109
 Field Personnel: Mark Julien Finish Date: 2/8/22 Time: 1212

WELL INFORMATION

Well ID: G281
 Casing ID: 2 Inches
 Screen Interval: 4.65'
 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/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	<u>6.21</u>	<u>2/8/22/1109</u>	<u>6.24</u>	<u>2/8/22/1212</u>
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: _____ feet
 Standing Water Column: _____ 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 #: Aquatrol 600 #262215

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	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	<u>1109</u>	<u>0</u>	<u>6.21</u>	<u>0.00</u>							
purge	<u>1121</u>	<u>1200</u>	<u>6.24</u>	<u>0.03</u>	<u>10.53</u>	<u>7.01</u>	<u>1327.7</u>	<u>2.92</u>	<u>9.95</u>	<u>94.7</u>	<u>clear</u>
	<u>1123</u>	<u>1400</u>	<u>6.24</u>	<u>0.03</u>	<u>10.55</u>	<u>7.00</u>	<u>1337.6</u>	<u>2.72</u>	<u>9.55</u>	<u>96.1</u>	<u>clear</u>
	<u>1124</u>	<u>1600</u>	<u>6.24</u>	<u>0.03</u>	<u>10.53</u>	<u>7.00</u>	<u>1337.4</u>	<u>2.56</u>	<u>8.54</u>	<u>97.6</u>	<u>clear</u>
	<u>1127</u>	<u>1800</u>	<u>6.24</u>	<u>0.03</u>	<u>10.55</u>	<u>6.99</u>	<u>1337.9</u>	<u>2.42</u>	<u>7.50</u>	<u>98.9</u>	<u>clear</u>
	<u>1129</u>	<u>2000</u>	<u>6.24</u>	<u>0.03</u>	<u>10.58</u>	<u>6.99</u>	<u>1337.7</u>	<u>2.45</u>	<u>6.30</u>	<u>100.3</u>	<u>clear</u>
	<u>1131</u>	<u>2200</u>	<u>6.24</u>	<u>0.03</u>	<u>10.61</u>	<u>7.00</u>	<u>1337.8</u>	<u>2.52</u>	<u>6.69</u>	<u>101.5</u>	<u>clear</u>

NOTES

5 G281 3 CCR

ABBREVIATIONS

Cond. - Actual Conductivity
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Multiparameter Meter Field Calibration Checklist

Field Personnel	M J N		Date:	3/8/22	
Weather conditions:	21-46°, sunny, NE 6 mph wind		Signature:	<i>[Signature]</i>	
Make/Model	AquaTroll 600		S/N	8468000	
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: 0820

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.04	s.u.	±0.1 s.u.			
7a	7.05	s.u.	±0.1 s.u.			
10a	10.03	s.u.	±0.1 s.u.			
SC Zero (DI)	13.07	µS/cm	0<25 µS/cm			
SC 2000	2015	µS/cm	±5%			
ORP	242	mV	±15 mV			
DO (Zero pt)	0.03	mg/L	±0.1			
DO (Saturated)	95.47	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.04	s.u.	±0.15 s.u.		
7b	6.91	s.u.	±0.15 s.u.		
10b	10.05	s.u.	±0.15 s.u.		
SC1000	1007	µS/cm	±5%		

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			

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:



Date:

2/8/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Tracy Carroll		Date:	2/8/23	
Weather conditions:	25-43 Partly Cloudy 0-10 Above Cloudy		Signature:	Tracy Carroll	
Make/Model	AquaTroll 600		S/N	739450	
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 regimen (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 #:	K063-05	Lot #:	K134-08	Lot #:	J235-04
exp:	6/8/23	exp:	6/23/23	exp:	12/17/22
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:	LabChem	Manufacturer:	Geotech
Lot #:	OGD046	Lot #:	J214-24	Lot #:	OGC851
exp:	AUG/23	exp:	APR/23	exp:	MAY/23
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 #:	4002A08	Lot #:	OGA078
		exp:	DEC/22	exp:	APR/22
RDO					
Sodium Sulfite in DI Water		ORP		Zobell's Standard	
Value:	0	Value*:	245.9	10°C	
Range:	+/- 0.01	Range:		+/- 10 mV	
Manufacturer:	Fisher Chemical	Manufacturer:		In-Situ	
Lot #:	168261	Lot #:		OGC1145	
Prepared by:	PDC Tech Services, Inc.	exp:		AUG/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					

3/21/22
TC

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:					8:42	
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	3.93	s.u.	±0.1 s.u.	P	No	
7a	6.96	s.u.	±0.1 s.u.	P		
10a	10.03	s.u.	±0.1 s.u.	P		
SC Zero (DI)	22.35	µS/cm	0<25 µS/cm	P		
SC 2000	2018.0	µS/cm	±5%	P		
ORP @ 13	245.9	mV	±15 mV	P		
DO (Zero pt)	0.05	mg/L	±0.1	P		
DO (Saturated)	142.20	%	97-100%	F	Y	100
Turbidity (DI)	0.17	NTU	<2 NTU	P	No	

ICV (Initial Calibration Verification)					9:08	
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	
4b	3.93	s.u.	±0.15 s.u.	P		
7b	6.87	s.u.	±0.15 s.u.	P		
10b	9.94	s.u.	±0.15 s.u.	P		
SC1000	1033.0	µS/cm	±5%	P		

CCV (Continued Calibration Verification):					14:56	Approx. every 4 hrs, unless only one well
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.03	s.u.	±0.1 s.u.	P	N	NA
7	6.99	s.u.	±0.1 s.u.	P		
10	9.99	s.u.	±0.1 s.u.	P		
SC 1000	995.77	µS/cm	±5%	P		
DO (Zero pt)	0.09	mg/L	±0.1 mg/L	P		
Turbidity (DI)	0.83	NTU	<2 NTU	P		

CCV (Continued Calibration Verification):					16:48	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.	P	N	NA
7*	7.02	s.u.	±0.1 s.u.	P		
10	10.04	s.u.	±0.1 s.u.	P		
SC 1000	1009.0	µS/cm	±5%	P		
DO (Zero pt)	0.10	mg/L	±0.1 mg/L	P		
Turbidity (DI)	0.18	NTU	<2 NTU	P		
Comments:						

Signature:



Date:

2/8/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Horton / Kim Butler		Date:	2/18/2022	
Weather conditions:	30-45°F Sunny Wind 3-10 mph		Signature:		
Make/Model	AquaTroll 600		S/N	762098	
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*:	242 @ 15°C		
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: 0848

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.03	s.u.	±0.1 s.u.	pass	NO	N/A
7a	7.06	s.u.	±0.1 s.u.			
10a	10.05	s.u.	±0.1 s.u.			
SC Zero (DI)	6.27	µS/cm	0<25 µS/cm			
SC 2000	1092.7	µS/cm	±5%			
ORP	235.6	mV	±15 mV			
DO (Zero pt)	0.08	mg/L	±0.1			
DO (Saturated)	92.23	%	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.	pass	N/A
7b	6.96	s.u.	±0.15 s.u.		
10b	10.00	s.u.	±0.15 s.u.		
SC1000	991.00	µS/cm	±5%		

CCV (Continued Calibration Verification): 1520

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.05	s.u.	±0.1 s.u.	pass	NO	N/A
7	7.00	s.u.	±0.1 s.u.			
10	10.06	s.u.	±0.1 s.u.			
SC 1000	1013.1	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:



Date:

2/8/2022

Multiparameter Meter Field Calibration Checklist

Field Personnel	Sam Grant		Date:	2/11/22	
Weather conditions:	32-38°F, showers, wind SW 0-10 mph		Signature:	<i>[Signature]</i>	
Make/Model	AquaTroll 600		S/N	739449	
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 #:	K063-05	Lot #:	K134-08	Lot #:	J235-04
exp:	6/8/23	exp:	6/25/23	exp:	12/17/23
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:	LabChem	Manufacturer:	Geotech
Lot #:	OGD046	Lot #:	J214-24	Lot #:	OGC851
exp:	Aug/23	exp:	Apr/23	exp:	May/23
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 #:	4002A08	Lot #:	OGA078
		exp:	Dec/22	exp:	Apr/22
RDO					
Sodium Sulfite in DI Water		ORP		Zobell's Standard	
Value:	0	Value*:	242 mV @ 18°C		
Range:	+/- 0.01	Range:	+/- 10 mV		
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ		
Lot #:	168261	Lot #:	OGC1145		
Prepared by:	PDC Tech Services, Inc:	exp:	Aug/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					

3/21/22
TC

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:					08:46	
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.00	s.u.	±0.1 s.u.	Pass	No	NA
7a	7.04	s.u.	±0.1 s.u.			
10a	10.03	s.u.	±0.1 s.u.			
SC Zero (DI)	12.58	µS/cm	0<25 µS/cm			
SC 2000	1998.4	µS/cm	±5%			
ORP	240.7 @ 13.6 mV	mV	±15 mV			
DO (Zero pt)	0.06	mg/L	±0.1			
DO (Saturated)	97.1%	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification)					08:50	
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	
4b	3.99	s.u.	±0.15 s.u.	Pass	None	
7b	6.97	s.u.	±0.15 s.u.			
10b	9.93	s.u.	±0.15 s.u.			
SC1000	1012.8	µS/cm	±5%			

CCV (Continued Calibration Verification):					12:00	
					Approx. every 4 hrs, unless only one well	
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.09	s.u.	±0.1 s.u.	Pass	No	NA
7	7.10	s.u.	±0.1 s.u.			
10	10.07	s.u.	±0.1 s.u.			
SC 1000	971.43	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:						

Signature:



Date:

2/11/22

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Tracy Carroll</u>	Date: <u>2/11/22</u>		
Weather conditions: <u>32-38 Showers 0-10 mph SW</u>	Signature: <u>Tracy Carroll</u>		
Make/Model: <u>AquaTroll 600</u>	S/N: <u>739450</u>		
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
Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	K063-05	Lot #:	K134-08
exp:	<u>6/8/23</u>	exp:	<u>6/23/23</u>
Secondary Source:			
pH: 4b	4.00	pH: 7b	7.00
Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	LabChem
Lot #:	OGD046	Lot #:	J214-24
exp:	<u>AUG/23</u>	exp:	<u>APR/23</u>
Spec Con.			
µS/cm: DI water	0	µS/cm: SC1000	1000
Range:	Not Measured	Range:	+/- 1
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical
Received:		Lot #:	4002A08
		exp:	<u>DEC/22</u>
		µS/cm: SC2000	2000
		Range:	+/- 1 %
		Manufacturer:	Geotech
		Lot #:	OGA078
		exp:	<u>APR/22</u>
RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*: <u>236.8</u>	<u>(at 14°C)</u>
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	OGC1145
Prepared by:	PDC Tech Services, Inc:	exp:	<u>AUG/22</u>
Turbidity (if required)			
0 NTU	0 (DI Water)	1 NTU	1
Range:	Not Measured	Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	
Lot #:	NA	Lot #:	
exp:	NA	exp:	
Notes: *See bottle for chart of values based on Temperature			

3/21/22
TC

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:

8:26

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	3.91	s.u.	±0.1 s.u.	P	N	NA
7a	6.92	s.u.	±0.1 s.u.	P		
10a	10.00	s.u.	±0.1 s.u.	P		
SC Zero (DI)	13.16	µS/cm	0<25 µS/cm	P		
SC 2000	2064.7	µS/cm	±5%	P		
ORP 14°C	236.8	mV	±15 mV	P		
DO (Zero pt)	0.10	mg/L	±0.1	P		
DO (Saturated)	113.17	%	97-100%	P		100.00
Turbidity (DI)	0.20	NTU	<2 NTU	P		NA

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.11	s.u.	±0.15 s.u.	P	NA
7b	6.95	s.u.	±0.15 s.u.	P	
10b	9.89	s.u.	±0.15 s.u.	P	
SC1000	1034.4	µS/cm	±5%	P	

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

12:12

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.06	s.u.	±0.1 s.u.	P	N	NA
7	7.04	s.u.	±0.1 s.u.	P		
10	10.10	s.u.	±0.1 s.u.	P		
SC 1000	1015.5	µS/cm	±5%	P		
DO (Zero pt)	0.03	mg/L	±0.1 mg/L	P		
Turbidity (DI)	0.20	NTU	<2 NTU	P		

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:

Juan Carlos

Date:

2/11/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Aaron Femberger		Date:	2/11/2022	
Weather conditions:	39-45°F, cloudy rain w/ wind gusts 15 mph		Signature:		
Make/Model	AquaTroll 600		S/N	762028	
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*:	242 @ 15°C		
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: 0840

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.05	s.u.	±0.1 s.u.	pass	NO	N/A
7a	7.06	s.u.	±0.1 s.u.			
10a	10.03	s.u.	±0.1 s.u.			
SC Zero (DI)	6.57	µS/cm	0<25 µS/cm			
SC 2000	2007.8	µS/cm	±5%			
ORP	235.8	mV	±15 mV			
DO (Zero pt)	0.07	mg/L	±0.1			
DO (Saturated)	92.28	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.05	s.u.	±0.15 s.u.	pass	N/A
7b	6.97	s.u.	±0.15 s.u.		
10b	10.04	s.u.	±0.15 s.u.		
SC1000	977.64	µS/cm	±5%		

CCV (Continued Calibration Verification): 1153

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.04	s.u.	±0.1 s.u.	pass	NO	N/A
7	7.08	s.u.	±0.1 s.u.			
10	10.06	s.u.	±0.1 s.u.			
SC 1000	986.38	µS/cm	±5%			
DO (Zero pt)	0.08	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:

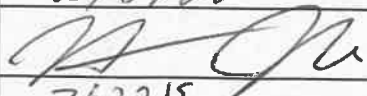
Signature:

Date:



2/11/2022

Multiparameter Meter Field Calibration Checklist

Field Personnel	Matt Julion		Date:	2/18/22	
Weather conditions:	54°-57°F P. Cloudy wind 10-20 mph SW		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:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.00	s.u.	±0.1 s.u.	Pass	No	NA
7a	7.04	s.u.	±0.1 s.u.	↓	↓	↓
10a	10.06	s.u.	±0.1 s.u.	↓	↓	↓
SC Zero (DI)	23.51	µS/cm	0<25 µS/cm	↓	↓	↓
SC 2000	2004.7	µS/cm	±5%	↓	↓	↓
ORP	243.2 @ 15°C	mV	±15 mV	↓	↓	↓
DO (Zero pt)	0.03	mg/L	±0.1	↓	↓	↓
DO (Saturated)	99.72	%	97-100%	↓	↓	↓
Turbidity (DI)	0.92	NTU	<2 NTU	↓	↓	↓

ICV (Initial Calibration Verification)

1054

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.09	s.u.	±0.15 s.u.	Pass	None
7b	6.91	s.u.	±0.15 s.u.	↓	↓
10b	9.98	s.u.	±0.15 s.u.	↓	↓
SC1000	986.0	µS/cm	±5%	↓	↓

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.05	s.u.	±0.1 s.u.	Pass	No	NA
7	7.07	s.u.	±0.1 s.u.	↓	↓	↓
10	10.09	s.u.	±0.1 s.u.	↓	↓	↓
SC 1000	991.32	µS/cm	±5%	↓	↓	↓
DO (Zero pt)	0.08	mg/L	±0.1 mg/L	↓	↓	↓
Turbidity (DI)	1.02	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:



Date:

2/18/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Matt Jy Uen		Date:	2/11/22	
Weather conditions:	32°-38°F showers wind 0-10 mph SW		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 #:	OGJ268	Lot #:	OGJ170
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					
Value:	Sodium Sulfite in DI Water		ORP		Zobell's Standard
Range:	+/- 0.01		Value*:		
Manufacturer:	Fisher Chemical		Range:		+/- 10 mV
Lot #:	168261		Manufacturer:		In-Situ
Prepared by:	PDC Tech Services, Inc:		Lot #:		1GF668
			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: *0853*

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	<i>4.02</i>	s.u.	±0.1 s.u.	<i>PASS</i>	<i>NO</i>	<i>N/A</i>
7a	<i>7.06</i>	s.u.	±0.1 s.u.	<i>↓</i>	<i>↓</i>	<i>↓</i>
10a	<i>10.08</i>	s.u.	±0.1 s.u.	<i>↓</i>	<i>↓</i>	<i>↓</i>
SC Zero (DI)	<i>10.81</i>	µS/cm	0<25 µS/cm	<i>↓</i>	<i>↓</i>	<i>↓</i>
SC 2000	<i>2015.1</i>	µS/cm	±5%	<i>↓</i>	<i>↓</i>	<i>↓</i>
ORP	<i>235.9 @ 15</i>	mV	±15 mV	<i>↓</i>	<i>↓</i>	<i>↓</i>
DO (Zero pt)	<i>0.04</i>	mg/L	±0.1	<i>↓</i>	<i>↓</i>	<i>↓</i>
DO (Saturated)	<i>98.74</i>	%	97-100%	<i>↓</i>	<i>↓</i>	<i>↓</i>
Turbidity (DI)	<i>0.99</i>	NTU	<2 NTU	<i>↓</i>	<i>↓</i>	<i>↓</i>

ICV (Initial Calibration Verification) *0858*

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	<i>4.13</i>	s.u.	±0.15 s.u.	<i>PASS</i>	<i>None</i>
7b	<i>6.88</i>	s.u.	±0.15 s.u.	<i>↓</i>	<i>↓</i>
10b	<i>9.93</i>	s.u.	±0.15 s.u.	<i>↓</i>	<i>↓</i>
SC1000	<i>974.31</i>	µS/cm	±5%	<i>↓</i>	<i>↓</i>

CCV (Continued Calibration Verification): *1215*

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	<i>4.07</i>	s.u.	±0.1 s.u.	<i>PASS</i>	<i>NO</i>	<i>NA</i>
7	<i>7.09</i>	s.u.	±0.1 s.u.	<i>↓</i>	<i>↓</i>	<i>↓</i>
10	<i>10.03</i>	s.u.	±0.1 s.u.	<i>↓</i>	<i>↓</i>	<i>↓</i>
SC 1000	<i>998.31</i>	µS/cm	±5%	<i>↓</i>	<i>↓</i>	<i>↓</i>
DO (Zero pt)	<i>0.03</i>	mg/L	±0.1 mg/L	<i>↓</i>	<i>↓</i>	<i>↓</i>
Turbidity (DI)	<i>0.87</i>	NTU	<2 NTU	<i>↓</i>	<i>↓</i>	<i>↓</i>

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:						

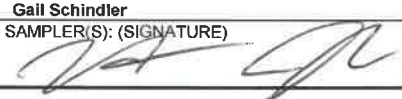
Signature: *[Signature]*

Date: *2/11/22*

RAMBOLL
234 W. FLORIDA STREET, 5th FLOOR
MILWAUKEE, WI 53204
TEL: 414.837.3607

RAMBOLL - MILWAUKEE
NRT COFFEEN CCR ASH 1

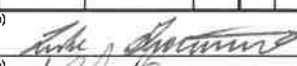
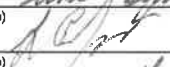
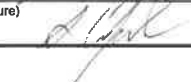
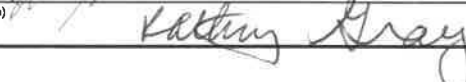
CHAIN OF CUSTODY # 1
DATE: 2/8/22
PAGE: 1 OF 1

LABORATORY SAMPLES SUBMITTED TO: Pace Analytical Services				CLIENT PROJECT NAME Coffeen Ash Pond 1		PROJECT NUMBER / TASK NUMBER: 2285 / Unit 101	
ADDRESS: 2231 W Altorfer Drive				PROJECT CONTACT: Gail Schindler		QUOTE NO.:	
CITY: Peoria, IL 61615				SAMPLER(S): (SIGNATURE) 			
TEL: 309-683-1716		FAX: 309-692-9689		E-MAIL gschindler@pdclab.com			
TURNAROUND TIME ☐ STANDARD ☐ 24 HR ☐ 48 HR ☒ 2 HR ☒ 5 DAYS				REQUESTED ANALYSIS			

Data Package: Level 2 Level 4
Preservatives: A = none, B = HCL, C = H₂SO₄,
D = HNO₃, E = methanol, F = Sodium Bisulfate,
G = zinc acetate, H = other
Preservation Code (pick letter)
Filtered (Yor N)

SPECIAL REQUIREMENTS

LAB USE ONLY	SAMPLE ID	QC SAMPLE	FIELD COMMENTS	SAMPLE		MATRIX	SAMPLE TYPE	SAMPLE INTERVAL (R)		#Corr	Cd	F	Al	As	Ca	Co	K	Li	Na	Pb	S	Se	Si	Tl	V	Zn
				DATE	TIME			TOP	BOTTOM																	
	G301		MS/MSD/Dup	2/8/22	1624	GW	Grab			4	—	—	—	—	—	—	—	—	—							
	G302			2/8/22	1641	GW	Grab			3	—	—	—	—	—	—	—	—	—							
	G303			2/8/22	1501	GW	Grab			3	—	—	—	—	—	—	—	—	—							
	G306			2/8/22	1357	GW	Grab			3	—	—	—	—	—	—	—	—	—							
	G281			2/8/22	1212	GW	Grab			3	—	—	—	—	—	—	—	—	—							

Relinquished by: (Signature) 	Received by: (Signature) 	Date: <u>2/8/22</u>	Time: <u>17:45</u>
Relinquished by: (Signature) 	Received by: (Signature) 	Date: <u>2/8/22</u>	Time: <u>19:30</u>
Relinquished by: (Signature) 	Received by: (Signature) 	Date: <u>02/09/22</u>	Time: <u>1445</u>

6.2°C

PAGE: 1 OF 1

2/10/22	1430	Kathy Gray	14:30	02/10/22	2.6°C
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RAMBOLL
234 W. FLORIDA STREET, 5th FLOOR
MILWAUKEE, WI 53204
TEL: 414.837.3607

RAMBOLL - MILWAUKEE
NRT COFFEEN CCR ASH 1

FB07282-01 KEG

CHAIN OF CUSTODY # 1
DATE: 2/11/22
PAGE: 1 OF 1

[illegible]

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PDC Laboratory, Inc.

Sample Delivery Group: L1461490
Samples Received: 02/14/2022
Project Number: FB01360
Description:

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

Entire Report Reviewed By:



Mark W. Beasley
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

FB01360-01 L1461490-01 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 13:50 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

FB01360-02 L1461490-02 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 12:22 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-03 L1461490-03 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 11:05 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-04 L1461490-04 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 12:12 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-05 L1461490-05 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 09:46 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 15:05	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-06 L1461490-06 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 10:43 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

SAMPLE SUMMARY

FB01360-07 L1461490-07 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 12:02 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

FB01360-08 L1461490-08 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 15:56 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-09 L1461490-09 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 14:30 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-10 L1461490-10 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 13:21 02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-11 L1461490-11 Non-Potable Water

Collected by
Collected date/time
Received date/time

02/08/22 15:38 02/14/22 09:30

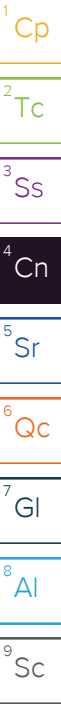
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	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	-0.203	U	0.331	0.632	02/22/2022 14:50	WG1817742
(T) Barium	103			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	104			79.0-136	02/22/2022 14:50	WG1817742

1
Cp

2
Tc

3
Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.000	U	0.365	0.709	02/23/2022 22:28	WG1819523

4
Cn

5
Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.0399	U	0.154	0.321	02/23/2022 22:28	WG1819523
(T) Barium-133	92.5			30.0-143	02/23/2022 22:28	WG1819523

6
Qc

7
Gl

8
Al

9
Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.715		0.309	0.555	02/22/2022 14:50	WG1817742
(T) Barium	95.7			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	94.7			79.0-136	02/22/2022 14:50	WG1817742

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.913		0.358	0.583	02/23/2022 22:28	WG1819523

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.198		0.181	0.178	02/23/2022 22:28	WG1819523
(T) Barium-133	93.1			30.0-143	02/23/2022 22:28	WG1819523

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.0952	U	0.297	0.563	02/22/2022 14:50	WG1817742
(T) Barium	95.6			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	94.1			79.0-136	02/22/2022 14:50	WG1817742

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.111	U	0.343	0.622	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.111	J	0.172	0.265	02/23/2022 22:28	WG1819523
(T) Barium-133	88.6			30.0-143	02/23/2022 22:28	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.149	U	0.389	0.728	02/22/2022 14:50	WG1817742
(T) Barium	111			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	95.8			79.0-136	02/22/2022 14:50	WG1817742

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.214	U	0.415	0.775	02/23/2022 22:28	WG1819523

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0649	U	0.146	0.266	02/23/2022 22:28	WG1819523
(T) Barium-133	90.8			30.0-143	02/23/2022 22:28	WG1819523

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.15		0.362	0.636	02/22/2022 14:50	WG1817742
(T) Barium	103			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	102			79.0-136	02/22/2022 14:50	WG1817742

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.25		0.435	0.751	02/23/2022 22:28	WG1819523

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.104	U	0.241	0.400	02/23/2022 22:28	WG1819523
(T) Barium-133	94.2			30.0-143	02/23/2022 22:28	WG1819523

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.300	J	0.296	0.546	02/22/2022 14:50	WG1817742
(T) Barium	86.4			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	103			79.0-136	02/22/2022 14:50	WG1817742

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.353	J	0.336	0.624	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0525	U	0.159	0.303	02/23/2022 22:28	WG1819523
(T) Barium-133	99.7			30.0-143	02/23/2022 22:28	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.968	U	0.303	0.609	02/22/2022 14:50	WG1817742
(T) Barium	89.7			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	105			79.0-136	02/22/2022 14:50	WG1817742

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.000	U	0.333	0.691	02/23/2022 22:28	WG1819523

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.00247	U	0.138	0.326	02/23/2022 22:28	WG1819523
(T) Barium-133	95.4			30.0-143	02/23/2022 22:28	WG1819523

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.844		0.279	0.493	02/22/2022 14:50	WG1817742
(T) Barium	98.1			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	105			79.0-136	02/22/2022 14:50	WG1817742

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.949		0.330	0.568	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.105	U	0.177	0.283	02/23/2022 22:28	WG1819523
(T) Barium-133	92.0			30.0-143	02/23/2022 22:28	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.28		0.294	0.467	02/22/2022 14:50	WG1817742
(T) Barium	106			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	98.8			79.0-136	02/22/2022 14:50	WG1817742

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.28		0.299	0.516	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.0184	U	0.0538	0.219	02/23/2022 22:28	WG1819523
(T) Barium-133	97.3			30.0-143	02/23/2022 22:28	WG1819523

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.0154	U	0.260	0.492	02/22/2022 14:50	WG1817742
(T) Barium	102			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	93.8			79.0-136	02/22/2022 14:50	WG1817742

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.173	U	0.308	0.524	02/23/2022 22:28	WG1819523

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.173	J	0.166	0.181	02/23/2022 22:28	WG1819523
(T) Barium-133	99.7			30.0-143	02/23/2022 22:28	WG1819523

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.55		0.304	0.511	02/22/2022 14:50	WG1817742
(T) Barium	92.6			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	103			79.0-136	02/22/2022 14:50	WG1817742

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.71		0.350	0.553	02/23/2022 22:28	WG1819523

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.158	J	0.174	0.211	02/23/2022 22:28	WG1819523
(T) Barium-133	95.0			30.0-143	02/23/2022 22:28	WG1819523

⁶Qc

⁷Gl

⁸Al

⁹Sc

WG1817742

Radiochemistry by Method 904/9320

QUALITY CONTROL SUMMARY

L1461490-01,02,03,04,05,06,07,08,09,10,11

Method Blank (MB)

(MB) R3764674-1 02/22/22 14:50

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	-0.170	<u>U</u>	0.223	0.420
(T) Barium	98.2		98.2	
(T) Yttrium	105		105	

L1461488-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1461488-01 02/22/22 14:50 • (DUP) R3764674-5 02/22/22 14:50

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	0.341	0.636	-0.0749	0.894	0.636	1	200	0.258	<u>U</u>	20	3
(T) Barium	93.8			97.9	97.9							
(T) Yttrium	108			93.3	93.3							

Laboratory Control Sample (LCS)

(LCS) R3764674-2 02/22/22 14:50

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.92	118	80.0-120	
(T) Barium			99.1		
(T) Yttrium			96.5		

L1461484-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1461484-01 02/22/22 14:50 • (MS) R3764674-3 02/22/22 14:50 • (MSD) R3764674-4 02/22/22 14:50

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	1.15	16.3	15.9	90.7	88.6	1	70.0-130			2.17		20
(T) Barium		91.0			101	89.5							
(T) Yttrium		103			99.2	109							

ACCOUNT:
PDC Laboratory, Inc.

PROJECT:
FB01360

SDG:
L1461490

DATE/TIME:
03/03/22 10:53

PAGE:
17 of 23

Method Blank (MB)

(MB) R3765862-1 02/23/22 22:28

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	0.0249	<u>U</u>	0.0535	0.0876
(T) Barium-133	95.8		95.8	

L1461490-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1461490-11 02/23/22 22:28 • (DUP) R3765862-5 02/23/22 22:28

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	0.158	0.174	0.211	0.0677	0.134	0.211	1	80.0	0.411	<u>U</u>	20	3
(T) Barium-133	95.0			91.0	91.0							

Laboratory Control Sample (LCS)

(LCS) R3765862-2 02/23/22 22:28

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.45	109	80.0-120	
(T) Barium-133			95.9		

L1461484-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1461484-03 02/23/22 22:28 • (MS) R3765862-3 02/23/22 22:28 • (MSD) R3765862-4 02/23/22 22:28

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	-0.00238	20.0	19.0	99.5	94.4	1	75.0-125			5.18		20
(T) Barium-133		92.6			91.1	96.3							

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.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCREDITATIONS & LOCATIONS

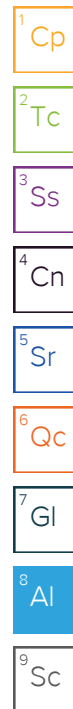
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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	LA000356
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

FB01360

K009

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

LH4490

Sample: FB01360-01
Name: G270

Sampled: 02/08/22 13:50
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 13:50

Sample: FB01360-02
Name: G279

Sampled: 02/08/22 12:22
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 12:22

Sample: FB01360-03
Name: G280

Sampled: 02/08/22 11:05
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 11:05

Sample: FB01360-04
Name: G281

Sampled: 02/08/22 12:12
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 12:12

Sample: FB01360-05
Name: G403

Sampled: 02/08/22 09:46
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 09:46

SUBCONTRACT ORDER
 Transfer Chain of Custody
 Pace Analytical Services, LLC
 FB01360

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

14461490

Sample: FB01360-06
 Name: G404

Sampled: 02/08/22 10:43
 Matrix: Ground Water
 Preservative: HNO3, pH <2

-06

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 10:43

Sample: FB01360-07
 Name: G405

Sampled: 02/08/22 12:02
 Matrix: Ground Water
 Preservative: HNO3, pH <2

-07

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 12:02

Sample: FB01360-08
 Name: G406

Sampled: 02/08/22 15:56
 Matrix: Ground Water
 Preservative: HNO3, pH <2

-08

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 15:56

Sample: FB01360-09
 Name: G407

Sampled: 02/08/22 14:30
 Matrix: Ground Water
 Preservative: HNO3, pH <2

-09

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 14:30

Sample: FB01360-10
 Name: G410

Sampled: 02/08/22 13:21
 Matrix: Ground Water
 Preservative: HNO3, pH <2

-10

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

03/10/22 16:00

08/07/22 13:21

SUBCONTRACT ORDER
 Transfer Chain of Custody
 Pace Analytical Services, LLC
 FB01360

SENDING LABORATORY

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

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
 12065 Lebanon Rd
 Mt Juliet, TN 37122
 (615) 758-5658

14461490

Sample: FB01360-11
 Name: G154

Sampled: 02/08/22 15:38
 Matrix: Ground Water
 Preservative: HNO3, pH <2

-11

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 15:38	

SAMPLE RECEIPT CHECKLIST

COC Seal Present/Intact: ☒ Y ☐ N IF APPLICABLE
 COC Signed Accurate: ☒ Y ☐ N VOA Zero Headspace: ☒ Y ☐ N
 Bottles active intact: ☒ Y ☐ N Pres/Correct/Check: ☒ Y ☐ N
 Correct bottles used: ☒ Y ☐ N
 Sufficient volume sent: ☒ Y ☐ N
 RAD Screen <0.5 mB/hr: ☒ Y ☐ N

Please email results to Gail Schindler at gschindler@pdclab.com

Date Shipped: 2-10-22 Total # of Containers: 11 Sample Origin (State): IL PO #: 42
 Turn-Around Time Requested ☒ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By: [Signature] Date/Time: 2-10-22 11:15 Received By: _____ Date/Time: _____
 Sample Temperature Upon Receipt: _____ °C
 Sample(s) Received on Ice: ☐ Y ☐ N
 Proper Bottles Received in Good Condition: ☐ Y ☐ N
 Bottles Filled with Adequate Volume: ☐ Y ☐ N

Relinquished By: _____ Date/Time: _____ Received By: [Signature] Date/Time: 2/10/22 09:30
 Samples Received Within Hold Time: ☐ Y ☐ N
 Date/Time Taken From Sample Bottle: ☐ Y ☐ N



ANALYTICAL REPORT

April 05, 2022

Revised Report

Pace IR - Peoria, IL

Sample Delivery Group: L1461484
Samples Received: 02/14/2022
Project Number: FB01773
Description:

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

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FB01773-03 L1461484-03	7	⁵ Sr
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SAMPLE SUMMARY

FB01773-01 L1461484-01 Non-Potable Water

Collected by

Collected date/time

Received date/time

02/09/22 11:52

02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

FB01773-02 L1461484-02 Non-Potable Water

Collected by

Collected date/time

Received date/time

02/09/22 13:20

02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01773-03 L1461484-03 Non-Potable Water

Collected by

Collected date/time

Received date/time

02/09/22 09:58

02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	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.



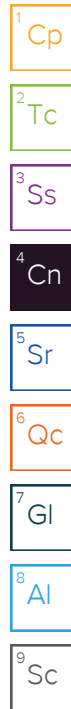
Donna Eidson
Project Manager

Report Revision History

Level II Report - Version 1: 03/03/22 10:54

Project Narrative

Revised collection times



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.15		0.407	0.723	02/22/2022 14:50	WG1817742
(T) Barium	91.0			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	103			79.0-136	02/22/2022 14:50	WG1817742

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.21		0.435	0.778	02/23/2022 22:28	WG1819523

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0591	U	0.154	0.286	02/23/2022 22:28	WG1819523
(T) Barium-133	93.5			30.0-143	02/23/2022 22:28	WG1819523

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.628		0.315	0.568	02/22/2022 14:50	WG1817742
(T) Barium	91.4			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	103			79.0-136	02/22/2022 14:50	WG1817742

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.873		0.381	0.616	02/23/2022 22:28	WG1819523

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.246		0.214	0.238	02/23/2022 22:28	WG1819523
(T) Barium-133	92.2			30.0-143	02/23/2022 22:28	WG1819523

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.351	J	0.349	0.642	02/22/2022 14:50	WG1817742
(T) Barium	86.6			62.0-143	02/22/2022 14:50	WG1817742
(T) Yttrium	98.0			79.0-136	02/22/2022 14:50	WG1817742

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.351	J	0.374	0.715	02/23/2022 22:28	WG1819523

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.00238	U	0.134	0.315	02/23/2022 22:28	WG1819523
(T) Barium-133	92.6			30.0-143	02/23/2022 22:28	WG1819523

⁶Qc

⁷Gl

⁸Al

⁹Sc

WG1817742

Radiochemistry by Method 904/9320

QUALITY CONTROL SUMMARY

L1461484-01,02,03

Method Blank (MB)

(MB) R3764674-1 02/22/22 14:50

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	-0.170	<u>U</u>	0.223	0.420
(T) Barium	98.2		98.2	
(T) Yttrium	105		105	

L1461488-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1461488-01 02/22/22 14:50 • (DUP) R3764674-5 02/22/22 14:50

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	0.341	0.636	-0.0749	0.894	0.636	1	200	0.258	<u>U</u>	20	3
(T) Barium	93.8			97.9	97.9							
(T) Yttrium	108			93.3	93.3							

Laboratory Control Sample (LCS)

(LCS) R3764674-2 02/22/22 14:50

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.92	118	80.0-120	
(T) Barium			99.1		
(T) Yttrium			96.5		

L1461484-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1461484-01 02/22/22 14:50 • (MS) R3764674-3 02/22/22 14:50 • (MSD) R3764674-4 02/22/22 14:50

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	1.15	16.3	15.9	90.7	88.6	1	70.0-130			2.17		20
(T) Barium		91.0			101	89.5							
(T) Yttrium		103			99.2	109							

ACCOUNT:
Pace IR - Peoria, IL

PROJECT:
FB01773

SDG:
L1461484

DATE/TIME:
04/05/22 11:25

PAGE:
8 of 12

WG1819523

Radiochemistry by Method SM7500Ra B M

QUALITY CONTROL SUMMARY

L1461484-01,02,03

Method Blank (MB)

(MB) R3765862-1 02/23/22 22:28

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	0.0249	<u>U</u>	0.0535	0.0876
(T) Barium-133	95.8		95.8	

L1461490-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1461490-11 02/23/22 22:28 • (DUP) R3765862-5 02/23/22 22:28

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	0.158	0.174	0.211	0.0677	0.134	0.211	1	80.0	0.411	<u>U</u>	20	3
(T) Barium-133	95.0			91.0	91.0							

Laboratory Control Sample (LCS)

(LCS) R3765862-2 02/23/22 22:28

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.45	109	80.0-120	
(T) Barium-133			95.9		

L1461484-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1461484-03 02/23/22 22:28 • (MS) R3765862-3 02/23/22 22:28 • (MSD) R3765862-4 02/23/22 22:28

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	-0.00238	20.0	19.0	99.5	94.4	1	75.0-125			5.18		20
(T) Barium-133		92.6			91.1	96.3							

ACCOUNT:
Pace IR - Peoria, IL

PROJECT:
FB01773

SDG:
L1461484

DATE/TIME:
04/05/22 11:25

PAGE:
9 of 12

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.

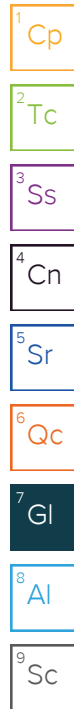
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

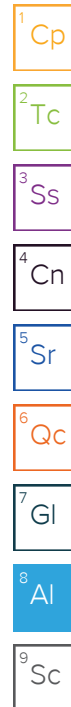
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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	LA000356
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
 FB01773

SENDING LABORATORY

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

RECEIVING LABORATORY

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

K012

14461484

Sample: FB01773-01
 Name: G401

Sampled: 02/09/22 11:52
 Matrix: Ground Water
 Preservative: HNO3, pH <2 -01

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	03/03/22 16:00	08/08/22 11:52	
----------------------------	----------------	----------------	--

Sample: FB01773-02
 Name: G402

Sampled: 02/09/22 13:20
 Matrix: Ground Water
 Preservative: HNO3, pH <2 -02

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	03/03/22 16:00	08/08/22 13:20	
----------------------------	----------------	----------------	--

Sample: FB01773-03
 Name: G411

Sampled: 02/09/22 09:58
 Matrix: Ground Water
 Preservative: HNO3, pH <2 -03

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	03/03/22 16:00	08/08/22 09:58	
----------------------------	----------------	----------------	--

Sample Receipt Checklist
 If Applicable
 COC Seal Present/Intact: ☒ N ☐ Y
 COC Signed/Accurate: ☒ N ☐ Y
 Bottles active/Intact: ☒ N ☐ Y
 Correct bottles used: ☒ N ☐ Y
 Sufficient volume sent: ☒ N ☐ Y
 BAD Screen <0.5 mp/hz: ☒ N ☐ Y
 Please email results to Gail Schmitt at gschmitt@paceanalytical.com

Date Shipped: 2-11-22 Total # of Containers: 3 Sample Origin (State): IL PO #: 42

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

Reinquired By: [Signature] Date/Time: 2-11-22 11:40 Received By: [Signature] Date/Time: 2/14/22 09:00
 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: _____

Relinquished By: [Signature] Date/Time: 2/14/22 09:00 Received By: [Signature] Date/Time: 2/14/22 09:00



ANALYTICAL REPORT

April 21, 2022

Revised Report

Pace IR - Peoria, IL

Sample Delivery Group: L1475988
Samples Received: 03/29/2022
Project Number: FC03756
Description: Coffeen SW Pond
Site: 001
Report To: Gail Schindler

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

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G152 L1475988-02	6	⁴ Cn
G153 L1475988-03	7	⁵ Sr
G155 L1475988-04	8	
Qc: Quality Control Summary	9	⁶ Qc
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Al: Accreditations & Locations	12	
Sc: Sample Chain of Custody	13	⁹ Sc

SAMPLE SUMMARY

G151 L1475988-01 Non-Potable Water

Collected by
Collected date/time
03/21/22 13:26
Received date/time
03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1846344	1	04/13/22 13:54	04/18/22 12:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1846344	1	04/13/22 13:54	04/15/22 20:39	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

G152 L1475988-02 Non-Potable Water

Collected by
Collected date/time
03/21/22 15:20
Received date/time
03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1846344	1	04/13/22 13:54	04/18/22 12:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1846344	1	04/13/22 13:54	04/15/22 20:39	RGT	Mt. Juliet, TN

G153 L1475988-03 Non-Potable Water

Collected by
Collected date/time
03/21/22 14:52
Received date/time
03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1846344	1	04/13/22 13:54	04/18/22 12:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1846344	1	04/13/22 13:54	04/15/22 20:39	RGT	Mt. Juliet, TN

G155 L1475988-04 Non-Potable Water

Collected by
Collected date/time
03/21/22 14:20
Received date/time
03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1846344	1	04/13/22 13:54	04/18/22 12:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1846344	1	04/13/22 13:54	04/15/22 20:39	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.



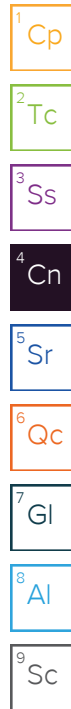
Donna Eidson
Project Manager

Report Revision History

Level II Report - Version 1: 04/20/22 17:53

Project Narrative

Added COMB RA per customer request.



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.363	U	0.330	0.626	04/18/2022 12:20	WG1846703
(T) Barium	93.0			62.0-143	04/18/2022 12:20	WG1846703
(T) Yttrium	101			79.0-136	04/18/2022 12:20	WG1846703

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.0758	U	0.371	0.689	04/18/2022 12:20	WG1846344

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0758	U	0.169	0.289	04/15/2022 20:39	WG1846344
(T) Barium-133	95.7			30.0-143	04/15/2022 20:39	WG1846344

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.294	J	0.336	0.616	04/18/2022 12:20	WG1846703
(T) Barium	84.4			62.0-143	04/18/2022 12:20	WG1846703
(T) Yttrium	107			79.0-136	04/18/2022 12:20	WG1846703

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.621	J	0.453	0.707	04/18/2022 12:20	WG1846344

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.326	J	0.304	0.346	04/15/2022 20:39	WG1846344
(T) Barium-133	80.2			30.0-143	04/15/2022 20:39	WG1846344

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.340	J	0.321	0.587	04/18/2022 12:20	WG1846703
(T) Barium	86.0			62.0-143	04/18/2022 12:20	WG1846703
(T) Yttrium	96.3			79.0-136	04/18/2022 12:20	WG1846703

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.614	J	0.415	0.654	04/18/2022 12:20	WG1846344

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.274	J	0.263	0.288	04/15/2022 20:39	WG1846344
(T) Barium-133	82.2			30.0-143	04/15/2022 20:39	WG1846344

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.0803	U	0.310	0.575	04/18/2022 12:20	WG1846703
(T) Barium	92.5			62.0-143	04/18/2022 12:20	WG1846703
(T) Yttrium	96.8			79.0-136	04/18/2022 12:20	WG1846703

1
Cp

2
Tc

3
Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.237	U	0.372	0.644	04/18/2022 12:20	WG1846344

4
Cn

5
Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.156	J	0.205	0.291	04/15/2022 20:39	WG1846344
(T) Barium-133	99.0			30.0-143	04/15/2022 20:39	WG1846344

6
Qc

7
Gl

8
Al

9
Sc

WG1846703

Radiochemistry by Method 904/9320

QUALITY CONTROL SUMMARY

L1475988-01,02,03,04

Method Blank (MB)

(MB) R3783293-1 04/15/22 12:10

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	-0.0673	<u>U</u>	0.212	0.427
(T) Barium	95.4		95.4	
(T) Yttrium	98.3		98.3	

L1475371-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1475371-01 04/18/22 12:20 • (DUP) R3783293-5 04/15/22 12:10

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	-0.0465	0.290	0.531	0.504	0.498	0.531	1	200	0.956	<u>J</u>	20	3
(T) Barium	91.1			93.3	93.3							
(T) Yttrium	104			97.4	97.4							

Laboratory Control Sample (LCS)

(LCS) R3783293-2 04/15/22 12:10

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.71	94.2	80.0-120	
(T) Barium			105		
(T) Yttrium			99.4		

L1475323-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475323-01 04/15/22 12:10 • (MS) R3783293-3 04/15/22 12:10 • (MSD) R3783293-4 04/15/22 12:10

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	0.443	19.4	21.5	113	126	1	70.0-130			10.4		20
(T) Barium		89.3			98.8	104							
(T) Yttrium		101			96.8	94.6							

ACCOUNT:
Pace IR - Peoria, IL

PROJECT:
FC03756

SDG:
L1475988

DATE/TIME:
04/21/22 11:52

PAGE:
9 of 13

Method Blank (MB)

(MB) R3782355-5 04/16/22 15:33

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	-0.0121	<u>U</u>	0.0112	0.0292
(T) Barium-133	94.6		94.6	

L1480367-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1480367-01 04/15/22 20:39 • (DUP) R3782355-4 04/15/22 20:39

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	0.851	0.432	0.317	0.438	0.270	0.317	1	64.0	0.810		20	3
(T) Barium-133	70.3			96.8	96.8							

Laboratory Control Sample (LCS)

(LCS) R3782355-1 04/15/22 20:39

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.09	101	80.0-120	
(T) Barium-133			93.4		

L1479436-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1479436-01 04/15/22 20:39 • (MS) R3782355-2 04/15/22 20:39 • (MSD) R3782355-3 04/15/22 20:39

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	1.70	21.4	22.9	98.6	106	1	75.0-125			6.81		20
(T) Barium-133		83.7			90.6	90.7							

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.

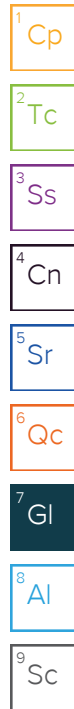
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

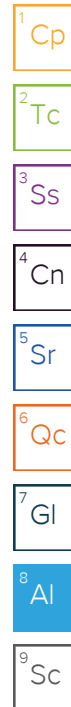
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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	LA000356
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.



A150

Internal Transfer Chain of Custody

State of Origin: IL
Cert. Needed: ☒ YES ☐ NO



Workorder: FC03756 Workorder Name: Coffeen SW Pond Owner Received Date: 3/21/2022 Results Requested By: 4/13/2022

Report To: Gail Schindler
Pace Analytical - IL/MO
2231 W. Altorfer Drive
Peoria, IL 61615
800-752-6651

Subcontract To: Pace Analytical Services, LLC
12065 Lebanon
Mt. Juliet, TN 37122
(615)758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226/228	Requested Analysis										LAB USE ONLY
1	G151	Grab	3/21/2022 13:26	FC03756-01	GW					X											-01
2	G152	Grab	3/21/2022 15:20	FC03756-02	GW					X											-02
3	G153	Grab	3/21/2022 14:52	FC03756-03	GW					X											-03
4	G155	Grab	3/21/2022 14:20	FC03756-04	GW					X											-04
5																					
6																					
7																					
8																					
9																					
10																					

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	3/23/22 12:55	<i>[Signature]</i>	3/28/22 09:00	
2					
3					

61475988

Cooler Temperature on Receipt: _____ °C Custody Seal: ☒ or N Received on Ice: ☒ or N Sample Intact: ☒ 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.

Sample Receipt Checklist:
COC Seal Present/Intact: ☒ Y ☐ N If Applicable
COC Signed/Accurate: ☒ Y ☐ N VOA Zero Headspaces: ☒ Y ☐ N
Bottles active 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

14/6/2021
A280



PDC LABORATORIES, INC.
WWW.PDCLAB.COM

REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD

STATE WHERE SAMPLE COLLECTED IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 CLIENT VISTRA - COFFEEN		PROJECT NUMBER GMZ		PROJECT LOCATION		PURCHASE ORDER #		3 ANALYSIS REQUESTED		4 (FOR LAB USE ONLY) LOGIN # FB0660-11 LOGGED BY: KEG CLIENT: VISTRA-COFFEEN PROJECT: COFFEEN GMZ PROJ. MGR.: GJ SCHINDLER	
ADDRESS 134 CIPS LANE		PHONE NUMBER		E-MAIL		DATE SHIPPED		AL*, SB, AS, AS*, BA, BE B*, CD, CA, CR, CO, CU* CN, FE*, PB, LI, MN*, HG, MO, NI*, NO3, PB*, SE, AG* TL, V*, ZN*, F, CL, SO4, TDS, RADIUM 226/228		REMARKS *DISSOLVED	
CITY COFFEEN, IL 62017		SAMPLER (PLEASE PRINT) Tracy Carroll		MATRIX TYPES: WW- WASTEWATER DW- DRINKING WATER GW- GROUND WATER WWSL- SLUDGE NAS- NON AQUEOUS SOLID LCHL- LEACHATE OIL- OIL SO- SOIL SOL- SOLID							
CONTACT PERSON JOHN ROMANG		SAMPLER'S SIGNATURE Tracy Carroll									
2 SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)		DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	COMP	MATRIX TYPE	BOTTLE COUNT	PRES CODE CLIENT PROVIDED			
G270		2/8/22	1350	X		GW	5				
G279			12:22								
G280			11:05								
G281			1212								
G403			946								
G404			1043								
G405			1202								
G406			1556								
G407			1430								
CHEMICAL PRESERVATION CODES: 1-HCL 2-H2SO4 3-HNO3 4-NAOH 5-NA2S2O3 6-UNPRESERVED 7-OTHER											
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE EMAIL IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE:				DATE RESULTS NEEDED		6 I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities. PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS) _____					
7 RELINQUISHED BY: (SIGNATURE) Tracy Carroll		DATE 2/8/22 TIME 1745		RECEIVED BY: (SIGNATURE) Kathy Gray				DATE 2/8/22 TIME 17:45		8 COMMENTS: (FOR LAB USE ONLY) SAMPLE TEMPERATURE UPON RECEIPT 65 °C CHILL PROCESS STARTED PRIOR TO RECEIPT YOR N SAMPLE(S) RECEIVED ON ICE YOR N SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED YOR N DATE AND TIME TAKEN FROM SAMPLE BOTTLE _____	
RELINQUISHED BY: (SIGNATURE) Kathy Gray		DATE 2/8/22 TIME 19130		RECEIVED BY: (SIGNATURE) Kathy Gray				DATE 2/9/22 TIME 10:30			
RELINQUISHED BY: (SIGNATURE) Kathy Gray		DATE 2/9/22 TIME 14:45		RECEIVED BY: (SIGNATURE) Kathy Gray				DATE 2/9/22 TIME 1445			

STATE WHERE SAMPLE COLLECTED IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

Page 98 of 99

REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD

STATE WHERE SAMPLE COLLECTED IL

[illegible]



CHAIN OF CUSTODY RECORD
STATE WHERE SAMPLE COLLECTED IL

Page 29 of 29



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

November 17, 2022

John Romang
Vistra - Coffeen
134 CIPS Lane
Coffeen, IL 62017

Dear John Romang:

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,

A handwritten signature in cursive script that reads "Gail Schindler".

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

**SAMPLE RECEIPT CHECK LIST**

Items not applicable will be marked as in compliance

Work Order FH05103

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



Work Order FH05287

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
YES	Short hold time analysis
YES	Current PDC COC submitted
YES	Case narrative provided



Work Order FH05292

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
YES	Short hold time analysis
YES	Current PDC COC submitted
YES	Case narrative provided



Work Order FI04087

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
YES	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: FH05103-06
Name: SG02
Matrix: Ground Water - Grab

Sampled: 08/23/22 00:00
Received: 08/24/22 16:35
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
-----------	--------	------	-----------	----------	----------	-----	----------	---------	--------

Field - PIA

Depth, From Measuring Point	7.45	Feet		08/23/22 00:00	1		08/23/22 00:00	FIELD	Field*
-----------------------------	------	------	--	----------------	---	--	----------------	-------	--------

Sample: FH05103-07
Name: SG03
Matrix: Ground Water - Grab

Sampled: 08/23/22 00:00
Received: 08/24/22 16:35
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
-----------	--------	------	-----------	----------	----------	-----	----------	---------	--------

Field - PIA

Depth, From Measuring Point	9.81	Feet		08/23/22 00:00	1		08/23/22 00:00	FIELD	Field*
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Sample: FH05103-09
Name: SG-04
Matrix: Ground Water - Grab

Sampled: 08/23/22 00:00
Received: 08/24/22 16:35
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Field - PIA

Depth, From Measuring Point	6.16	Feet		08/23/22 00:00	1		08/23/22 00:00	FIELD	Field*
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ANALYTICAL RESULTS

Sample: FH05287-03

Name: G270

Alias:

Sampled: 08/24/22 14:14

Received: 08/25/22 11:32

Matrix: Ground Water - Grab

PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	9.7	mg/L		09/06/22 21:15	1	1.0	09/06/22 21:15	CRD	EPA 300.0 REV 2.1
Fluoride	0.325	mg/L		09/06/22 21:15	1	0.250	09/06/22 21:15	CRD	EPA 300.0 REV 2.1
Sulfate	53	mg/L		09/06/22 21:33	10	10	09/06/22 21:33	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	4.57	Feet		08/24/22 14:14	1		08/24/22 14:14	FIELD	Field*
Dissolved oxygen, Field	0.60	mg/L		08/24/22 14:14	1		08/24/22 14:14	FIELD	Field*
Oxidation Reduction Potential	109	mV		08/24/22 14:14	1	-500	08/24/22 14:14	FIELD	Field*
pH, Field Measured	7.29	pH Units		08/24/22 14:14	1		08/24/22 14:14	FIELD	Field*
Specific Conductance, Field Measured	745.6	umhos/cm		08/24/22 14:14	1		08/24/22 14:14	FIELD	Field*
Temperature, Field Measured	19.7	°C		08/24/22 14:14	1		08/24/22 14:14	FIELD	Field*
Turbidity, Field Measured	3.03	NTU		08/24/22 14:14	1	0.00	08/24/22 14:14	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	340	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO ₃	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	500	mg/L		08/30/22 13:32	1	26	08/30/22 15:30	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		08/29/22 10:06	5	1.0	09/13/22 16:00	JMW	EPA 6020A
Barium	36	ug/L		08/29/22 10:06	5	1.0	09/14/22 12:16	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/29/22 10:06	5	1.0	09/13/22 16:00	JMW	EPA 6020A
Boron	< 10	ug/L		08/29/22 10:06	5	10	09/13/22 16:00	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/29/22 10:06	5	1.0	09/13/22 16:00	JMW	EPA 6020A
Calcium	56	mg/L		08/29/22 10:06	5	0.20	09/13/22 16:00	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/29/22 10:06	5	4.0	09/13/22 16:00	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		08/29/22 10:06	5	2.0	09/13/22 16:00	JMW	EPA 6020A
Lead	< 1.0	ug/L		08/29/22 10:06	5	1.0	09/14/22 12:16	JMW	EPA 6020A
Magnesium	25	mg/L		08/29/22 10:06	5	0.10	09/13/22 16:00	JMW	EPA 6020A
Mercury	< 0.20	ug/L		08/29/22 10:06	5	0.20	09/13/22 16:00	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		08/29/22 10:06	5	1.0	09/13/22 16:00	JMW	EPA 6020A
Potassium	0.62	mg/L		08/29/22 10:06	5	0.10	09/13/22 16:00	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FH05287-03

Name: G270

Alias:

Sampled: 08/24/22 14:14

Received: 08/25/22 11:32

Matrix: Ground Water - Grab

PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Selenium	< 1.0	ug/L		08/29/22 10:06	5	1.0	09/13/22 16:00	JMW	EPA 6020A
Sodium	98	mg/L		08/29/22 10:06	5	0.10	09/13/22 16:00	JMW	EPA 6020A
Lithium	< 20	ug/L		08/29/22 10:06	1	20	09/08/22 14:31	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FH05292-01

Name: G402

Alias:

Sampled: 08/24/22 13:56

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	3.0	mg/L		08/25/22 22:30	1	1.0	08/25/22 22:30	CRD	EPA 300.0 REV 2.1
Sulfate	600	mg/L		08/25/22 23:42	100	100	08/25/22 23:42	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	10.16	Feet		08/24/22 13:56	1		08/24/22 13:56	FIELD	Field*
Dissolved oxygen, Field	6.4	mg/L		08/24/22 13:56	1		08/24/22 13:56	FIELD	Field*
Oxidation Reduction Potential	138	mV		08/24/22 13:56	1	-500	08/24/22 13:56	FIELD	Field*
pH, Field Measured	6.78	pH Units		08/24/22 13:56	1		08/24/22 13:56	FIELD	Field*
Specific Conductance, Field Measured	1844	umhos/cm		08/24/22 13:56	1		08/24/22 13:56	FIELD	Field*
Temperature, Field Measured	19.8	°C		08/24/22 13:56	1		08/24/22 13:56	FIELD	Field*
Turbidity, Field Measured	128	NTU		08/24/22 13:56	1	0.00	08/24/22 13:56	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	490	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Fluoride	0.338	mg/L		09/01/22 11:31	1	0.250	09/01/22 11:31	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	1400	mg/L		08/30/22 13:32	1	17	08/30/22 15:30	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	6.5	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:38	JMW	EPA 6020A
Barium	31	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:38	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/14/22 08:17	JMW	EPA 6020A
Boron	5700	ug/L		08/30/22 09:01	5	10	09/13/22 10:12	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:38	JMW	EPA 6020A
Calcium	230	mg/L		08/30/22 09:01	5	0.20	09/12/22 13:38	JMW	EPA 6020A
Chromium	5.6	ug/L		08/30/22 09:01	5	4.0	09/12/22 13:38	JMW	EPA 6020A
Cobalt	3.6	ug/L		08/30/22 09:01	5	2.0	09/12/22 13:38	JMW	EPA 6020A
Lead	3.4	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:38	JMW	EPA 6020A
Magnesium	140	mg/L		08/30/22 09:01	5	0.10	09/13/22 10:12	JMW	EPA 6020A
Mercury	< 0.20	ug/L		08/30/22 09:01	5	0.20	09/12/22 13:38	JMW	EPA 6020A
Molybdenum	2.4	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:38	JMW	EPA 6020A
Potassium	1.7	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:38	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:38	JMW	EPA 6020A
Sodium	50	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:38	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FH05292-01

Name: G402

Alias:

Sampled: 08/24/22 13:56

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lithium	26	ug/L		08/30/22 09:01	1	20	09/08/22 15:01	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FH05292-02

Name: G403

Alias:

Sampled: 08/24/22 15:07

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	6.0	mg/L		08/26/22 00:01	1	1.0	08/26/22 00:01	CRD	EPA 300.0 REV 2.1
Fluoride	0.289	mg/L		08/26/22 00:01	1	0.250	08/26/22 00:01	CRD	EPA 300.0 REV 2.1
Sulfate	58	mg/L		08/26/22 00:20	10	10	08/26/22 00:20	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	7.86	Feet		08/24/22 15:07	1		08/24/22 15:07	FIELD	Field*
Dissolved oxygen, Field	0.92	mg/L		08/24/22 15:07	1		08/24/22 15:07	FIELD	Field*
Oxidation Reduction Potential	11.0	mV		08/24/22 15:07	1	-500	08/24/22 15:07	FIELD	Field*
pH, Field Measured	6.67	pH Units		08/24/22 15:07	1		08/24/22 15:07	FIELD	Field*
Specific Conductance, Field Measured	747.1	umhos/cm		08/24/22 15:07	1		08/24/22 15:07	FIELD	Field*
Temperature, Field Measured	19.2	°C		08/24/22 15:07	1		08/24/22 15:07	FIELD	Field*
Turbidity, Field Measured	3.97	NTU		08/24/22 15:07	1	0.00	08/24/22 15:07	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	300	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO ₃	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Solids - total dissolved solids (TDS)	400	mg/L		08/30/22 13:32	1	26	08/30/22 15:30	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:42	JMW	EPA 6020A
Barium	110	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:42	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/14/22 08:20	JMW	EPA 6020A
Boron	100	ug/L		08/30/22 09:01	5	10	09/13/22 10:16	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:42	JMW	EPA 6020A
Calcium	80	mg/L		08/30/22 09:01	5	0.20	09/12/22 13:42	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/30/22 09:01	5	4.0	09/12/22 13:42	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		08/30/22 09:01	5	2.0	09/12/22 13:42	JMW	EPA 6020A
Lead	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:42	JMW	EPA 6020A
Magnesium	37	mg/L		08/30/22 09:01	5	0.10	09/13/22 10:16	JMW	EPA 6020A
Mercury	< 0.20	ug/L		08/30/22 09:01	5	0.20	09/12/22 13:42	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:42	JMW	EPA 6020A
Potassium	0.55	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:42	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:42	JMW	EPA 6020A
Sodium	28	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:42	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FH05292-02

Name: G403

Alias:

Sampled: 08/24/22 15:07

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lithium	< 20	ug/L		08/30/22 09:01	1	20	09/08/22 15:04	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FH05292-03

Name: G404

Alias:

Sampled: 08/24/22 15:38

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	120	mg/L		08/26/22 01:16	100	100	08/26/22 01:16	CRD	EPA 300.0 REV 2.1
Sulfate	810	mg/L		08/26/22 01:16	100	100	08/26/22 01:16	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	5.49	Feet		08/24/22 15:38	1		08/24/22 15:38	FIELD	Field*
Dissolved oxygen, Field	0.50	mg/L		08/24/22 15:38	1		08/24/22 15:38	FIELD	Field*
Oxidation Reduction Potential	26.0	mV		08/24/22 15:38	1	-500	08/24/22 15:38	FIELD	Field*
pH, Field Measured	6.46	pH Units		08/24/22 15:38	1		08/24/22 15:38	FIELD	Field*
Specific Conductance, Field Measured	1660	umhos/cm		08/24/22 15:38	1		08/24/22 15:38	FIELD	Field*
Temperature, Field Measured	22.7	°C		08/24/22 15:38	1		08/24/22 15:38	FIELD	Field*
Turbidity, Field Measured	< 0.00	NTU		08/24/22 15:38	1	0.00	08/24/22 15:38	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	390	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Fluoride	< 0.250	mg/L		09/01/22 11:32	1	0.250	09/01/22 11:32	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	1800	mg/L		08/30/22 13:32	1	26	08/30/22 15:30	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:46	JMW	EPA 6020A
Barium	29	ug/L		08/30/22 09:01	5	1.0	09/14/22 08:24	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/14/22 08:24	JMW	EPA 6020A
Boron	13000	ug/L		08/30/22 09:01	100	200	09/13/22 11:37	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 10:19	JMW	EPA 6020A
Calcium	290	mg/L		08/30/22 09:01	5	0.20	09/12/22 13:46	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/30/22 09:01	5	4.0	09/12/22 13:46	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		08/30/22 09:01	5	2.0	09/12/22 13:46	JMW	EPA 6020A
Lead	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:46	JMW	EPA 6020A
Magnesium	130	mg/L		08/30/22 09:01	5	0.10	09/13/22 10:19	JMW	EPA 6020A
Mercury	< 0.20	ug/L		08/30/22 09:01	5	0.20	09/12/22 13:46	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 10:19	JMW	EPA 6020A
Potassium	0.72	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:46	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:46	JMW	EPA 6020A
Sodium	96	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:46	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FH05292-03

Name: G404

Alias:

Sampled: 08/24/22 15:38

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lithium	< 20	ug/L		08/30/22 09:01	1	20	09/08/22 15:06	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FH05292-04

Name: G405

Alias:

Sampled: 08/24/22 17:01

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	6.9	mg/L		08/26/22 01:54	5	5.0	08/26/22 01:54	CRD	EPA 300.0 REV 2.1
Sulfate	1000	mg/L		08/26/22 02:13	250	250	08/26/22 02:13	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.58	Feet		08/24/22 17:01	1		08/24/22 17:01	FIELD	Field*
Dissolved oxygen, Field	0.74	mg/L		08/24/22 17:01	1		08/24/22 17:01	FIELD	Field*
Oxidation Reduction Potential	38.0	mV		08/24/22 17:01	1	-500	08/24/22 17:01	FIELD	Field*
pH, Field Measured	6.73	pH Units		08/24/22 17:01	1		08/24/22 17:01	FIELD	Field*
Specific Conductance, Field Measured	1540	umhos/cm		08/24/22 17:01	1		08/24/22 17:01	FIELD	Field*
Temperature, Field Measured	22.8	°C		08/24/22 17:01	1		08/24/22 17:01	FIELD	Field*
Turbidity, Field Measured	0.100	NTU		08/24/22 17:01	1	0.00	08/24/22 17:01	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	260	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Fluoride	0.426	mg/L		09/01/22 11:37	1	0.250	09/01/22 11:37	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	1900	mg/L		08/30/22 13:32	1	26	08/30/22 15:30	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:50	JMW	EPA 6020A
Barium	16	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:50	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/14/22 08:27	JMW	EPA 6020A
Boron	9400	ug/L		08/30/22 09:01	5	10	09/13/22 10:23	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:50	JMW	EPA 6020A
Calcium	250	mg/L		08/30/22 09:01	5	0.20	09/12/22 13:50	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/30/22 09:01	5	4.0	09/12/22 13:50	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		08/30/22 09:01	5	2.0	09/12/22 13:50	JMW	EPA 6020A
Lead	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:50	JMW	EPA 6020A
Magnesium	100	mg/L		08/30/22 09:01	5	0.10	09/13/22 10:23	JMW	EPA 6020A
Mercury	< 0.20	ug/L		08/30/22 09:01	5	0.20	09/12/22 13:50	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:50	JMW	EPA 6020A
Potassium	0.56	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:50	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:50	JMW	EPA 6020A
Sodium	100	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:50	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FH05292-04

Name: G405

Alias:

Sampled: 08/24/22 17:01

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lithium	< 20	ug/L		08/30/22 09:01	1	20	09/08/22 15:09	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FH05292-07

Name: G281

Alias:

Sampled: 08/25/22 11:21

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	69	mg/L		08/25/22 21:54	10	10	08/25/22 21:54	CRD	EPA 300.0 REV 2.1
Sulfate	310	mg/L		08/25/22 22:12	50	50	08/25/22 22:12	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	7.05	Feet		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Dissolved oxygen, Field	1.0	mg/L		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Oxidation Reduction Potential	4.00	mV		08/25/22 11:21	1	-500	08/25/22 11:21	FIELD	Field*
pH, Field Measured	6.83	pH Units		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Specific Conductance, Field Measured	1060	umhos/cm		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Temperature, Field Measured	21.0	°C		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Turbidity, Field Measured	118	NTU		08/25/22 11:21	1	0.00	08/25/22 11:21	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	390	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Fluoride	0.302	mg/L		09/01/22 11:44	1	0.250	09/01/22 11:44	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	980	mg/L		08/31/22 10:27	1	26	08/31/22 15:11	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 11:20	JMW	EPA 6020A
Barium	68	ug/L		08/30/22 09:01	5	1.0	09/12/22 14:01	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/14/22 08:38	JMW	EPA 6020A
Boron	14	ug/L		08/30/22 09:01	5	10	09/13/22 11:20	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 11:20	JMW	EPA 6020A
Calcium	150	mg/L		08/30/22 09:01	5	0.20	09/12/22 14:01	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/30/22 09:01	5	4.0	09/12/22 14:01	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		08/30/22 09:01	5	2.0	09/12/22 14:01	JMW	EPA 6020A
Lead	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 14:01	JMW	EPA 6020A
Magnesium	67	mg/L		08/30/22 09:01	5	0.10	09/13/22 11:20	JMW	EPA 6020A
Mercury	< 0.20	ug/L		08/30/22 09:01	5	0.20	09/12/22 14:01	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 11:20	JMW	EPA 6020A
Potassium	0.73	mg/L		08/30/22 09:01	5	0.10	09/12/22 14:01	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 14:01	JMW	EPA 6020A
Sodium	100	mg/L		08/30/22 09:01	5	0.10	09/12/22 14:01	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FH05292-07

Name: G281

Alias:

Sampled: 08/25/22 11:21

Received: 08/25/22 11:34

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lithium	< 20	ug/L		08/30/22 09:01	1	20	09/08/22 15:17	TJJ	EPA 6010B



ANALYTICAL RESULTS

Sample: FI04087-01

Name: G401

Alias:

Sampled: 09/20/22 12:40

Received: 09/20/22 16:00

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	2.9	mg/L		09/21/22 17:03	1	1.0	09/21/22 17:03	CRD	EPA 300.0 REV 2.1
Sulfate	2100	mg/L		09/21/22 17:39	500	500	09/21/22 17:39	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	21.63	Feet		09/20/22 12:40	1		09/20/22 12:40	FIELD	Field*
Dissolved oxygen, Field	0.46	mg/L		09/20/22 12:40	1		09/20/22 12:40	FIELD	Field*
Oxidation Reduction Potential	4.70	mV		09/20/22 12:40	1	-500	09/20/22 12:40	FIELD	Field*
pH, Field Measured	6.14	pH Units		09/20/22 12:40	1		09/20/22 12:40	FIELD	Field*
Specific Conductance, Field Measured	3040	umhos/cm		09/20/22 12:40	1		09/20/22 12:40	FIELD	Field*
Temperature, Field Measured	23.4	°C		09/20/22 12:40	1		09/20/22 12:40	FIELD	Field*
Turbidity, Field Measured	4.52	NTU		09/20/22 12:40	1	0.00	09/20/22 12:40	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	60	mg/L		09/26/22 15:21	1	10	09/26/22 15:21	HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/26/22 15:21	1	10	09/26/22 15:21	HRF	SM 2320B 1997*
Fluoride	< 0.250	mg/L		10/07/22 11:30	1	0.250	10/07/22 11:30	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	2900	mg/L		09/26/22 10:27	1	26	09/26/22 11:48	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		09/22/22 09:09	5	1.0	09/23/22 12:23	JMW	EPA 6020A
Barium	11	ug/L		09/22/22 09:09	5	1.0	09/23/22 12:23	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		09/22/22 09:09	5	1.0	09/23/22 12:23	JMW	EPA 6020A
Boron	4300	ug/L		09/22/22 09:09	5	10	09/23/22 12:23	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		09/22/22 09:09	5	1.0	09/23/22 12:23	JMW	EPA 6020A
Calcium	490	mg/L		09/22/22 09:09	5	0.20	09/23/22 08:04	JMW	EPA 6020A
Chromium	< 4.0	ug/L		09/22/22 09:09	5	4.0	09/23/22 12:23	JMW	EPA 6020A
Cobalt	140	ug/L		09/22/22 09:09	5	2.0	09/23/22 08:04	JMW	EPA 6020A
Lead	< 1.0	ug/L		09/22/22 09:09	5	1.0	09/23/22 12:23	JMW	EPA 6020A
Magnesium	160	mg/L		09/22/22 09:09	5	0.10	09/23/22 08:04	JMW	EPA 6020A
Mercury	< 0.20	ug/L		09/22/22 09:09	5	0.20	09/23/22 12:23	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		09/22/22 09:09	5	1.0	09/23/22 12:23	JMW	EPA 6020A
Potassium	3.0	mg/L		09/22/22 09:09	5	0.10	09/23/22 08:04	JMW	EPA 6020A
Selenium	< 1.0	ug/L		09/22/22 09:09	5	1.0	09/23/22 08:04	JMW	EPA 6020A
Sodium	77	mg/L		09/22/22 09:09	5	0.10	09/23/22 12:23	JMW	EPA 6020A



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ANALYTICAL RESULTS

Sample: FI04087-01

Name: G401

Alias:

Sampled: 09/20/22 12:40

Received: 09/20/22 16:00

Matrix: Ground Water - Grab

PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lithium	23	ug/L		09/22/22 09:09	1	20	09/26/22 10:35	TJJ	EPA 6010B



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B241995 - No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B241995-CCB1)				Prepared & Analyzed: 08/25/22					
Fluoride	0.00	mg/L							
Sulfate	0.00	mg/L							
Chloride	0.0738	mg/L							
Calibration Check (B241995-CCV1)				Prepared & Analyzed: 08/25/22					
Sulfate	4.94	mg/L		5.000		99	90-110		
Chloride	4.52	mg/L		5.000		90	90-110		
Fluoride	4.92	mg/L		5.000		98	90-110		
<u>Batch B242095 - SW 3015 - EPA 6020A</u>									
Blank (B242095-BLK1)				Prepared: 08/29/22 Analyzed: 09/12/22					
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							
Lithium	< 20	ug/L							
LCS (B242095-BS1)				Prepared: 08/29/22 Analyzed: 09/12/22					
Arsenic	552	ug/L		555.6		99	80-120		
Barium	526	ug/L		555.6		95	80-120		
Beryllium	532	ug/L		555.6		96	80-120		
Boron	561	ug/L		555.6		101	80-120		
Cadmium	547	ug/L		555.6		98	80-120		
Calcium	6.06	mg/L		5.556		109	80-120		
Chromium	521	ug/L		555.6		94	80-120		
Cobalt	557	ug/L		555.6		100	80-120		
Lead	544	ug/L		555.6		98	80-120		
Magnesium	5.63	mg/L		5.556		101	80-120		
Mercury	54.5	ug/L		55.56		98	80-120		
Molybdenum	529	ug/L		555.6		95	80-120		
Potassium	5.50	mg/L		5.556		99	80-120		
Selenium	514	ug/L		555.6		92	80-120		
Sodium	5.59	mg/L		5.556		101	80-120		



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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B242095 - SW 3015 - EPA 6010B</u>									
LCS (B242095-BS1)				Prepared: 08/29/22 Analyzed: 09/08/22					
Lithium	549	ug/L		555.6		99	80-120		
<u>Batch B242199 - SW 3015 - EPA 6020A</u>									
Blank (B242199-BLK1)				Prepared: 08/30/22 Analyzed: 09/06/22					
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							
Lithium	< 20	ug/L							
LCS (B242199-BS1)				Prepared: 08/30/22 Analyzed: 09/06/22					
Arsenic	532	ug/L		555.6		96	80-120		
Barium	541	ug/L		555.6		97	80-120		
Beryllium	496	ug/L		555.6		89	80-120		
Boron	535	ug/L		555.6		96	80-120		
Cadmium	513	ug/L		555.6		92	80-120		
Calcium	5.46	mg/L		5.556		98	80-120		
Chromium	563	ug/L		555.6		101	80-120		
Cobalt	578	ug/L		555.6		104	80-120		
Lead	553	ug/L		555.6		100	80-120		
Magnesium	5.60	mg/L		5.556		101	80-120		
Mercury	56.7	ug/L		55.56		102	80-120		
Molybdenum	521	ug/L		555.6		94	80-120		
Potassium	5.58	mg/L		5.556		100	80-120		
Selenium	527	ug/L		555.6		95	80-120		
Sodium	6.23	mg/L		5.556		112	80-120		
Lithium	530	ug/L		555.6		95	80-120		
<u>Batch B242244 - No Prep - SM 2540C</u>									
Blank (B242244-BLK1)				Prepared & Analyzed: 08/30/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B242244-BS1)				Prepared & Analyzed: 08/30/22					
Solids - total dissolved solids (TDS)	1060	mg/L		1000		106	84.9-109		



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B242244 - No Prep - SM 2540C</u>									
LCS (B242244-BS1)				Prepared & Analyzed: 08/30/22					
Solids - total dissolved solids (TDS)	1060	mg/L		1000		106	84.9-109		
Duplicate (B242244-DUP2)				Sample: FH05292-01 Prepared & Analyzed: 08/30/22					
Solids - total dissolved solids (TDS)	1450	mg/L			1410			3	5
Solids - total dissolved solids (TDS)	1450	mg/L			1410			3	5
<u>Batch B242353 - No Prep - SM 2540C</u>									
Blank (B242353-BLK1)				Prepared & Analyzed: 08/31/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B242353-BS1)				Prepared & Analyzed: 08/31/22					
Solids - total dissolved solids (TDS)	873	mg/L		1000		87	84.9-109		
<u>Batch B242487 - No Prep - SM 4500F C 1997</u>									
Calibration Blank (B242487-CCB1)				Prepared & Analyzed: 09/01/22					
Fluoride	0.00900	mg/L							
Calibration Blank (B242487-CCB2)				Prepared & Analyzed: 09/01/22					
Fluoride	0.00900	mg/L							
Calibration Check (B242487-CCV1)				Prepared & Analyzed: 09/01/22					
Fluoride	0.665	mg/L		0.7000		95	90-110		
Calibration Check (B242487-CCV2)				Prepared & Analyzed: 09/01/22					
Fluoride	0.689	mg/L		0.7000		98	90-110		
Matrix Spike (B242487-MS2)				Sample: FH05292-07 Prepared & Analyzed: 09/01/22					
Fluoride	1.36	mg/L		1.000	0.302	105	80-120		
Matrix Spike Dup (B242487-MSD2)				Sample: FH05292-07 Prepared & Analyzed: 09/01/22					
Fluoride	1.35	mg/L		1.000	0.302	105	80-120	0.2	20
<u>Batch B242713 - No Prep - SM 2320B 1997</u>									
Duplicate (B242713-DUP6)				Sample: FH05292-04 Prepared & Analyzed: 09/02/22					
Alkalinity - bicarbonate as CaCO3	275	mg/L			262			5	10
<u>Batch B242714 - No Prep - SM 2320B 1997</u>									
Duplicate (B242714-DUP6)				Sample: FH05292-04 Prepared & Analyzed: 09/02/22					
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
<u>Batch B242876 - No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B242876-CCB1)				Prepared & Analyzed: 09/06/22					
Chloride	0.362	mg/L							
Sulfate	0.00	mg/L							
Fluoride	0.00	mg/L							
Calibration Check (B242876-CCV1)				Prepared & Analyzed: 09/06/22					
Sulfate	4.92	mg/L		5.000		98	90-110		
Fluoride	4.98	mg/L		5.000		100	90-110		
Chloride	4.81	mg/L		5.000		96	90-110		



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B244280 - SW 3015 - EPA 6020A</u>									
Blank (B244280-BLK1)				Prepared: 09/22/22 Analyzed: 09/23/22					
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							
Lithium	< 20	ug/L							
LCS (B244280-BS1)				Prepared: 09/22/22 Analyzed: 09/23/22					
Arsenic	552	ug/L		555.6		99	80-120		
Barium	589	ug/L		555.6		106	80-120		
Beryllium	545	ug/L		555.6		98	80-120		
Boron	616	ug/L		555.6		111	80-120		
Cadmium	553	ug/L		555.6		99	80-120		
Calcium	5.83	mg/L		5.556		105	80-120		
Chromium	582	ug/L		555.6		105	80-120		
Cobalt	581	ug/L		555.6		105	80-120		
Lead	546	ug/L		555.6		98	80-120		
Magnesium	6.06	mg/L		5.556		109	80-120		
Mercury	56.2	ug/L		55.56		101	80-120		
Molybdenum	554	ug/L		555.6		100	80-120		
Potassium	5.80	mg/L		5.556		104	80-120		
Selenium	559	ug/L		555.6		101	80-120		
Sodium	5.84	mg/L		5.556		105	80-120		
Lithium	545	ug/L		555.6		98	80-120		
<u>Batch B244294 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B244294-CCB1)				Prepared & Analyzed: 09/21/22					
Chloride	0.0814	mg/L							
Sulfate	0.00	mg/L							
Calibration Check (B244294-CCV1)				Prepared & Analyzed: 09/21/22					
Sulfate	5.06	mg/L		5.000		101	90-110		
Chloride	4.99	mg/L		5.000		100	90-110		
<u>Batch B244559 - No Prep - SM 2540C</u>									
Blank (B244559-BLK1)				Prepared & Analyzed: 09/26/22					



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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B244559 - No Prep - SM 2540C</u>									
Blank (B244559-BLK1)				Prepared & Analyzed: 09/26/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B244559-BS1)				Prepared & Analyzed: 09/26/22					
Solids - total dissolved solids (TDS)	1050	mg/L		1000		105	84.9-109		
<u>Batch B245646 - No Prep - SM 4500F C 1997</u>									
Calibration Blank (B245646-CCB1)				Prepared & Analyzed: 10/07/22					
Fluoride	0.00900	mg/L							
Calibration Blank (B245646-CCB2)				Prepared & Analyzed: 10/07/22					
Fluoride	0.0180	mg/L							
Calibration Check (B245646-CCV1)				Prepared & Analyzed: 10/07/22					
Fluoride	0.732	mg/L		0.7000		105	90-110		
Calibration Check (B245646-CCV2)				Prepared & Analyzed: 10/07/22					
Fluoride	0.716	mg/L		0.7000		102	90-110		
Matrix Spike (B245646-MS1)				Prepared & Analyzed: 10/07/22					
Fluoride	1.10	mg/L		1.000	0.198	90	80-120		
Matrix Spike Dup (B245646-MSD1)				Prepared & Analyzed: 10/07/22					
Fluoride	1.16	mg/L		1.000	0.198	96	80-120	5	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

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



Certified by: Gail Schindler, Project Manager

FH05103

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
Required Client Information:

Company: **Visira Corp**
Address: **13498 E. 900th St**
Email To: **Brian.Voelker@VisiraCorp.com**
Phone: **(217) 753-9811** Fax:
Requested Due Date/TAT: **standard**

Section B
Required Project Information:

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

Section C
Invoice Information:

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

REGULATORY AGENCY

NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐
UST ☐ RCRA ☐ OTHER ☐

Site Location: **IL**
STATE:

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTEWATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WIP MATERIAL MAT OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test ↑ Y/N ↑	Requested Analysis Filtered (Y/N)										Project No./ Lab I.D.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
					DATE	TIME			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	COF_257_101	COF_257_102		COF_257_103	COF_257_104	COF_257_105	COF_WPCP_102	COF_WPCP_103	COF_WPCP_104	COF_WPCP_106	COF_811_105	Residual Chlorine (Y/N)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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ADDITIONAL COMMENTS

COF-Q3-2022 Rev 1

RELINQUISHED BY / AFFILIATION: **HyperSign** DATE: **8-24-22** TIME: **1343**

SAMPLER NAME AND SIGNATURE: **Phil Stuckey** DATE: **8-24-22** TIME: **1635**

PRINT Name of SAMPLER: **Phil Stuckey** SIGNATURE OF SAMPLER: **Phil Stuckey**

DATE Signed (MM/DD/YY): **8/23/22**

Temp in °C: **13.40**

Received on: **8-24-22** Time: **1635**

Sealed, Capped: **(M)**

Custody: **(M)**

Samples Intact: **(M)**

7705287

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Client Information:

Company: Visitra Corp

Address: 13498 E. 900th St

Report To: Brian Voelker

Copy To: Jason Stuckey

Purchase Order No.:

Project Name: Coffee

Project Number: 2285

Requested Due Date/TAT: standard

Section B Required Project Information:

Invoice Information:

Attention: Jason Stuckey

Company Name: Visitra Corp

Address: see Section A

Quote Reference:

Project Manager:

Profile #:

Section C Regulatory Agency

NPDES

GROUND WATER

RCRA

DRINKING WATER

OTHER

Site Location

STATE: IL

Requested Analysis Filtered (Y/N)

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER: DW WATER: WT WASTE WATER: WW PRODUCT: P SOIL/SOLID: SL OIL: OL WPE: WPE AIR: AIR OTHER: OTHER TISSUE: TISSUE	SAMPLE ID (A-Z 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test ↑ Y / N	COF_257_101	COF_257_102	COF_257_103	COF_257_104	COF_257_105	COF_WPCP_102	COF_WPCP_103_104	COF_WPCP_106	COF_811_105	Residual Chlorine (Y/N)	Project No./ Lab I.D.
					DATE	TIME			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other														
1		G151	WT	G	8/24/22		1406	4																						
2		G152					1329	4																						
3		G153					1313	4																						
4		G213					1354	6																						
5		G214					1647	6																						
6		G270					1414	7																						
7		G271					1536	7																						
8		G272					1640	6																						
9		G279					1602	7																						
10		G280					1658	7																						
11		G303					1420	3																						
12		G306					1553	3																						
13		G402					1356	5																						
14		G403					1507	5																						
15		G404					1539	6																						
16		G405					1701	3																						

RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		DATE		TIME		DATE		TIME		SAMPLE CONDITIONS	
Joseph P. Noll		Joseph P. Noll		8/25/22		11:58		8/25/22		14:58			

COF-Q3-2022 Rev 1

ADDITIONAL COMMENTS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YYYY): 8/24/22

Temp in °C: 2.2

Received on (Y/N)

Custody (Y/N)

Sealed Properly (Y/N)

Samples Intact (Y/N)

FD 4087

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

Section A

Required Client Information:

Company: **Vistra Corp**

Address: **13498 E. 900th St**

Section B

Required Project Information:

Report To: **Brian Voelker**

Copy To: **Jason Stuckey**

Section C

Invoice Information:

Attention: **Jason Stuckey**

Company Name: **Vistra Corp**

Address: **see Section A**

Quote Reference:

Project Manager:

Section D

Required Financial Information:

Purchase Order No.: **2285**

Project Name: **standard**

Project Number: **2285**

Section E

Required Contact Information:

Email To: **Brian.Voelker@VistraCorp.com**

Phone: **(217) 753-8911**

Fax:

Section F

Required Date/TAT:

Requested Due Date/TAT: **standard**

Section G

Required Regulatory Agency:

NPDES

GROUND WATER

RCRA

DRINKING WATER

OTHER

Section H

Required Site Location:

Site Location:

Page: **1** of **5**

[illegible]

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:					
SIGNATURE of SAMPLER:					
Joe Rod Joseph Rod		9/20/22			

COFFEEN DTW FORM Date: 8/23/2022

WELL	DTW		WELL	DTW		WELL	DTW	
G101	7.65	Pump	G206	11.21	Pump	G283	8.06	
G102	6.79	Pump	G206D	31.28	Pump	G284	12.00	
G103	10.00	Pump	G207	11.33	22.80	G285	6.44	Topol pump 8.60
R104	7.77	Pump	G208	11.04	Pump	G286	Dry	Topol pump 9.70
G105	8.60	Pump	G209	10.72	Pump	G287	Dry	
G106	9.65	Pump	G210	11.03	Pump	G288	7.68	
G107	10.53	Pump	G211	10.87	pump	G301	7.07	
G108	11.39	Pump	G212	12.08	Pump	G302	9.15	
G109	11.50	Pump	G213	12.18	Pump	G303	6.06	
G110	12.18	Pump	G214	14.85	Pump	G305	7.61	
G111	13.40	Pump	G215	14.61	Pump	G306	8.12	
G119	15.00	Pump	G216	13.92	Pump	G307	0.00	At Les. na
G120	15.07	Pump	G217	15.60	Pump	G307D	0.79	
G121	16.15	Pump	G218	14.23	Pump	G308	7.24	
G122	15.66	Pump	G270	4.03	Pump	G309	7.24	
G123	3.46	Pump	G271	16.68	Pump	G310	8.89	
G124	4.22	Pump	G272	10.19	Pump	G311	7.85	
G125	4.37	Pump	G273	11.23	Pump	G311D	23.78	
G126	9.69	Pump	G274	14.70	Pump	G312	11.28	
G151	16.31	Pump	G275	Dry	13.44	G313	2.38	
G152	11.45	Pump	G275D	39.49	Pump	G314	3.30	
G153	11.77	Pump	G276	27.34	Pump	G314D	18.00	
G154	13.00	Pump	G277	19.62	Pump	G315	3.31	
G155	12.56	Pump	G278	22.66	21.59 Pump Pan	G316	12.18	
G200	6.21	Pump	G279	23.00	Pump	G317	33.47	
R201	5.92	Pump	G280	4.10	Pump	G401	21.52	
R205	6.36	Pump	G281	6.85	Pump	G402	10.01	
G403	8.54	Pump	T409	14.28				

✓ G404	5.41	pump	TA31	7.89	23.05	G1001	unable	to locate
✓ G405	6.78	pump	TA33	9.35		G1003	⊥	⊥
✓ G406	11.89	pump	TA34	9.51				
✓ G407	7.27	pump	TR32	5.91				
✓ G410	8.81	pump	X201	✓	—			
✓ G411	7.78	pump	✓ XPW01	7.90				
G45D	9.23		✓ XPW02	8.88				
✓ G46D	10.11		✓ XSG01	3.07				
MW03D	30.26							
MW04S	7.19							
MW05S	8.08							
MW10S	6.65							
MW11D	5.12							
MW11S	4.41							
MW12D	12.93	50.20						
MW12S	wasp on cap							
MW16D	11.75	53.35						
MW16S	9.45	22.18						
MW20S	10.21	16.20						
NE RISER	—	—						
✓ SG02	7.45							
✓ SG03	9.81							
SG04	6.16							
T127	14.44							
T128	14.50							
T202	6.44							
T406	7.10							
T408	7.09	—						

SITE

COFFEEN

SAMPLE POINT

G270

Date: 8-24-22 Start Time: 1300 Finish/Sample Time: 1414Well Depth (Bottom) From MP: 21.13 ftDepth to Water From MP: 4.57 ftWell Water Volume: 10.02 LWater Column Length: 16.56 ftTotal Purge Volume: 1.6 mL/L

Reading	Time	pH	Spec Con	Temp	DO	Turbidity	ORP
(Units)		s.u.	umhos/cm	deg C	mg/L	NTU	MV
1	1320	7.33	745.58	19.83	0.73	4.71	109.2
2	1322	7.30	744.40	19.75	0.66	3.37	108.7
3	1324	7.29	745.60	19.70	0.60	3.03	108.7
4							
5							

Sampled with:

AT600 739449

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ StrongColor: ☒ None ☐ Slight ☐ Mod. ☐ StrongTurb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment

70-82°F, sunny, wind 0mph

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Phenols (A,G,250mL, H2SO4)
1	Cyanide (P, 250mL, NaOH)
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)
1	P, 2.5L, HNO3

Filtered	
Qty	Bottles
1	Metals (P,250mL, HNO3)
1	General (P,500mL)

Comments

FDTW: 4.88 ft; overgrown vegetation

Sampler's Signature:

[Signature]

SITE

COFFEEN GMZ

WELL/SAMPLE POINT

G281

Date: 8/25/2022 Start Time: 10 10 Finish/Sample Time: 1121

Well Depth (Bottom) From MP: _____ ft

Depth to Water From MP: 2.05 ft

Well Water Volume: _____ L

Water Column Length: _____ ft

Total Purge Volume: 1000 (mL) / L

Reading	Time	pH	Spec Con	Temp	DO	Turbidity	ORP	
(Units)		(s.u.)	(umhos/cm)	(deg C)	(mg/L)	(NTU)	(mV)	
1	1030	6.83	1060	20.8	0.92	117.0	-7.0	DTL
2	1032	6.83	1060	20.9	1.02	117.0	-1.0	7.18
3	1034	6.83	1060	21.0	1.02	118.0	4.0	7.18
4								7.18
5								

Sampled with: bladder

Sample Appearance: Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong
 Color ☐ None ☐ Slight ☐ Mod. ☐ Strong
 Turb ☐ None ☐ Slight ☒ Mod ☐ Strong

Weather:/Environment _____

Remarks: _____

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Phenols (A,G,250mL, H2SO4)
1	Cyanide (P, 250mL, NaOH)
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)
1	P, 2.5L, HNO3

Filtered	
Qty	Bottles
1	Metals (P,250mL, HNO3)
	General (P,500mL)
	In-Line Filters Used

Comments _____

Sampler's Signature: [Signature]

SITE

COFFEEN GMZ

WELL/SAMPLE POINT

G401

Date: 8/24/22 Start Time: 1130 Finish/Sample Time: 1144Well Depth (Bottom) From MP: 22.01 ftDepth to Water From MP: 21.60 ftWater Column Length: 0.41 ftWell Water Volume: 0.24 L

Total Purge Volume: _____ mL / L

Reading	Time	pH	Spec Con	Temp	DO	Turbidity	ORP
(Units)		(s.u.)	(umhos/cm)	(deg C)	(mg/L)	(NTU)	(mV)
1							
2							
3							
4							
5							

Sampled with: AT 600Sample Appearance: Odor: ☐ None ☐ Slight ☐ Mod. ☐ StrongColor ☐ None ☐ Slight ☐ Mod. ☐ StrongTurb ☐ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment _____

Remarks: _____

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	Phenols (A,G,250mL, H2SO4)
	Cyanide (P, 250mL, NaOH)
	Metals (P, 250mL, HNO3)
	General (P, 500mL)

Filtered	
Qty	Bottles
	Metals (P,250mL, HNO3)
	General (P,500mL)
	In-Line Filters Used

Comments Well DRYSampler's Signature: 

Site: Coffeen GMZ

WELL/SAMPLE POINT **G401**

Purge Method: Compressor

Date: 20-Sept-22 Start Time: 1100 Finish/Sample Time: 1240

Well Depth (Bottom) From MP: 28.90 ft Min. Purge Volume: 1 Gal / 1

Depth to Water From MP: 21.30 ft 21.63 Total Purge Volume: 1 Gal / 1

Water Column Length: 2.27 ft Max Drawdown: 1 ft

Well Water Volume: 1.37 Gal / L Total Drawdown: 1 ft

Reading (Units)	Time	Depth (ft.)	Flow Rate (mL/min)	pH (s.u.)	Spec Cond (umhos/cm)	Temp (deg C)	ORP (mV)	DO (mg/L)	Turb (NTU)
1	1116	—	100	6.14	303.7	23.41	4.7	0.46	4.52
2									
3									
4									
5									
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: AT 600

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color: ☐ None ☒ Slight ☐ Mod. ☐ Strong

Turb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Well Integrity	Yes	No
Well has ID sign	☒	☐
Casing locked/secure	☐	☒
Well cap fits securely.	☐	☒
Good seal/drainage	☒	☐
Well has weep holes	☐	☒

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	VOAs (C,V, 40mL, HCL)
	VOAS (C,V, 40mL)
	Organics (A,G,U 1000mL)
	Organics (A,G,U 500mL)
	TOC (A,V 40mL, H2SO4)
	TOX (A,G 250mL, H2SO4)
1	Metals (P,250mL, HNO3)
1	Cyanide (P, 250mL, NaOH)
	Phenols (A,G,250mL, H2SO4)
1	General (P, 250 mL) <u>820/mL</u>
1	<u>2.5 L HNO3</u>

Filtered	
Qty	Bottles
1	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2SO4)
	General (P,500mL)
	In-Line Filters Used

Final DTW: 1 ft

Comments

Only 1 READ WATER LEVEL LOW, FDTW below pump
HAD TO LET WELL RECHARGE

Sampler's Signature: [Signature]

SITE

COFFEEN GMZ

WELL/SAMPLE POINT

G402

1300

Date:

8/24/22

Start Time:

1154

Finish/Sample Time:

1356

Well Depth (Bottom) From MP:

18.70 ft

Depth to Water From MP:

10.16 ft

Well Water Volume:

5.17 L

Water Column Length:

8.54 ft

Total Purge Volume:

1000 ml

Reading	Time	pH	Spec Con	Temp	DO	Turbidity	ORP
(Units)		(s.u.)	(umhos/cm)	(deg C)	(mg/L)	(NTU)	(mV)
1	1325	6.72	1848.90	18.96	6.28	203.20	137.00
2	1326	6.79	1842.10	19.57	6.51	138.04	137.50
3	1327	6.78	1844.10	19.83	6.44	128.29	138.20
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

Remarks:

BOTTLE INFORMATION:

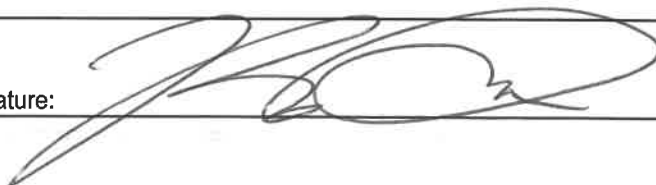
Unfiltered	
Qty	Bottles
1	Phenols (A,G,250mL, H2SO4)
1	Cyanide (P, 250mL, NaOH)
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)
1	P, 250mL, HNO3

5

Filtered	
Qty	Bottles
1	Metals (P,250mL, HNO3)
	General (P,500mL)
	In-Line Filters Used

Comments

Sampler's Signature:



SITE

COFFEEN GMZ

WELL/SAMPLE POINT

G403

Date:

8/24/22

Start Time:

1410

Finish/Sample Time:

1507

Well Depth (Bottom) From MP:

19.76 ft

Depth to Water From MP:

7.86 ft

Well Water Volume:

7.20 L

Water Column Length:

11.90 ft

Total Purge Volume:

1000 mL

Reading	Time	pH	Spec Con	Temp	DO	Turbidity	ORP
(Units)		(s.u.)	(umhos/cm)	(deg C)	(mg/L)	(NTU)	(mV)
1	1427	6.67	750.58	19.48	0.87	18.07	7.30
2	1428	6.65	750.17	19.41	0.99	4.16	9.10
3	1429	6.67	747.08	19.18	0.92	3.97	11.00
4							
5							

Sampled with:

AT 600

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ StrongColor: ☐ None ☒ Slight ☐ Mod. ☐ StrongTurb: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Weather/Environment

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	Phenols (A,G,250mL, H2SO4)
1	Cyanide (P, 250mL, NaOH)
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)
1	9.25L H2O3 HNO3

5

Filtered	
Qty	Bottles
1	Metals (P,250mL, HNO3)
	General (P,500mL)
	In-Line Filters Used

Comments

Sampler's Signature:



SITE

COFFEEN GMZ

WELL/SAMPLE POINT

G404

Date: 8/24/2022 Start Time: 1423 Finish/Sample Time: 1538Well Depth (Bottom) From MP: 10.76 ftDepth to Water From MP: 5.49 ft

Well Water Volume: _____ L

Water Column Length: _____ ft

Total Purge Volume: 1000 mL

Reading	Time	pH	Spec Con	Temp	DO	Turbidity	ORP	
(Units)		(s.u.)	(umhos/cm)	(deg C)	(mg/L)	(NTU)	(mV)	
1	1450	6.47	1080	22.7	0.54	10.1	37.0	DTW
2	1452	6.46	1670	22.7	0.52	3.6	29.0	PL
3	1454	6.46	1660	22.7	0.50	0.0	26.0	6.04
4								6.04
5								6.04

Sampled with: blasterSample Appearance: Odor: ☒ None ☐ Slight ☐ Mod. ☐ StrongColor: ☒ None ☐ Slight ☐ Mod. ☐ StrongTurb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment _____

Remarks: _____

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	Phenols (A,G,250mL, H2SO4)
1	Cyanide (P, 250mL, NaOH)
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)
1	P, 250L, HNO3

Filtered	
Qty	Bottles
1	Metals (P,250mL, HNO3)
	General (P,500mL)
	In-Line Filters Used

Comments: Final DTW - 6.04 PL

Sampler's Signature: _____

SITE

COFFEEN GMZ

WELL/SAMPLE POINT

G405

RAP 8/24/22

1701

Date: 8/24/2022 Start Time: 1550

Finish/Sample Time: 1501

Well Depth (Bottom) From MP: 10.95 ft

Depth to Water From MP: 6.58 ft

Well Water Volume: L

Water Column Length: ft

Total Purge Volume: 1000 mL L

Reading	Time	pH	Spec Con	Temp	DO	Turbidity	ORP	
(Units)		(s.u.)	(umhos/cm)	(deg C)	(mg/L)	(NTU)	(mV)	
1	1617	6.75	1500	22.9	0.91	0.4	43.0	DTW
2	1619	6.74	1530	22.9	0.82	0.0	38.0	PL
3	1621	6.73	1540	22.8	0.74	0.1	38.0	6.79
4								6.79
5								6.79

Sampled with: 6/10/22

Sample Appearance: Odor: ☒ None ☐ Slight ☐ Mod. ☐ StrongColor: ☒ None ☐ Slight ☐ Mod. ☐ StrongTurb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	Phenols (A,G,250mL, H2SO4)
1	Cyanide (P, 250mL, NaOH)
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)
1	P, 2.5L, HNO3

5

Filtered	
Qty	Bottles
1	Metals (P,250mL, HNO3)
	General (P,500mL)
	In-Line Filters Used

Comments

Final DTW - 6.79 PL

Sampler's Signature:

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Joe Reed</u>	Location: <u>Colleen</u>
Weather:	Environment:

Multiparameter Water Meter	Make: <u>Aqua Troll</u>	Model: <u>600</u>	Serial Number: <u>846000</u>
Water Level Meter	Make: <u>Solinst</u>	Model: <u>101</u>	Serial Number: <u>269022</u>

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.01</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	L315-04	11/22/2023
pH 7.00a	<u>7.00</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	L172-33	6/23/2023
pH 10.00a	<u>9.96</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	L354-22	1/5/2024
SC Zero (DI)	<u>0.0</u>	µS/cm	0<25 µS/cm	<u>P</u>	<u>NO</u>		Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>1984.1</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>		Geotech	1GK328	Nov-22
ORP	<u>277.3</u>	mV	±15 mV	<u>P</u>	<u>NO</u>		InSitu	1GL481	Sep-22
DO (Zero pt)	<u>0.04</u>	mg/L	±0.1	<u>P</u>	<u>NO</u>		Macron	#000228049	8/26/2025
DO (Saturated)	<u>9.9</u>	%	97-100%	<u>P</u>	<u>NO</u>		Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>		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	<u>3.99</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>None</u>	Geotech	1GF009	Jun-23	
pH 7.00b	<u>7.02</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>None</u>	Geotech	0GJ268	Oct-22	
pH 10.00b	<u>10.01</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>None</u>	Geotech	1GF458	Jun-23	
SC 1000	<u>999.1</u>	µS/cm	±5%	<u>P</u>	<u>None</u>	Ricca	2108D48	Jul-23	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):						Time: <u>1900</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.02</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	L315-04	11/22/2023
pH 7.00a	<u>7.05</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	L172-33	6/23/2023
pH 10.00a	<u>10.01</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	L354-22	1/5/2024
SC 1000	<u>1031.1</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>		Ricca	2108D48	Jul-23
DO (Zero pt)	<u>0.04</u>	mg/L	±0.1 mg/L	<u>P</u>	<u>NO</u>		Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.1</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>		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: <u>Joseph A Reed</u>	Date: <u>8/23/22</u>
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Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Sam Grant</u>				Location: <u>Coffeen</u>			
Weather: <u>80-84°F, sunny wind 2mph</u>				Environment: <u>grass/gravel road</u>			
Multiparameter Water Meter		Make:	InSitu	Model:	Aquatroll 600	Serial Number:	<u>739449</u>
Water Level Meter		Make:	Heron	Model:	Dipper-T	Serial Number:	<u>19FF22G152HB</u>

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.08</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>3-pt.</u>	<u>4.00</u>	MSI	L153-17	6/8/2023
pH 7.00a	<u>7.16</u>	s.u.	±0.1 s.u.	<u>F</u>	<u>I</u>	<u>7.00</u>	MSI	L172-33	8/23/2023
pH 10.00a	<u>10.05</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>I</u>	<u>10.00</u>	MSI	L118-08	5/12/2023
SC Zero (DI)	<u>11.71</u>	µS/cm	0<25 µS/cm	<u>P</u>	<u>N</u>	<u>NA</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>1969.4</u>	µS/cm	±5%	<u>I</u>	<u>I</u>	<u>I</u>	Geotech	1GJ517	Oct-22
ORP	<u>217.8 @ 25.73mV</u>	mV	±15 mV	<u>I</u>	<u>I</u>	<u>I</u>	InSitu	1Gk507	Aug-22
DO (Zero pt)	<u>0.07</u>	mg/L	±0.1	<u>I</u>	<u>I</u>	<u>I</u>	Fischer Chemical	168261	8/26/2025
DO (Saturated)	<u>100.00</u>	%	97-100%	<u>I</u>	<u>I</u>	<u>I</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>1.10</u>	NTU	<2 NTU	<u>I</u>	<u>I</u>	<u>I</u>	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: <u>1304</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	<u>3.92</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>None</u>	Geotech	1GH562	Aug-22
pH 7.00b	<u>6.87</u>	s.u.	±0.15 s.u.	<u>I</u>	<u>I</u>	Geotech	1GD360	Apr-22
pH 10.00b	<u>9.94</u>	s.u.	±0.15 s.u.	<u>I</u>	<u>I</u>	Geotech	1GE278	Mar-22
SC 1000	<u>980.71</u>	µS/cm	±5%	<u>I</u>	<u>I</u>	Ricca	2107D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: <u>1904</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.03</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>NA</u>	MSI	L153-17	6/8/2023
pH 7.00a	<u>7.08</u>	s.u.	±0.1 s.u.	<u>I</u>	<u>I</u>	<u>I</u>	MSI	L172-33	8/23/2023
pH 10.00a	<u>10.04</u>	s.u.	±0.1 s.u.	<u>I</u>	<u>I</u>	<u>I</u>	MSI	L118-08	5/12/2023
SC 1000	<u>1003.9</u>	µS/cm	±5%	<u>I</u>	<u>I</u>	<u>I</u>	Ricca	2108D48	Jul-23
DO (Zero pt)	<u>0.09</u>	mg/L	±0.1 mg/L	<u>I</u>	<u>I</u>	<u>I</u>	Fischer Chemical	168261	8/26/2025
Turbidity (DI)	<u>1.11</u>	NTU	<2 NTU	<u>I</u>	<u>I</u>	<u>I</u>	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	L153-17	6/8/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	8/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L118-08	5/12/2023
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Fischer Chemical	168261	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature: <u>Sam Grant</u>	Date: <u>8-23-22</u>
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Multiparameter Meter Field Calibration Checklist

Field Personnel: <i>Austin Moore Brandon Glenn</i>		Location: <i>Coffee Power station</i>	
Weather: <i>H: 81° L: 57° W: SW 0MPH Sunny</i>		Environment: <i>Grassy</i>	
Multiparameter Water Meter	Make: <i>Aquatroll</i>	Model: <i>600</i>	Serial Number: <i>762098</i>
Water Level Meter	Make: <i>Solinst</i>	Model: <i>Water Tape 101</i>	Serial Number: <i>336216</i>

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<i>7.02</i>	s.u.	±0.1 s.u.	<i>P</i>			MSI	L315-04	11/22/2023
pH 7.00a	<i>6.92</i>	s.u.	±0.1 s.u.	<i>P</i>			MSI	L172-33	6/23/2023
pH 10.00a	<i>9.98</i>	s.u.	±0.1 s.u.	<i>P</i>			MSI	L354-22	1/5/2024
SC Zero (DI)	<i>844.1</i>	µS/cm	0<25 µS/cm	<i>P</i>			Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<i>1911.2</i>	µS/cm	±5%	<i>P</i>			Geotech	1GK328	Nov-22
ORP	<i>213.6</i>	mV	±15 mV	<i>P</i>			InSitu	1GL481	Sep-22
DO (Zero pt)	<i>.03</i>	mg/L	±0.1	<i>P</i>			Macron	#000228049	8/26/2025
DO (Saturated)	<i>48.39</i>	%	97-100%	<i>P</i>			Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<i>1.08</i>	NTU	<2 NTU	<i>P</i>			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: <i>0830</i>				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<i>4.03</i>	s.u.	±0.15 s.u.	<i>P</i>		Geotech	1GF009	Jun-23	
pH 7.00b	<i>6.85</i>	s.u.	±0.15 s.u.	<i>P</i>		Geotech	0GJ268	Oct-22	
pH 10.00b	<i>9.93</i>	s.u.	±0.15 s.u.	<i>P</i>		Geotech	1GF458	Jun-23	
SC 1000	<i>1024.3</i>	µS/cm	±5%	<i>P</i>		Ricca	2108D48	Jul-23	

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	<i>4.13</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>Y</i>	<i>4.00</i>	MSI	L315-04	11/22/2023
pH 7.00a	<i>7.10</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>Y</i>	<i>7.00</i>	MSI	L172-33	6/23/2023
pH 10.00a	<i>10.09</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>Y</i>	<i>10.00</i>	MSI	L354-22	1/5/2024
SC 1000	<i>1026.0</i>	µS/cm	±5%	<i>P</i>			Ricca	2108D48	Jul-23
DO (Zero pt)	<i>0.05</i>	mg/L	±0.1 mg/L	<i>P</i>			Macron	#000228049	8/26/2025
Turbidity (DI)	<i>1.41</i>	NTU	<2 NTU	<i>P</i>			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: <i>Austin Moore</i>	Date: <i>8/23/22</i>
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Brandon Glenn

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Sylvia Jones</u>				Location: <u>Coffee</u>					
Weather: <u>81 to 94° sunny</u>				Environment: <u>Dry</u>					
Multiparameter Water Meter		Make: <u>Pelicon</u>	Model: <u>HonBa</u>	Serial Number: <u>V4V1FVTF</u>					
Water Level Meter		Make:	Model:	Serial Number:					

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.08</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>Ne</u>	<u>N/A</u>	MSI	L344-09	12/14/2023
pH 7.00a	<u>—</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>Ne</u>	<u>N/A</u>	MSI	L343-07	12/9/2023
pH 10.00a	<u>—</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>Ne</u>	<u>N/A</u>	MSI	M082-04	3/25/2024
SC Zero (DI)	<u>4.490</u>	µS/cm	0<25 µS/cm	<u>P</u>	<u>Ne</u>	<u>N/A</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>—</u>	µS/cm	±5%	<u>P</u>	<u>Ne</u>	<u>N/A</u>	Geotech	1GK328	Nov-22
ORP	<u>—</u>	mV	±15 mV	<u>P</u>	<u>Ne</u>	<u>N/A</u>	InSitu	1GL481	Sep-22
DO (Zero pt)	<u>9.50</u>	mg/L	±0.1	<u>P</u>	<u>Ne</u>	<u>N/A</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>—</u>	%	97-100%	<u>P</u>	<u>Ne</u>	<u>N/A</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.3</u>	NTU	<2 NTU	<u>P</u>	<u>Ne</u>	<u>N/A</u>	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: <u>8:35 AM</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>—</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>Ne</u>	Geotech	1GF009	Jun-23	
pH 7.00b	<u>—</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>Ne</u>	Geotech	0GJ268	Oct-22	
pH 10.00b	<u>—</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>Ne</u>	Geotech	1GF458	Jun-23	
SC 1000	<u>—</u>	µS/cm	±5%	<u>P</u>	<u>Ne</u>	Ricca	1111A87	Nov-22	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: <u>7:09 PM</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.03</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>Ne</u>	<u>N/A</u>	MSI	L315-04	11/22/2023
pH 7.00a	<u>—</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>Ne</u>	<u>N/A</u>	MSI	L172-33	6/23/2023
pH 10.00a	<u>—</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>Ne</u>	<u>N/A</u>	MSI	L354-22	1/5/2024
SC 1000	<u>—</u>	µS/cm	±5%	<u>P</u>	<u>Ne</u>	<u>N/A</u>	Ricca	2108D48	Jul-23
DO (Zero pt)	<u>7.30</u>	mg/L	±0.1 mg/L	<u>P</u>	<u>Ne</u>	<u>N/A</u>	Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.25</u>	NTU	<2 NTU	<u>P</u>	<u>Ne</u>	<u>N/A</u>	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: <u>[Signature]</u>	Date: <u>8-23-22</u>
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Multiparameter Meter Field Calibration Checklist

Field Personnel: <i>AP</i>				Location: <i>Colleen</i>			
Weather: <i>73-74°F sunny with NW 1 mph</i>				Environment: <i>grass, gravel, J.A.</i>			
Multiparameter Water Meter		Make: <i>Hanna</i>	Model: <i>U-5000</i>	Serial Number: <i>PW2 GY 503</i>			
Water Level Meter		Make: <i>Hanna</i>	Model: <i>Digital</i>	Serial Number: <i>19HL 2202131ML</i>			

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<i>4.02</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>-</i>	MSI	L344-09	12/14/2023
pH 7.00a	<i>-</i>	s.u.	±0.1 s.u.	<i>-</i>	<i>-</i>	<i>-</i>	MSI	L343-07	12/9/2023
pH 10.00a	<i>-</i>	s.u.	±0.1 s.u.	<i>-</i>	<i>-</i>	<i>-</i>	MSI	M082-04	3/25/2024
SC Zero (DI)	<i>-</i>	µS/cm	0<25 µS/cm	<i>-</i>	<i>-</i>	<i>-</i>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<i>4770</i>	µS/cm	±5%	<i>P</i>	<i>NO</i>	<i>-</i>	Geotech	1GK328	Nov-22
ORP	<i>-</i>	mV	±15 mV	<i>-</i>	<i>-</i>	<i>-</i>	InSitu	1GL481	Sep-22
DO (Zero pt)	<i>9.75</i>	mg/L	±0.1	<i>P</i>	<i>NO</i>	<i>-</i>	Macron	#000228049	8/26/2025
DO (Saturated)	<i>-</i>	%	97-100%	<i>-</i>	<i>-</i>	<i>-</i>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<i>0.0</i>	NTU	<2 NTU	<i>P</i>	<i>NO</i>	<i>-</i>	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: <i>0835</i>				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<i>-</i>	s.u.	±0.15 s.u.	<i>-</i>	<i>-</i>	Geotech	1GF009	Jun-23	
pH 7.00b	<i>-</i>	s.u.	±0.15 s.u.	<i>-</i>	<i>-</i>	Geotech	0GJ268	Oct-22	
pH 10.00b	<i>-</i>	s.u.	±0.15 s.u.	<i>-</i>	<i>-</i>	Geotech	1GF458	Jun-23	
SC 1000	<i>-</i>	µS/cm	±5%	<i>-</i>	<i>-</i>	Ricca	1111A87	Nov-22	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: <i>1833</i>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<i>4.08</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>-</i>	MSI	L315-04	11/22/2023
pH 7.00a	<i>-</i>	s.u.	±0.1 s.u.	<i>-</i>	<i>-</i>	<i>-</i>	MSI	L172-33	6/23/2023
pH 10.00a	<i>-</i>	s.u.	±0.1 s.u.	<i>-</i>	<i>-</i>	<i>-</i>	MSI	L354-22	1/5/2024
SC 1000	<i>4820</i>	µS/cm	±5%	<i>P</i>	<i>NO</i>	<i>-</i>	Ricca	2108D48	Jul-23
DO (Zero pt)	<i>9.69</i>	mg/L	±0.1 mg/L	<i>P</i>	<i>NO</i>	<i>-</i>	Macron	#000228049	8/26/2025
Turbidity (DI)	<i>0.0</i>	NTU	<2 NTU	<i>P</i>	<i>NO</i>	<i>-</i>	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: <i>[Signature]</i>	Date: <i>8/23/22</i>
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Multiparameter Meter Field Calibration Checklist

Field Personnel: Kyle Lane				Location: Coffeen					
Weather: 81° Sunny				Environment: Dry and dusty					
Multiparameter Water Meter		Make: in-situ	Model: AT 600	Serial Number: 762098					
Water Level Meter		Make: Solinst	Model: 101	Serial Number: 269022					

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.06	s.u.	±0.1 s.u.	P	Yes	No	MSI	L315-04	11/22/2023
pH 7.00a	7.03	s.u.	±0.1 s.u.	P	Yes	No	MSI	L172-33	6/23/2023
pH 10.00a	10.05	s.u.	±0.1 s.u.	P	Yes	No	MSI	L354-22	1/5/2024
SC Zero (DI)	23.58	µS/cm	0<25 µS/cm	P	Yes	No	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	19.580	µS/cm	±5%	P	Yes	No	Geotech	1GK328	Nov-22
ORP	22.49/216.5	mV	±15 mV	P	Yes	No	InSitu	1GL481	Sep-22
DO (Zero pt)	0.01	mg/L	±0.1	P	Yes	No	Macron	#000228049	8/26/2025
DO (Saturated)	98.46	%	97-100%	P	Yes	No	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.836	NTU	<2 NTU	P	Yes	No	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 08:12				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	4.06	s.u.	±0.15 s.u.	P	NA	Geotech	1GF009	Jun-23	
pH 7.00b	6.93	s.u.	±0.15 s.u.	P	NA	Geotech	0GJ268	Oct-22	
pH 10.00b	10.02	s.u.	±0.15 s.u.	P	NA	Geotech	1GF458	Jun-23	
SC 1000	1013.2	µS/cm	±5%	P	NA	Ricca	2108D48	Jul-23	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 17:03				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.05	s.u.	±0.1 s.u.	P	NA	NA	MSI	L315-04	11/22/2023
pH 7.00a	7.01	s.u.	±0.1 s.u.	P	NA	NA	MSI	L172-33	6/23/2023
pH 10.00a	9.98	s.u.	±0.1 s.u.	P	NA	NA	MSI	L354-22	1/5/2024
SC 1000	997.8	µS/cm	±5%	P	NA	NA	Ricca	2108D48	Jul-23
DO (Zero pt)	0.01	mg/L	±0.1 mg/L	P	NA	NA	Macron	#000228049	8/26/2025
Turbidity (DI)	0.41	NTU	<2 NTU	P	NA	NA	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: Kyle Lane	Date: 8-24-2022
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Multiparameter Meter Field Calibration Checklist

Field Personnel: <i>AT</i>				Location: <i>Colleen</i>					
Weather: <i>70°-81° R Sunny wind W 0 mph</i>				Environment: <i>gravel, gravel, 1:1L</i>					
Multiparameter Water Meter		Make: <i>Horsba</i>	Model: <i>45000</i>	Serial Number: <i>PW264703</i>					
Water Level Meter		Make: <i>Herm</i>	Model: <i>D.1112</i>	Serial Number: <i>19 H 2202131M</i>					

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<i>4.08</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>-</i>	MSI	L344-09	12/14/2023
pH 7.00a	<i>-</i>	s.u.	±0.1 s.u.	<i>-</i>	<i>-</i>	<i>-</i>	MSI	L343-07	12/9/2023
pH 10.00a	<i>-</i>	s.u.	±0.1 s.u.	<i>-</i>	<i>-</i>	<i>-</i>	MSI	M082-04	3/25/2024
SC Zero (DI)	<i>-</i>	µS/cm	0<25 µS/cm	<i>-</i>	<i>-</i>	<i>-</i>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<i>4500</i>	µS/cm	±5%	<i>P</i>	<i>NO</i>	<i>-</i>	Geotech	1GK328	Nov-22
ORP	<i>-</i>	mV	±15 mV	<i>-</i>	<i>-</i>	<i>-</i>	InSitu	1GL481	Sep-22
DO (Zero pt)	<i>0.48</i>	mg/L	±0.1	<i>P</i>	<i>NO</i>	<i>-</i>	Macron	#000228049	8/26/2025
DO (Saturated)	<i>-</i>	%	97-100%	<i>-</i>	<i>-</i>	<i>-</i>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<i>0.0</i>	NTU	<2 NTU	<i>P</i>	<i>NA</i>	<i>-</i>	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: <i>0819</i>			
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: <i>1720</i>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<i>4.07</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>N/A</i>	MSI	L315-04	11/22/2023
pH 7.00a	<i>-</i>	s.u.	±0.1 s.u.	<i>-</i>	<i>-</i>	<i>-</i>	MSI	L172-33	6/23/2023
pH 10.00a	<i>-</i>	s.u.	±0.1 s.u.	<i>-</i>	<i>-</i>	<i>-</i>	MSI	L354-22	1/5/2024
SC 1000	<i>4550</i>	µS/cm	±5%	<i>P</i>	<i>NO</i>	<i>-</i>	Ricca	2108D48	Jul-23
DO (Zero pt)	<i>10.02</i>	mg/L	±0.1 mg/L	<i>P</i>	<i>NO</i>	<i>-</i>	Macron	#000228049	8/26/2025
Turbidity (DI)	<i>0.0</i>	NTU	<2 NTU	<i>P</i>	<i>NO</i>	<i>-</i>	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: *horsba station 458*

Signature: <i>[Signature]</i>	Date: <i>8/24/2022</i>
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Multiparameter Meter Field Calibration Checklist

Field Personnel:	Sam Grant	Location:	Coffeen
Weather:	70-82°F, sunny, wind 0 mph	Environment:	gravel road, tall grass

Multiparameter Water Meter		Make:	InSitu	Model:	Aquatroll 600	Serial Number:	739449		
Water Level Meter		Make:	Heron	Model:	Dipper-T	Serial Number:	19FF2201152HB		
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.81	s.u.	±0.1 s.u.	F	3-pt.	4.00	MSI	L153-17	6/8/2023
pH 7.00a	6.89	s.u.	±0.1 s.u.	I	I	7.00	MSI	L172-33	8/23/2023
pH 10.00a	9.92	s.u.	±0.1 s.u.	P	I	10.00	MSI	L118-08	5/12/2023
SC Zero (DI)	21.12	µS/cm	0<25 µS/cm	P	N	NA	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1928.1	µS/cm	±5%	I	I	I	Geotech	1GJ517	Oct-22
ORP	224.1 @ 24.58	mV	±15 mV	I	I	I	InSitu	1Gk507	Aug-22
DO (Zero pt)	0.02	mg/L	±0.1	I	I	I	Fischer Chemical	168261	8/26/2025
DO (Saturated)	97.81	%	97-100%	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.07	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time:	0830		
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.01	s.u.	±0.15 s.u.	P	None	Geotech	1GH562	Aug-22
pH 7.00b	6.87	s.u.	±0.15 s.u.	I	I	Geotech	1GD360	Apr-22
pH 10.00b	9.89	s.u.	±0.15 s.u.	I	I	Geotech	1GE278	Mar-22
SC 1000	1020.9	µS/cm	±5%	I	I	Ricca	2107D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:	1728			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.09	s.u.	±0.1 s.u.	P	N	NA	MSI	L153-17	6/8/2023
pH 7.00a	7.08	s.u.	±0.1 s.u.	I	I	I	MSI	L172-33	8/23/2023
pH 10.00a	10.10	s.u.	±0.1 s.u.	I	I	I	MSI	L118-08	5/12/2023
SC 1000	1023.9	µS/cm	±5%	I	I	I	Ricca	2108D48	Jul-23
DO (Zero pt)	0.09	mg/L	±0.1 mg/L	I	I	I	Fischer Chemical	168261	8/26/2025
Turbidity (DI)	0.00	NTU	<2 NTU	I	I	I	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	L153-17	6/8/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	8/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L118-08	5/12/2023
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Fischer Chemical	168261	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:									
Signature:	Sam Grant				Date:	8-24-22			

Multiparameter Meter Field Calibration Checklist

Field Personnel: RALEIGH DESKE				Location: COFFEEN			
Weather: 80° SUNNY WIND S-MPH W				Environment: GRASSY			
Multiparameter Water Meter		Make: AT	Model: 600	Serial Number: 762193			
Water Level Meter		Make: WT	Model: HERON	Serial Number: 19FF211192HB			

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.02	s.u.	±0.1 s.u.	Pass	No	N/A	MSI	L315-04	11/22/2023
pH 7.00a	7.01	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	10.01	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC Zero (DI)	3.20	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2038.5	µS/cm	±5%				Geotech	1GK328	Nov-22
ORP	160.10	mV	±15 mV				InSitu	1GL481	Sep-22
DO (Zero pt)	0.08	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	99	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	1.32	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 1103	
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer
pH 4.00b	3.93	s.u.	±0.15 s.u.	Pass	No	Geotech
pH 7.00b	7.04	s.u.	±0.15 s.u.			Geotech
pH 10.00b	9.99	s.u.	±0.15 s.u.			Geotech
SC 1000	998.4	µS/cm	±5%			Ricca

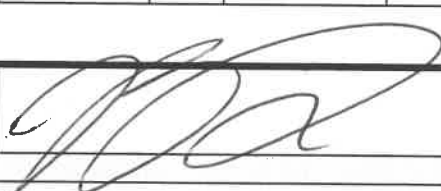
Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1500				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	s.u.	±0.1 s.u.	Pass	No	N/A	MSI	L315-04	11/22/2023
pH 7.00a	7.06	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	10.03	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000	994.4	µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)	0.00	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	1.24	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: 	Date: 8/24/22
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Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Austin Moore</u>				Location: <u>Coffeen</u>			
Weather: <u>82°-57° Sunny</u> ^{wind} <u>SE 1 mph</u>				Environment: <u>Grassy</u>			
Multiparameter Water Meter		Make: <u>AT-600</u>	Model: <u>600</u>	Serial Number: <u>846000</u>			
Water Level Meter		Make: <u>Solinst</u>	Model: <u>BNT</u>	Serial Number: <u>336216</u>			

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.03</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	L315-04	11/22/2023
pH 7.00a	<u>7.01</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	L172-33	6/23/2023
pH 10.00a	<u>10.01</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	L354-22	1/5/2024
SC Zero (DI)	<u>4.78</u>	µS/cm	0<25 µS/cm	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>1921.8</u>	µS/cm	±5%	<u>P</u>			Geotech	1GK328	Nov-22
ORP	<u>231.8</u>	mV	±15 mV	<u>P</u>			InSitu	1GL481	Sep-22
DO (Zero pt)	<u>0.01</u>	mg/L	±0.1	<u>P</u>			Macron	#000228049	8/26/2025
DO (Saturated)	<u>97.83</u>	%	97-100%	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>1.83</u>	NTU	<2 NTU	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: <u>0810</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>4.06</u>	s.u.	±0.15 s.u.	<u>P</u>		Geotech	1GF009	Jun-23	
pH 7.00b	<u>6.85</u>	s.u.	±0.15 s.u.	<u>P</u>		Geotech	0GJ268	Oct-22	
pH 10.00b	<u>9.89</u>	s.u.	±0.15 s.u.	<u>P</u>		Geotech	1GF458	Jun-23	
SC 1000	<u>982.20</u>	µS/cm	±5%	<u>P</u>		Ricca	2108D48	Jul-23	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: <u>1722</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.01</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	L315-04	11/22/2023
pH 7.00a	<u>6.99</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	L172-33	6/23/2023
pH 10.00a	<u>8.96</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	L354-22	1/5/2024
SC 1000	<u>669.94</u>	µS/cm	±5%	<u>P</u>			Ricca	2108D48	Jul-23
DO (Zero pt)	<u>0.02</u>	mg/L	±0.1 mg/L	<u>P</u>			Macron	#000228049	8/26/2025
Turbidity (DI)	<u>1.66</u>	NTU	<2 NTU	<u>P</u>			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: <u>Austin Moore</u>	Date: <u>24-Aug-22</u>
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Multiparameter Meter Field Calibration Checklist

Field Personnel: Joe Reed		Location: Coffee	
Weather: 80's Sunny		Environment: grass	
Multiparameter Water Meter	Make: Horiba	Model:	Serial Number:
Water Level Meter	Make: Solinst	Model: 101	Serial Number:

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	NA		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 Zero (DI)		µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	4490	µS/cm	±5%	P			Geotech	1GK328	Nov-22
ORP	253	mV	±15 mV	P			InSitu	1GL481	Sep-22
DO (Zero pt)	10.61	mg/L	±0.1	P			Macron	#000228049	8/26/2025
DO (Saturated)	10.61	%	97-100%	P			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: 835				
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	2108D48	Jul-23	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1730				
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	NA		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	4500	µS/cm	±5%	P			Ricca	2108D48	Jul-23
DO (Zero pt)	10.21	mg/L	±0.1 mg/L	P			Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU	P			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: Joseph R Reed	Date: 8/24/22
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Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Brendan Glennon</u>				Location: <u>Coffeen Power Plant</u>					
Weather: <u>84°-59° Mostly Sunny W: SW 3 MPH</u>				Environment: <u>Gravel, Grassy</u>					
Multiparameter Water Meter		Make: <u>Aquatroll</u>	Model: <u>600</u>	Serial Number: <u>846000</u>					
Water Level Meter		Make:	Model:	Serial Number:					

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>3.96</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>Y</u>	<u>4.00</u>	MSI	L315-04	11/22/2023
pH 7.00a	<u>7.34</u>	s.u.	±0.1 s.u.	<u>F</u>	<u>I</u>	<u>7.30</u>	MSI	L172-33	6/23/2023
pH 10.00a	<u>10.62</u>	s.u.	±0.1 s.u.	<u>I</u>	<u>I</u>	<u>10.00</u>	MSI	L354-22	1/5/2024
SC Zero (DI)	<u>17.69</u>	µS/cm	0<25 µS/cm	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>1918.2</u>	µS/cm	±5%	<u>P</u>			Geotech	1GK328	Nov-22
ORP	<u>234.2</u>	mV	±15 mV	<u>P</u>			InSitu	1GL481	Sep-22
DO (Zero pt)	<u>0.07</u>	mg/L	±0.1	<u>P</u>			Macron	#000228049	8/26/2025
DO (Saturated)	<u>97.88</u>	%	97-100%	<u>P</u>	<u>84</u>		Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>1.85</u>	NTU	<2 NTU	<u>P</u>	<u>84</u>		Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: <u>0858</u>				
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Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	<u>4.01</u>	s.u.	±0.15 s.u.	<u>P</u>		Geotech	1GF009	Jun-23
pH 7.00b	<u>6.99</u>	s.u.	±0.15 s.u.	<u>I</u>		Geotech	0GJ268	Oct-22
pH 10.00b	<u>10.00</u>	s.u.	±0.15 s.u.	<u>I</u>		Geotech	1GF458	Jun-23
SC 1000	<u>1014.2</u>	µS/cm	±5%	<u>I</u>		Ricca	2108D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: <u>1105</u>				
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Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.04</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	L315-04	11/22/2023
pH 7.00a	<u>7.01</u>	s.u.	±0.1 s.u.	<u>I</u>			MSI	L172-33	6/23/2023
pH 10.00a	<u>9.96</u>	s.u.	±0.1 s.u.	<u>I</u>			MSI	L354-22	1/5/2024
SC 1000	<u>1006.6</u>	µS/cm	±5%	<u>I</u>			Ricca	2108D48	Jul-23
DO (Zero pt)	<u>0.02</u>	mg/L	±0.1 mg/L	<u>I</u>			Macron	#000228049	8/26/2025
Turbidity (DI)	<u>1.90</u>	NTU	<2 NTU	<u>I</u>			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:				
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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: <u>Brendan Glennon</u>	Date: <u>8/25/22</u>
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Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Kyle Lane</u> <u>Marion Amberson</u>		Location: <u>Coffeen Power</u>	
Weather: <u>75° Sunny</u>		Environment: <u>Dry and Dug</u>	
Multiparameter Water Meter	Make: <u>Pelican</u>	Model: <u>Horiba</u>	Serial Number: <u>PW294J03</u>
Water Level Meter	Make: <u>Heron</u>	Model: <u>Water Tape</u>	Serial Number: <u>19FF 2202131 ML</u>

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.08</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	L344-09	12/14/2023
pH 7.00a	<u>-</u>	s.u.	±0.1 s.u.	<u>-</u>	<u>-</u>	<u>-</u>	MSI	L343-07	12/9/2023
pH 10.00a	<u>-</u>	s.u.	±0.1 s.u.	<u>-</u>	<u>-</u>	<u>-</u>	MSI	M082-04	3/25/2024
SC Zero (DI)	<u>-</u>	µS/cm	0<25 µS/cm	<u>-</u>	<u>-</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>4340</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>	<u>-</u>	Geotech	1GK328	Nov-22
ORP	<u>-</u>	mV	±15 mV	<u>-</u>	<u>-</u>	<u>-</u>	InSitu	1GL481	Sep-22
DO (Zero pt)	<u>10.1a</u>	mg/L	±0.1	<u>P</u>	<u>NO</u>	<u>-</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>-</u>	%	97-100%	<u>-</u>	<u>-</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: <u>08:47</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	<u>-</u>	s.u.	±0.15 s.u.	<u>-</u>	<u>-</u>	Geotech	1GF009	Jun-23
pH 7.00b	<u>-</u>	s.u.	±0.15 s.u.	<u>-</u>	<u>-</u>	Geotech	0GJ268	Oct-22
pH 10.00b	<u>-</u>	s.u.	±0.15 s.u.	<u>-</u>	<u>-</u>	Geotech	1GF458	Jun-23
SC 1000	<u>-</u>	µS/cm	±5%	<u>-</u>	<u>-</u>	Ricca	1111A87	Nov-22

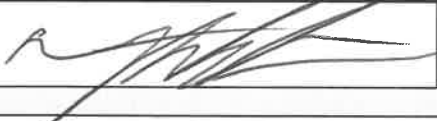
Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: <u>1202</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.07</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	L315-04	11/22/2023
pH 7.00a	<u>-</u>	s.u.	±0.1 s.u.	<u>-</u>	<u>-</u>	<u>-</u>	MSI	L172-33	6/23/2023
pH 10.00a	<u>-</u>	s.u.	±0.1 s.u.	<u>-</u>	<u>-</u>	<u>-</u>	MSI	L354-22	1/5/2024
SC 1000	<u>1500</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>	<u>-</u>	Ricca	2108D48	Jul-23
DO (Zero pt)	<u>10.02</u>	mg/L	±0.1 mg/L	<u>P</u>	<u>NO</u>	<u>-</u>	Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>	<u>-</u>	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: <u></u>	Date: <u>8/25/2023</u>
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Multiparameter Meter Field Calibration Checklist

Field Personnel: Brendan Glennon Location: Coffee

Weather: 76° WIS 4 mph Slightly cloudy Environment: Gravel

Multiparameter Water Meter Make: Aquatroll Model: 600 Serial Number: 762 098

Water Level Meter Make: _____ Model: _____ Serial Number: _____

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.00</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	L315-04	11/22/2023
pH 7.00a	<u>6.98</u>	s.u.	±0.1 s.u.	<u>I</u>			MSI	L172-33	6/23/2023
pH 10.00a	<u>9.98</u>	s.u.	±0.1 s.u.	<u>I</u>			MSI	L354-22	1/5/2024
SC Zero (DI)	<u>17.28</u>	µS/cm	0<25 µS/cm	<u>I</u>			Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>2040.6</u>	µS/cm	±5%	<u>I</u>			Geotech	1GK328	Nov-22
ORP	<u>209.7</u>	mV	±15 mV	<u>F</u>	<u>Y</u>	<u>228.4</u>	InSitu	1GL481	Sep-22
DO (Zero pt)	<u>0.05</u>	mg/L	±0.1	<u>F</u>			Macron	#000228049	8/26/2025
DO (Saturated)	<u>98.72</u>	%	97-100%	<u>I</u>			Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>1.3</u>	NTU	<2 NTU	<u>I</u>			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	<u>4.07</u>	s.u.	±0.15 s.u.	<u>P</u>		Geotech	1GF009	Jun-23	
pH 7.00b	<u>6.95</u>	s.u.	±0.15 s.u.	<u>I</u>		Geotech	0GJ268	Oct-22	
pH 10.00b	<u>9.95</u>	s.u.	±0.15 s.u.	<u>I</u>		Geotech	1GF458	Jun-23	
SC 1000	<u>996.20</u>	µS/cm	±5%	<u>I</u>		Ricca	2108D48	Jul-23	

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:

Signature: Brendan Glennon Date: 9/20/22

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>KALEES DESKE</u>			Location: <u>COFFEEN</u>		
Weather: <u>75° SUNNY WIND SLOW N</u>			Environment: <u>GRASSY</u>		
Multiparameter Water Meter		Make: <u>AT</u>	Model: <u>600</u>	Serial Number: <u>846000</u>	
Water Level Meter		Make: <u>HERRO</u>	Model: <u>WT</u>	Serial Number: <u>19FF211192H8</u>	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.00</u>	s.u.	±0.1 s.u.	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	MSI	L315-04	11/22/2023
pH 7.00a	<u>7.00</u>	s.u.	±0.1 s.u.	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	MSI	L172-33	6/23/2023
pH 10.00a	<u>10.00</u>	s.u.	±0.1 s.u.	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	MSI	L354-22	1/5/2024
SC Zero (DI)	<u>14.20</u>	µS/cm	0<25 µS/cm	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>2030.00</u>	µS/cm	±5%	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	Geotech	1GK328	Nov-22
ORP	<u>225.00</u>	mV	±15 mV	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	InSitu	1GL481	Sep-22
DO (Zero pt)	<u>0.00</u>	mg/L	±0.1	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>98.00</u>	%	97-100%	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>1.13</u>	NTU	<2 NTU	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)						Time: <u>0850</u>		
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	<u>4.00</u>	s.u.	±0.15 s.u.	<u>Pass</u>	<u>NO</u>	Geotech	1GF009	Jun-23
pH 7.00b	<u>7.01</u>	s.u.	±0.15 s.u.	<u>Pass</u>	<u>NO</u>	Geotech	0GJ268	Oct-22
pH 10.00b	<u>9.91</u>	s.u.	±0.15 s.u.	<u>Pass</u>	<u>NO</u>	Geotech	1GF458	Jun-23
SC 1000	<u>1019.40</u>	µS/cm	±5%	<u>Pass</u>	<u>NO</u>	Ricca	2108D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):						Time: <u>1257</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.03</u>	s.u.	±0.1 s.u.	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	MSI	L315-04	11/22/2023
pH 7.00a	<u>7.06</u>	s.u.	±0.1 s.u.	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	MSI	L172-33	6/23/2023
pH 10.00a	<u>9.99</u>	s.u.	±0.1 s.u.	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	MSI	L354-22	1/5/2024
SC 1000	<u>1014.20</u>	µS/cm	±5%	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	Ricca	2108D48	Jul-23
DO (Zero pt)	<u>0.00</u>	mg/L	±0.1 mg/L	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	Macron	#000228049	8/26/2025
Turbidity (DI)	<u>1.21</u>	NTU	<2 NTU	<u>Pass</u>	<u>NO</u>	<u>N/A</u>	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: 	Date: <u>9/20/22</u>
--	----------------------

Pace IR - Peoria, IL

Sample Delivery Group: L1533221
Samples Received: 09/07/2022
Project Number: FH05307
Description: Vistra-Coffeen
Site: 01
Report To: Janet Clutters

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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

G402 L1533221-01 Non-Potable Water

				Collected by	Collected date/time	Received date/time
					08/24/22 13:56	09/07/22 10:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

G403 L1533221-02 Non-Potable Water

				Collected by	Collected date/time	Received date/time
					08/24/22 15:07	09/07/22 10:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

G404 L1533221-03 Non-Potable Water

				Collected by	Collected date/time	Received date/time
					08/24/22 15:38	09/07/22 10:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

G405 L1533221-04 Non-Potable Water

				Collected by	Collected date/time	Received date/time
					08/24/22 17:01	09/07/22 10:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

G406 L1533221-05 Non-Potable Water

				Collected by	Collected date/time	Received date/time
					08/24/22 14:08	09/07/22 10:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

G407 L1533221-06 Non-Potable Water

				Collected by	Collected date/time	Received date/time
					08/24/22 12:35	09/07/22 10:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

SAMPLE SUMMARY

G281 L1533221-07 Non-Potable Water

Collected by

Collected date/time

Received date/time

08/24/22 11:21

09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Pace IR - Peoria, IL

PROJECT:

FH05307

SDG:

L1533221

DATE/TIME:

10/06/22 17:49

PAGE:

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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	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.273	J	0.266	0.480	10/04/2022 10:01	WG1932708
(T) Barium	99.3			30.0-143	10/04/2022 10:01	WG1932708
(T) Yttrium	105			30.0-136	10/04/2022 10:01	WG1932708

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.496	J	0.321	0.512	10/04/2022 10:01	WG1933247

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.223		0.180	0.179	10/03/2022 12:53	WG1933247
(T) Barium-133	93.4			30.0-143	10/03/2022 12:53	WG1933247

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.282	J	0.188	0.336	10/04/2022 10:01	WG1932708
(T) Barium	102			30.0-143	10/04/2022 10:01	WG1932708
(T) Yttrium	101			30.0-136	10/04/2022 10:01	WG1932708

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.506		0.291	0.440	10/04/2022 10:01	WG1933247

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.225	J	0.222	0.284	10/03/2022 12:53	WG1933247
(T) Barium-133	99.0			30.0-143	10/03/2022 12:53	WG1933247

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.726		0.198	0.337	10/04/2022 10:01	WG1932708
(T) Barium	92.3			30.0-143	10/04/2022 10:01	WG1932708
(T) Yttrium	111			30.0-136	10/04/2022 10:01	WG1932708

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.861		0.272	0.433	10/04/2022 10:01	WG1933247

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.135	J	0.186	0.272	10/03/2022 12:53	WG1933247
(T) Barium-133	95.1			30.0-143	10/03/2022 12:53	WG1933247

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.00		0.209	0.347	10/04/2022 10:01	WG1932708
(T) Barium	97.4			30.0-143	10/04/2022 10:01	WG1932708
(T) Yttrium	107			30.0-136	10/04/2022 10:01	WG1932708

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.06		0.254	0.431	10/04/2022 10:01	WG1933247

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0563	U	0.145	0.256	10/03/2022 12:53	WG1933247
(T) Barium-133	91.2			30.0-143	10/03/2022 12:53	WG1933247

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.848		0.209	0.352	10/04/2022 10:01	WG1932708
(T) Barium	91.2			30.0-143	10/04/2022 10:01	WG1932708
(T) Yttrium	102			30.0-136	10/04/2022 10:01	WG1932708

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.04		0.289	0.434	10/04/2022 10:01	WG1933247

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.192	J	0.199	0.254	10/03/2022 12:53	WG1933247
(T) Barium-133	91.6			30.0-143	10/03/2022 12:53	WG1933247

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.189	J	0.192	0.347	10/04/2022 10:01	WG1932708
(T) Barium	96.8			30.0-143	10/04/2022 10:01	WG1932708
(T) Yttrium	106			30.0-136	10/04/2022 10:01	WG1932708

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.227	J	0.253	0.453	10/04/2022 10:01	WG1933247

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0386	U	0.164	0.291	10/03/2022 12:53	WG1933247
(T) Barium-133	95.1			30.0-143	10/03/2022 12:53	WG1933247

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.22		0.223	0.363	10/04/2022 10:01	WG1932708
(T) Barium	81.8			30.0-143	10/04/2022 10:01	WG1932708
(T) Yttrium	111			30.0-136	10/04/2022 10:01	WG1932708

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.23		0.234	0.400	10/04/2022 10:01	WG1933247

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0117	U	0.0723	0.169	10/03/2022 12:53	WG1933247
(T) Barium-133	95.1			30.0-143	10/03/2022 12:53	WG1933247

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

(MB) R3844576-1 10/04/22 10:01						
Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l		
Radium-228	0.185	J	0.140	0.250		
(T) Barium	101		101			
(T) Yttrium	98.8		98.8			

L1536080-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1536080-02 10/04/22 10:01 • (DUP) R3844576-5 10/04/22 10:01

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	<u>DUP Qualifier</u>	DUP RPD Limits %	DUP RER Limit
Radium-228	0.397	0.265	0.470	0.662	0.278	0.470	1	50.0	0.688		20	3
(T) Barium	113			102	102							
(T) Yttrium	104			113	113							

Laboratory Control Sample (LCS)

(LCS) R3844576-2 10/04/22 10:01									
Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier				
Radium-228	5.00	5.04	101	80.0-120					
(T) Barium			101						
(T) Yttrium			109						

L1536080-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1536080-01 10/04/22 10:01 • (MS) R3844576-3 10/04/22 10:01 • (MSD) R3844576-4 10/04/22 10:01												
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 %	RPD Limits %
Radium-228	16.7	1.54	16.6	15.6	90.1	84.3	1	70.0-130			6.09	20
(T) Barium		110			110	107						
(T) Yttrium		108			112	105						

Method Blank (MB)

(MB) R3845106-5 10/03/22 13:29

Analyte	MB Result pCi/l	MB Qualifier + / -	MB Uncertainty	MB MDA pCi/l
Radium-226	0.00185	U	0.00887	0.0216
(T) Barium-133	102	102		

L1533221-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1533221-07 10/03/22 12:53 • (DUP) R3845106-4 10/03/22 12:53

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	0.0117	0.0723	0.169	-0.0338	0.0662	0.169	1	200	0.464	U	20	3
(T) Barium-133	95.1			98.0	98.0							

Laboratory Control Sample (LCS)

(LCS) R3845106-1 10/03/22 12:53

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	4.71	93.8	80.0-120	
(T) Barium-133			99.8		

L1533194-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1533194-01 10/03/22 12:53 • (MS) R3845106-2 10/03/22 12:53 • (MSD) R3845106-3 10/03/22 12:53

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.300	18.8	20.6	92.5	101	1	75.0-125			8.99		20
(T) Barium-133		96.6			97.9	97.2							

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.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCREDITATIONS & LOCATIONS

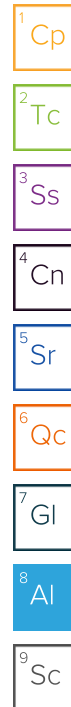
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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	LA000356
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.



Internal Transfer Chain of Custody

State of Origin: IL

Cert. Needed: ☒ YES ☐ NO



Owner Received

Results Requested

Workorder: FH05307

Workorder Name: Vistra - Coffeen

Date:

8/25/2022

By:

9/30/2022

Report To:

Subcontract To:

Requested Analysis

Janet Clutters

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

Preserved Containers

Radium 226/228

L153322

LAB USE ONLY

[illegible]

Cooler Temperature on Receipt

°C

Custody Seal Y or NReceived on Ice ☒ 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.

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

Page 1 of 1

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

October 10, 2022

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Pace IR - Peoria, IL

Sample Delivery Group: L1533203
Samples Received: 09/07/2022
Project Number: FH05288
Description: Vistra-Coffeen
Site: 01
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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G271 L1533203-02	6	⁴ Cn
G279 L1533203-03	7	⁵ Sr
G280 L1533203-04	8	
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NE RISER L1533203-06	10	
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SAMPLE SUMMARY

G270 L1533203-01 Non-Potable Water

Collected by
Collected date/time
08/24/22 14:14
Received date/time
09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925718	1	09/22/22 16:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925718	1	09/22/22 16:00	09/23/22 14:10	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

G271 L1533203-02 Non-Potable Water

Collected by
Collected date/time
08/24/22 15:36
Received date/time
09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925718	1	09/22/22 16:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925718	1	09/22/22 16:00	09/23/22 14:10	RGT	Mt. Juliet, TN

G279 L1533203-03 Non-Potable Water

Collected by
Collected date/time
08/24/22 16:02
Received date/time
09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925718	1	09/22/22 16:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925718	1	09/22/22 16:00	09/23/22 14:10	RGT	Mt. Juliet, TN

G280 L1533203-04 Non-Potable Water

Collected by
Collected date/time
08/24/22 16:58
Received date/time
09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925718	1	09/22/22 16:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925718	1	09/22/22 16:00	09/23/22 14:10	RGT	Mt. Juliet, TN

G273 L1533203-05 Non-Potable Water

Collected by
Collected date/time
08/25/22 10:58
Received date/time
09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925718	1	09/22/22 16:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925718	1	09/22/22 16:00	09/23/22 14:10	RGT	Mt. Juliet, TN

NE RISER L1533203-06 Non-Potable Water

Collected by
Collected date/time
08/25/22 10:05
Received date/time
09/07/22 10:30

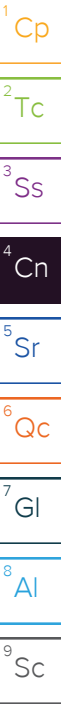
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925718	1	09/22/22 16:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925718	1	09/22/22 16:00	09/23/22 14:10	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	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.835		0.206	0.346	10/07/2022 10:10	WG1932384
(T) Barium	98.7			30.0-143	10/07/2022 10:10	WG1932384
(T) Yttrium	98.0			30.0-136	10/07/2022 10:10	WG1932384

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.835		0.215	0.402	10/07/2022 10:10	WG1925718

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.0309	U	0.0605	0.204	09/23/2022 14:10	WG1925718
(T) Barium-133	99.1			30.0-143	09/23/2022 14:10	WG1925718

⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.56		0.207	0.319	10/07/2022 10:10	WG1932384
(T) Barium	93.2			30.0-143	10/07/2022 10:10	WG1932384
(T) Yttrium	102			30.0-136	10/07/2022 10:10	WG1932384

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.57		0.238	0.399	10/07/2022 10:10	WG1925718

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0127	U	0.118	0.240	09/23/2022 14:10	WG1925718
(T) Barium-133	101			30.0-143	09/23/2022 14:10	WG1925718

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.575		0.202	0.349	10/07/2022 10:10	WG1932384
(T) Barium	96.4			30.0-143	10/07/2022 10:10	WG1932384
(T) Yttrium	104			30.0-136	10/07/2022 10:10	WG1932384

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.838		0.310	0.451	10/07/2022 10:10	WG1925718

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.263	J	0.235	0.286	09/23/2022 14:10	WG1925718
(T) Barium-133	98.5			30.0-143	09/23/2022 14:10	WG1925718

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.241	J	0.210	0.376	10/07/2022 10:10	WG1932384
(T) Barium	95.9			30.0-143	10/07/2022 10:10	WG1932384
(T) Yttrium	103			30.0-136	10/07/2022 10:10	WG1932384

1
Cp

2
Tc

3
Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.415	J	0.277	0.441	10/07/2022 10:10	WG1925718

4
Cn

5
Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.174	J	0.180	0.230	09/23/2022 14:10	WG1925718
(T) Barium-133	99.2			30.0-143	09/23/2022 14:10	WG1925718

6
Qc

7
Gl

8
Al

9
Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.114	<u>U</u>	0.239	0.432	10/07/2022 10:10	WG1932384
(T) Barium	90.3			30.0-143	10/07/2022 10:10	WG1932384
(T) Yttrium	99.5			30.0-136	10/07/2022 10:10	WG1932384

¹Cp²Tc³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.210	<u>J</u>	0.277	0.481	10/07/2022 10:10	WG1925718

⁴Cn⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0964	<u>J</u>	0.141	0.212	09/23/2022 14:10	WG1925718
(T) Barium-133	99.8			30.0-143	09/23/2022 14:10	WG1925718

⁶Qc⁷Gl⁸Al⁹Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.29		0.206	0.330	10/07/2022 10:10	WG1932384
(T) Barium	101			30.0-143	10/07/2022 10:10	WG1932384
(T) Yttrium	99.7			30.0-136	10/07/2022 10:10	WG1932384

¹Cp²Tc³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.36		0.258	0.426	10/07/2022 10:10	WG1925718

⁴Cn⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0698	U	0.156	0.269	09/23/2022 14:10	WG1925718
(T) Barium-133	91.1			30.0-143	09/23/2022 14:10	WG1925718

⁶Qc⁷Gl⁸Al⁹Sc

Method Blank (MB)

(MB) R3846060-1 10/07/22 10:10

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	0.360		0.145	0.252
(T) Barium	106		106	
(T) Yttrium	102		102	

L1533203-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1533203-02 10/07/22 10:10 • (DUP) R3846060-5 10/07/22 10:10

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	1.56	0.207	0.319	1.92	0.296	0.319	1	20.8	0.999		20	3
(T) Barium	93.2			96.2	96.2							
(T) Yttrium	102			105	105							

Laboratory Control Sample (LCS)

(LCS) R3846060-2 10/07/22 10:10

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.99	99.8	80.0-120	
(T) Barium			104		
(T) Yttrium			99.2		

L1539168-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539168-04 10/07/22 10:10 • (MS) R3846060-3 10/07/22 10:10 • (MSD) R3846060-4 10/07/22 10:10

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	0.970	9.89	9.65	89.2	86.8	1	70.0-130			2.39		20
(T) Barium		99.2			98.7	103							
(T) Yttrium		105			106	105							

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3841464-1 09/23/22 14:10

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	0.0101	<u>U</u>	0.0275	0.0522
(T) Barium-133	101		101	

L1533203-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1533203-01 09/23/22 14:10 • (DUP) R3841464-5 09/23/22 14:10

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	-0.0309	0.0605	0.204	-0.00548	0.0797	0.204	1	0.000	0.254	<u>U</u>	20	3
(T) Barium-133	99.1			102	102							

Laboratory Control Sample (LCS)

(LCS) R3841464-2 09/23/22 14:10

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	4.75	94.7	80.0-120	
(T) Barium-133			103		

L1534084-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1534084-02 09/23/22 14:11 • (MS) R3841464-3 09/23/22 14:10 • (MSD) R3841464-4 09/23/22 14:10

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.866	18.8	20.3	89.5	97.1	1	75.0-125			7.78		20
(T) Barium-133		98.6			100	102							

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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.

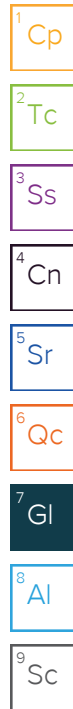
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

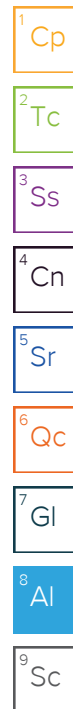
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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	LA000356
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.



A080

Internal Transfer Chain of Custody

State of Origin: IL

Cert. Needed:

☒ YES☐ NO

Workorder: FH05288

Workorder Name: Vistra -Coffeen

Owner Received

Date:

8/25/2022

Results Requested

By:

9/30/2022

Report To:		Subcontract To:		Requested Analysis											
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													
				Preserved Containers				Radium 226/228							
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix										LAB USE ONLY
1	G270	Grab	8/24/2022 14:14	FH05288-01	GW										01
2	G271	Grab	8/24/2022 15:36	FH05288-02	GW										02
3	G279	Grab	8/24/2022 16:02	FH05288-03	GW										03
4	G280	Grab	8/24/2022 16:58	FH05288-04	GW										04
5	G273	Grab	8/25/2022 10:58	FH05288-05	GW										05
6	NE RISER	Grab	8/25/2022 10:05	FH05288-06	GW										06
7															
8															
9															
10															
Transfers	Released By	Date/Time	Received By	Date/Time	Comments										
1	<i>E. M. Shaw</i>	9/1/22 1523	<i>MAH</i>	9/6/22 1030	Report as 226, 228 & 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.

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

Page 1 of 1

4 mb

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

Pace IR - Peoria, IL

Sample Delivery Group: L1557814
Samples Received: 11/15/2022
Project Number: FI04087
Description: Vistra-Coffeen
Site: 001
Report To: Margie Nobiling
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:



Haley Torrence
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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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Radiochemistry by Method SM7500Ra B M	7	
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Al: Accreditations & Locations	9	⁷ Gl
Sc: Sample Chain of Custody	10	⁸ Al
		⁹ Sc

SAMPLE SUMMARY

G401 L1557814-01 Non-Potable Water

Collected by

Collected date/time

Received date/time

09/20/22 12:40

11/15/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1969627	1	12/06/22 10:21	12/18/22 09:55	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1971826	1	12/14/22 09:19	12/18/22 09:55	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1971826	1	12/14/22 09:19	12/15/22 15:15	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

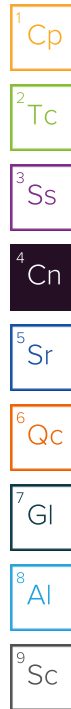
⁹Sc

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.



Haley Torrence
Project Manager



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.0661	U	0.185	0.350	12/18/2022 09:55	WG1969627
(T) Barium	90.6			30.0-143	12/18/2022 09:55	WG1969627
(T) Yttrium	101			30.0-136	12/18/2022 09:55	WG1969627

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.140	U	0.317	0.553	12/18/2022 09:55	WG1971826

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0743	U	0.258	0.428	12/15/2022 15:15	WG1971826
(T) Barium-133	87.3			30.0-143	12/15/2022 15:15	WG1971826

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3873555-1 12/18/22 09:55

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	-0.0220	U	0.149	0.282
(T) Barium	93.9		93.9	
(T) Yttrium	103		103	

L1557819-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1557819-01 12/18/22 09:55 • (DUP) R3873555-5 12/18/22 09:55

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	0.901	0.171	0.287	1.16	0.343	0.287	1	24.8	0.667		20	3
(T) Barium	102			85.2	85.2							
(T) Yttrium	107			107	107							

Laboratory Control Sample (LCS)

(LCS) R3873555-2 12/18/22 09:55

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.06	101	80.0-120	
(T) Barium			80.9		
(T) Yttrium			115		

L1557513-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1557513-01 12/18/22 09:55 • (MS) R3873555-3 12/18/22 09:55 • (MSD) R3873555-4 12/18/22 09:55

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	0.554	9.18	8.67	86.3	81.1	1	70.0-130			5.77		20
(T) Barium		97.1			106	92.0							
(T) Yttrium		110			109	119							

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3873527-1 12/15/22 15:15

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	0.0202	<u>U</u>	0.0434	0.0720
(T) Barium-133	94.6		94.6	

L1557485-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1557485-01 12/15/22 15:15 • (DUP) R3873527-5 12/15/22 15:15

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	0.241	0.203	0.227	0.0398	0.174	0.227	1	143	0.753	<u>U</u>	20	3
(T) Barium-133	88.0			82.2	82.2							

Laboratory Control Sample (LCS)

(LCS) R3873527-2 12/15/22 15:15

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	4.69	93.4	80.0-120	
(T) Barium-133			94.4		

L1556664-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1556664-01 12/15/22 15:15 • (MS) R3873527-3 12/15/22 15:15 • (MSD) R3873527-4 12/15/22 15:15

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.0615	18.8	18.3	93.5	91.3	1	75.0-125			2.37		20
(T) Barium-133		83.0			82.8	87.8							



GLOSSARY OF TERMS

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Qualifier Description

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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	LA000356
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.



A019

Internal Transfer Chain of Custody

State of Origin: IL

Cert. Needed: ☒ YES ☐ NO



Workorder: FI04087

Workorder Name: VISTRA - COFFEEN

Owner Received

Results Required

Date: 9/20/2022

By: 11/24/2022

Report To:

Subcontract To:

Requested Analysis

Margie Nobiling

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

Preserved Containers

Radium 226/228

4557814

LAB USE ONLY

[illegible]

Cooler Temperature on Receipt

°C

Custody Seal Y or NReceived 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.

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

Page 1 of 1

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

4.4 ± 0.2 = 4.4 mSv



Ship to :
Pace Analytical Services, LLC
12065 Lebanon Rd
Mt Juliet, TN 37122

(615)758-5858

INTER LABORATORY WORK ORDER # F104087

(To be complete by sending lab)

Sending Project No:	F104087	
Receiving Project No:		
Check Box for Consolidated Invoice:	☐	☐
Date Prepared:	11/10/2022	
REQUESTED COMPLETION DATE:	11/24/2022	

Sending Region	IR72-IL/MO	Sending Project Mgr.	Gail Schindler
Receiving Region	IR80-NATIONAL	External Client	Vistra - COFFEEN
State of Sample Origin	IL	QC Deliverable	STD Report

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? _____ Cert Needed: IL

WORK REQUESTED						
Method Description	Container Type	Quantity of	Preservative	Quantity of	Unit Price	Amount
Radium 226/228		1		1	\$150.00	\$150.00
						\$0.00
						\$0.00
TOTAL						\$150.00

Special Requirements: _____

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept.
radiological	38	\$150.00	\$120.00	\$30.00
* Custom Revenue Allocation		TOTAL	\$120.00	\$30.00

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☒ No

CONFIRMATION OF WORK COMPLETED

Date Completed: _____ Receiving Project Manager: _____

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

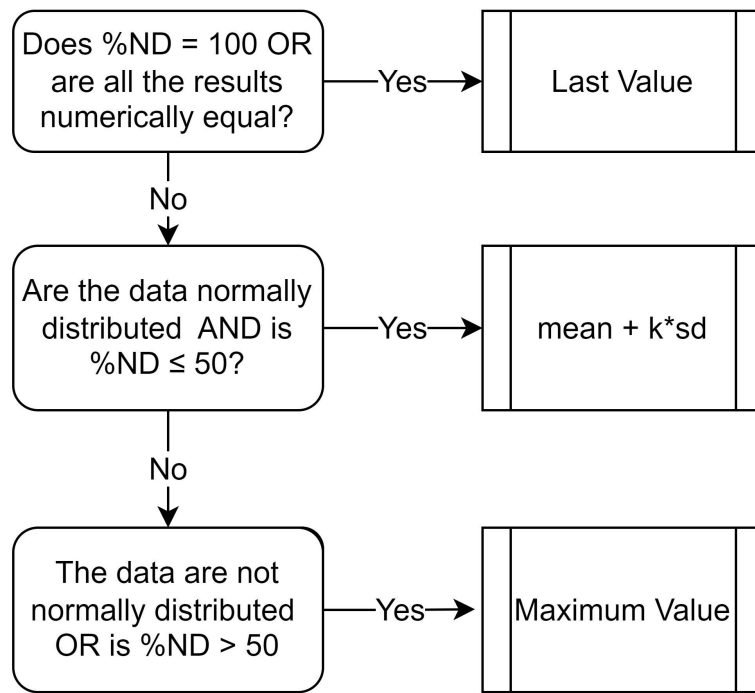
L1557814

<u>Tracking Numbers</u>		<u>Temperature</u>
UPS		4.4 to 4.4 mB/s
↓		5.1 to 5.1 mB/s

APPENDIX B

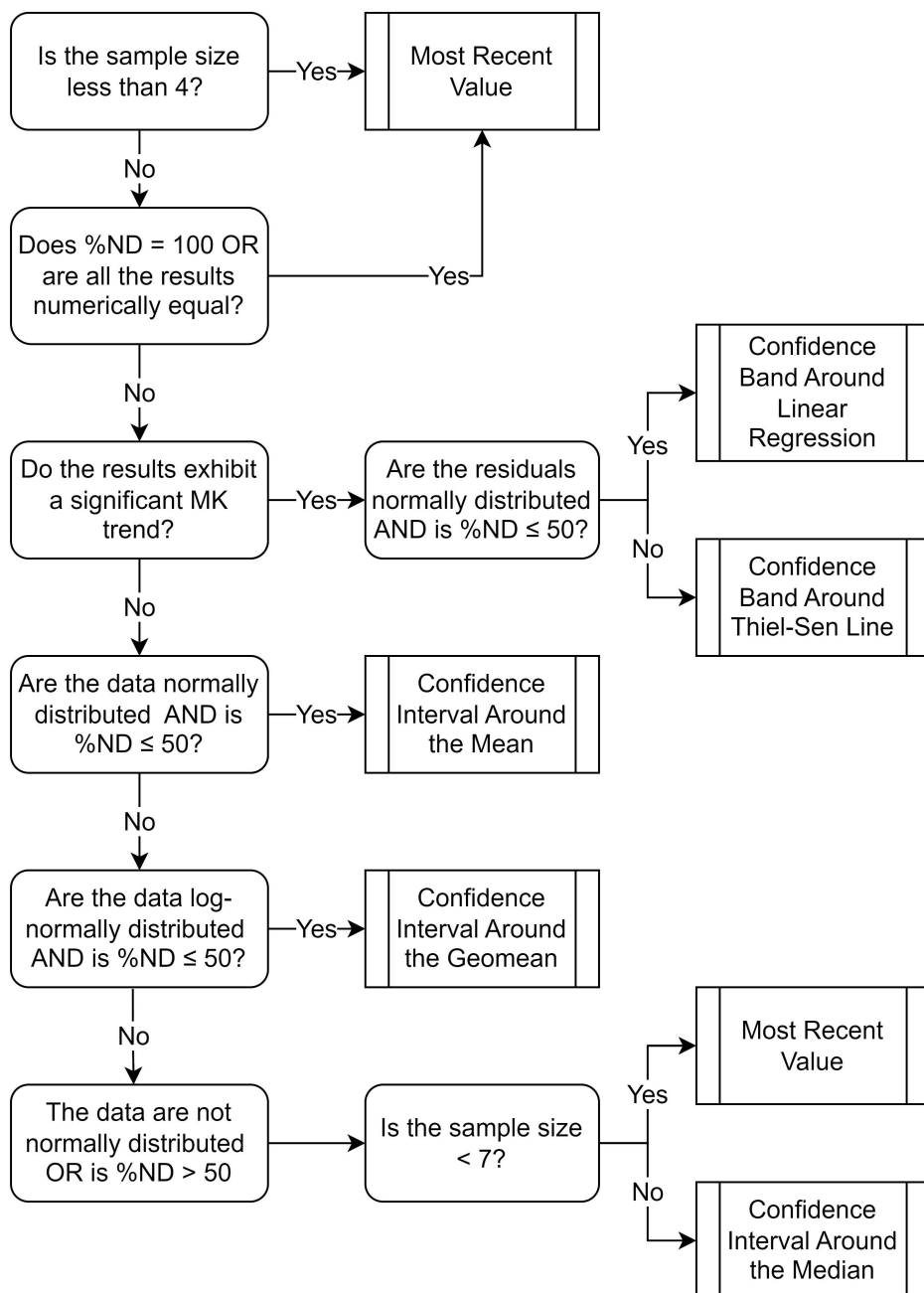
STATISTICAL METHODOLOGY FOR DETERMINATION OF BACKGROUND VALUES

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



APPENDIX C
STATISTICAL METHODOLOGY 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
<u>Alpha Levels</u>
Normality = 0.01
MK Trend = 0.01
Residuals = 0.01
Confidence Interval = 0.01



APPENDIX D

ALTERNATE SOURCE DEMONSTRATION



Prepared for

Illinois Power Generating Company
134 Cips Lane
Coffeen, Illinois 62017

**40 C.F.R. Section 257.95(g)(3)ii:
ALTERNATE SOURCE DEMONSTRATION
COFFEEN ASH POND NO. 2 (Unit ID #102)**

Prepared by



engineers | scientists | innovators

1 McBride and Son Center Dr Suite 202
Chesterfield, Missouri 63005

Project Number GLP8005

July 2022

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LIST OF ACRONYMS

Acronym	Definition
ASD	Alternative Source Demonstration
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
CMA	Corrective Measures Assessment
CPP	Coffeen Power Plant
GWPS	Groundwater Protection Standard
IAC	Illinois Administrative Code
IEPA	Illinois Environmental Protection Agency
LOE	Line of Evidence
NRT	Natural Resource Technology, LLC
PNNL	Pacific Northwest National Laboratory
SEP	Sequential Extraction Procedure
SSL	Statistically Significant Level
USGS	United States Geological Survey
XRD	X-Ray Diffraction

SECTION 1

INTRODUCTION

This alternative source demonstration (ASD) has been prepared on behalf of Illinois Power Generating Company, by Geosyntec Consultants, Inc., to provide information for the Coffeen Ash Pond No. 2 (AP2) coal combustion residuals (CCR) unit located at the Coffeen Power Plant (CPP) near Coffeen, Illinois. The ASD is completed pursuant to Title 40 of the Code of Federal Regulations (40 C.F.R.) § 257.95(g)(3)(ii).

A Statistically Significant Level (SSL) for cobalt at downgradient monitoring well G401 was identified as part of the AP2 assessment monitoring program in 2019, as discussed in the Corrective Measures Assessment (CMA; Ramboll, 2019). 40 C.F.R. § 257.95(g)(3)(ii) allows the owner or operator of a CCR unit to complete a written ASD that a source other than the CCR unit being monitored caused an SSL, or that the SSL resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

Analytical monitoring data collected for the assessment monitoring program were evaluated in accordance with the Statistical Analysis Plan (Natural Resource Technology [NRT], 2017a). Cobalt concentrations were observed above the site-specific groundwater protection standard (GWPS) of 6 micrograms per liter (µg/L).

Although an SSL for cobalt at monitoring well G402 was also identified in the CMA, updated statistical analyses for cobalt that incorporated more recent assessment monitoring data indicate that cobalt is no longer present at SSLs above the GWPS at G402 (Ramboll, 2022).

Pursuant to 40 C.F.R. § 257.95(g)(3)(ii), the lines of evidence (LOEs) documented in this ASD demonstrate that a source other than the Coffeen AP2 CCR unit were the cause of the cobalt SSL at downgradient monitoring well G401.

SECTION 2

BACKGROUND

2.1 SITE LOCATION AND DESCRIPTION

The CPP is located in Montgomery County, Illinois approximately two miles south of the City of Coffeen. The CPP is situated on a peninsula between two lobes of Coffeen Lake, which was created in 1963 by damming a portion of the East Fork of Shoal Creek. The lake covers approximately 1,100 acres and provided cooling water for the CPP prior to its closure in 2019. Monitoring wells in the vicinity of AP2 are shown in Figure 1.

2.2 DESCRIPTION OF THE CCR UNIT

AP2 is an unlined surface impoundment with a surface area of approximately 60 acres, with berms up to 47 feet above the surrounding land surface. AP2 was removed from service and capped in the mid-1980s using a two-foot compacted clay and soil cap (Ramboll, 2019).

AP2 was recapped starting in 2019 using a geomembrane cover system following partial dewatering in accordance with a closure plan submitted to the Illinois Environmental Protection Agency (IEPA; AECOM, 2017). The geomembrane cap design addresses the potential for slope failure and water infiltration into the closed CCR unit and more effectively directing the drainage of surface water (i.e., precipitation) off the cover system.

2.3 GEOLOGY AND HYDROGEOLOGY

The site geology and hydrogeology are described in the Hydrogeologic Characterization Report (NRT, 2017b). The unconsolidated deposits which occur at the CPP include (beginning at the ground surface):

- Upper Confining Unit – Low permeability clays and silts, including the Roxana Silt and Peoria Silt (Loess Unit) and the upper clayey till portion of the Hagarstown Member
- Uppermost Aquifer – Thin (generally less than three feet), moderate to high permeability sand, silty sand, and sandy silt/clay units which include the Hagarstown Member and the upper Vandalia Till Member (where weathered);

- Lower Confining Unit – Thick (generally greater than 15 feet), very low permeability sandy, silt till, or clay till that include the unweathered Vandalia Member, Mulberry Grove Member (discontinuous), and Smithboro Member.
- Bedrock – Pennsylvanian-age Bond Formation characterized by limestone and calcareous clays and shales.

A geologic cross-section originally included in the Hydrogeologic Characterization Report is provided as Attachment A (NRT, 2017b). CCR within AP2 is underlain by an Upper Confining Unit in the majority of the footprint. However, in former surface water drainage features that were present prior to AP2 construction, saturated CCR may be in contact with the uppermost aquifer, which consists of the Hagarstown Member and, at some locations, weathered portions of the Vandalia Till.

Hydraulic conductivities of the Hagarstown Member measured at several locations (G401, G405) are on the order of 1×10^{-3} to 1×10^{-4} cm/sec, which are generally one to two orders of magnitude greater than those of the surrounding materials (Upper Confining Unit). The higher hydraulic conductivity supports the designation of the Hagarstown Member as the Uppermost Aquifer (groundwater monitoring zone) at the Site. At other locations (i.e., G402, G403, and G404) the Hagarstown Member is either thin or not identified in the borings, but hydraulic conductivity tests in the wells screened at similar elevations indicate similar hydraulic conductivities. At these select locations, the weathered Upper Vandalia Till is considered part of the uppermost aquifer and hydraulically connected in these areas.

Groundwater at the Site has previously been classified as Class I in accordance with 35 Illinois Administrative Code (IAC) 620 (Hanson, 2009) based on the observed hydraulic conductivity values measured in the monitoring wells screened in the Hagarstown Member (e.g., G401).

The monitoring well network consists of two background monitoring locations (G270, G281) and five downgradient monitoring locations (G401, G402, G403, G404, G405). The monitoring well locations are shown on Figure 1. The monitoring wells are screened in the Uppermost Aquifer from approximately elevations 600 to 610 ft.

The potentiometric groundwater contours and generalized groundwater flow directions at the Site are shown in Figure 1. Groundwater flow is generally to the south and east. The groundwater to the west of AP2 is separated from the regime under AP2 by a groundwater divide (Figure 1).

2.4 GROUNDWATER QUALITY

Cobalt concentrations above the site-specific GWPS of 6 µg/L were observed during recent groundwater sampling events at G401 and out-of-network well G410, both of which are screened within the Hagarstown Member. An SSL was identified at monitoring well G401, which is located directly south of AP2. Elevated cobalt concentrations were also observed in monitoring well G410 located west of AP2. G410 is not a part of the AP2 groundwater monitoring network because the groundwater flow at G410 is westward (away from AP2) and is west of a groundwater divide located between G410 and AP2 (Figure 1). Therefore, even though cobalt was detected at G410 above the site-specific GWPS, it is not attributed to a release from AP2.

SECTION 3

ALTERNATE SOURCE DEMONSTRATION LINES OF EVIDENCE

This ASD for the cobalt SSL at monitoring well G401 is based on three lines of evidence (LOEs). These LOEs are described and supported below.

3.1 LOE #1: AP2 POTENTIAL SOURCE WATER COBALT CONCENTRATIONS ARE LOWER THAN AT WELL G401.

Samples of the AP2 leachate were collected in October 2016 to support an anti-degradation study. The sample analyses indicated that cobalt was not detected with a detection limit of 2 µg/L (Hanson, 2017). Cobalt concentrations in additional AP2 porewater samples collected in May 2020 were 4.6 µg/L. These results, taken from two sampling events four years apart, indicate that AP2 leachate cobalt concentrations are consistently below the site-specific GWPS.

The cobalt concentration in May 2020 at well G401 was 230 µg/L, with an average cobalt concentration of 274 µg/L in samples collected between November 2015 and January 2021. In well G410, a cobalt concentration of 11 µg/L was observed in May 2020. The concentrations of cobalt in wells G401 and G410 are greater than the cobalt concentrations observed in the potential AP2 source water. If AP2 were the source of cobalt in groundwater, AP2 source water concentrations would need to be greater than the concentration at both G401 and G410. Therefore, the concentrations of cobalt above the GWPS at monitoring wells G401 and G410 cannot be attributed to leachate from the AP2 unit.

3.2 LOE #2: COBALT CONCENTRATIONS AT WELL G410 ARE NOT ASSOCIATED WITH PRIMARY INDICATORS FOR POTENTIAL CCR IMPACTS TO GROUNDWATER.

Elevated boron and sulfate groundwater concentrations attributable to CCR leachate are not correlated with elevated concentrations of cobalt at the Site. Boron and sulfate are common indicators of CCR impacts to groundwater due to their ubiquity in CCR leachate and mobility in groundwater. Boron and sulfate impacts in groundwater in the vicinity of AP2, including at G401, have previously been attributed to a release from the unit (NRT, 2017c; Hanson, 2021). The concentrations of these two CCR leachate indicators would be expected to be correlated with cobalt, if the provenance of dissolved cobalt in

groundwater were the AP2 unit. However, elevated cobalt concentrations are inconsistent with boron and sulfate impacts across the Site.

Table 1 shows a summary of groundwater concentrations of various constituents at G401, G410, and other groundwater monitoring wells at the Site. While cobalt concentrations above the GWPS were identified at both G401 and G410, only G401 showed elevated concentrations of boron and sulfate (as indicators of CCR impacts). The concentrations of boron (0.16 mg/L) and sulfate (40 mg/L) at G410 were significantly lower than concentrations observed in other wells across the Site where cobalt was not detected.

The low concentrations of boron and sulfate at G410 are consistent with the understanding that G410 is located cross-gradient of AP2 and in a separate hydraulic regime from AP2 (i.e., not hydraulically connected; Figure 1). Thus, the cobalt concentrations above the GWPS at G410 cannot be attributed to a release from AP2, which indicates that cobalt is associated with natural processes in the uppermost aquifer.

3.3 LOE #3: COBALT IS NATURALLY OCCURRING IN THE AQUIFER MEDIA AT THE SITE.

Geochemical conditions suggest the potential for cobalt mobilization from aquifer solids at monitoring well G401 via dissolution of cobalt from iron-bearing minerals. This is indicated by the high concentration of aqueous iron and manganese observed at G401 relative to other locations (Table 1), as described below.

Cobalt is known to undergo isomorphic substitution for iron in crystalline iron minerals such as pyrite due to their similar ionic radii of approximately 1.56 angstroms (Å) for ferrous iron vs. 1.52 Å for cobalt (Clementi and Raimondi, 1963; Hitzman et al., 2017). Under oxidizing geochemical conditions, pyrite (FeS) weathering results in the release of dissolved iron, and therefore the isomorphically substituted cobalt, to groundwater (Krupka and Serne, 2002).

Analysis of total cobalt concentrations in soil found that the concentrations in background soils (10 µg/g) are similar to, but slightly higher than, those in soils from G401 (6.1 µg/g; Table 2). To evaluate the association of cobalt with aquifer solid phases, a sequential extraction procedure (SEP), in which aquifer solids are exposed to increasingly aggressive leaching solutions to correlate metals with specific aquifer solid phases, was completed in composite solids from G401 and background location G270.

The SEP results identified cobalt associated with sulfide-bearing minerals (Table 2), which may include the reduced iron-bearing mineral pyrite (FeS). Pyrite was present in aquifer solids at the background location G270 (0.2%) but was not detected at G401 (Table 3). The lower solid phase cobalt concentration and lack of pyrite at G401 compared to the background location suggests mobilization of cobalt to groundwater via the oxidative dissolution of pyrite.

The geochemical conditions at monitoring well G401 are at an equilibrium between ferric (Fe^{2+}) and ferrous (Fe^{3+}) iron species, which would favor the dissolution of reduced iron-bearing minerals such as pyrite (Figure 2). These equilibrium conditions are consistent with the higher dissolved iron concentrations observed at G401 relative to the other wells (Table 1). Isomorphically substituted cobalt associated with pyrite would also be released to groundwater during the oxidative dissolution process, resulting in elevated aqueous cobalt concentrations.

In summary, the association of cobalt with iron minerals present in sediments of the Hagarstown Member, as well as the presence of geochemical conditions necessary to mobilize cobalt from soil to groundwater indicate that elevated concentrations of cobalt at monitoring well G401 are likely the result of naturally occurring geochemical variations in the Uppermost Aquifer.

SECTION 4

CONCLUSION

It has been demonstrated that the cobalt SSL at G401 is not due to a release from the AP2 CCR unit, but is instead from a source other than the CCR being monitored. The following summarizes the three LOEs used to support this demonstration:

1. Cobalt concentrations in the AP2 source water are historically lower than the average cobalt concentrations observed in well G401, which is the opposite of what would be expected if AP2 water was the source.
2. Cobalt concentrations at G410, which is not hydraulically connected to potential groundwater impacts from AP2, are not associated with CCR indicator parameters (i.e., boron and sulfate). Therefore, aqueous cobalt can be associated with areas of the Site that are not impacted by AP2, supporting a conclusion that cobalt is naturally occurring.
3. Cobalt is present in the native aquifer media (solids and liquids) at the site, providing an alternative source across the Site under the appropriate geochemical conditions. The cobalt is released to groundwater via the oxidative dissolution of reduced iron-bearing minerals present in sediments of the Hagarstown Member.

The alternative source of cobalt is the localized occurrence of geochemical conditions favorable for the release of naturally occurring cobalt from the aquifer solids. Given the hydrogeology and geochemistry at G401 and G410, the relative concentration of cobalt at both locations is more strongly linked to the alternative natural source than to AP2.

This demonstration meets the expectations in both 40 C.F.R. § 257.95(3)(ii) and the Technical Manual for the Municipal Solid Waste Landfill regulatory program at 40 C.F.R. § 258 that a statistically significant increase may result from natural variation in the groundwater quality. This conclusion is reinforced by the cobalt concentrations at G410, which is not hydraulically connected to the potential AP2 source water and therefore must be influenced by natural geochemical variation.

The information serves as the written ASD prepared in accordance with 40 C.F.R. § 257.95(g)(3)(ii) that the SSL for cobalt at well G401 was not due to the AP2 CCR unit. Therefore, implementation of corrective measures is not required for cobalt at the AP2

CCR unit. Certification of this ASD by a qualified professional engineer is provided in Attachment B.

SECTION 5

REFERENCES

- AECOM. 2017. Closure and Post-Closure Care Plan for the Coffeen Ash Pond No. 2 at Illinois Power Generating Company Coffeen Power Station. January.
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- Ramboll, 2019. Corrective Measures Assessment. Coffeen Ash Pond No. 2 – CCR Units ID 102. July.
- Ramboll, 2022. 2021 Annual Groundwater Monitoring and Corrective Action Report. Coffeen Power Plant Ash Pond No. 2. January.

FIGURES



Legend

- | | |
|--|----------------------------|
| In-Network Monitoring Wells | Groundwater Flow Direction |
| Out-of-Network Monitoring Wells | Unnamed Creek |
| Potentiometric Surface Countour | Pond Outline |
| Inferred Potentiometric Surface Countour | |

Notes

- Well locations are approximate.
- Potentiometric groundwater contours and groundwater flow directions were modified from the Hydrogeologic Site Characterization Report (Ramboll, 2021).
- Groundwater contours were generated using data obtained in July 2021.



0 520
Feet

Ash Pond No. 2 Site Layout

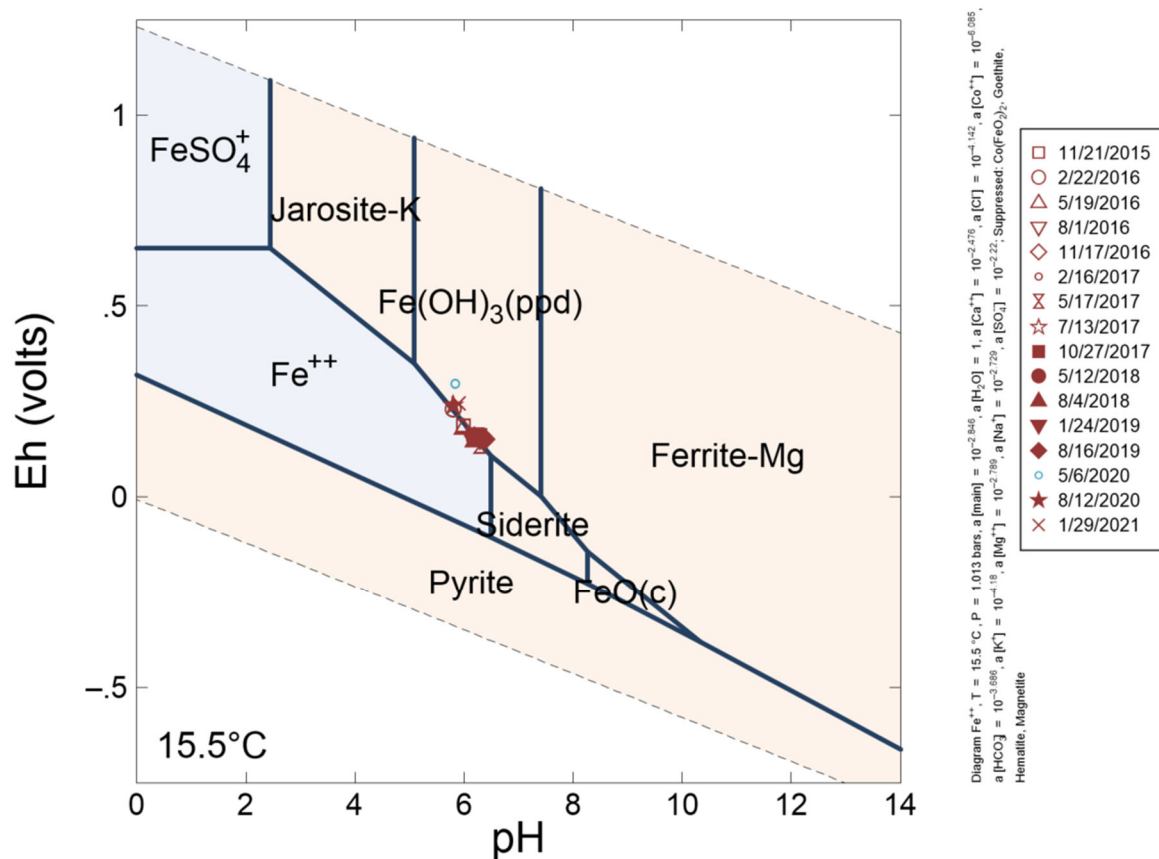
134 Cips Lane
Coffeen, Illinois

Geosyntec
consultants

St. Louis

June 2022

**Figure
1**



Notes: Conditions for well G401 were used to generate the diagram. Field ORP values were converted to E_H with a correction for the SHE electrode.

Groundwater E_H – pH Diagram for Well G401

Geosyntec
consultants

Columbus, OH

July 2022

Figure
2

TABLES

Table 1 - Groundwater Concentration Summary *Geosyntec Consultants, Inc.*
Ash Pond No. 2 - Coffeen Power Plant

Well ID	Location	Boron mg/L	Cobalt µg/L	Iron mg/L	Manganese mg/L	Sulfate mg/L
AP2	--	6.4	< 2	--	--	1650
G270*	In-Network	0.014	< 2	0.57	0.026	52
G281*		< 0.010	< 2	0.038	0.12	300
G401		3.6	230	220	38.0	2100
G402		5.00	< 2	2.4	1.1	840
G403		0.050	< 2	0.50	0.2	34
G404		2.30	< 2	0.078	0.14	140
G405		9.10	< 2	0.17	1	1000
G154	Out-of-Network	0.030	< 2	0.95	0.1	78
G279		0.570	< 2	0.031	0.0027	750
G280		0.018	< 2	0.22	0.0077	77
G406		1.40	< 2	< 0.01	4.10	570
G407		0.066	< 2	0.13	0.43	1100
G410		0.16	11	1.6	11.0	40
G411		0.099	< 2	0.04	0.074	270

Notes:

All monitoring well data were collected May 2020. AP2 leachate data was collected October 2016.

Total concentrations are shown.

Wells of interest are highlighted in green.

Non-detect values are shown as less than the reporting limit.

* indicates background monitoring well

-- indicates constituents were not analyzed

Table 2 - SEP Results Summary
Ash Pond No. 2 - Coffeen Power Plant

Geosyntec Consultants, Inc.

Location	G401		G270	
Description	Downgradient		Background	
Total Cobalt	6.1		10.0	
SEP Results				
	Concentration	% of Total	Concentration	% of Total
Exchangeable Fraction	<0.21	--	<0.21	--
Carbonate Fraction	<0.22	--	<0.22	--
Crystalline Fe/Mn Materials	2.4	46.1%	4.3	47.5%
Fe/Mn Hydroxide Fraction	1.9	36.5%	2.8	30.9%
Organic Bound Fraction	<0.69	--	<0.70	--
Acid/Sulfide Fraction	0.85	16.3%	1.6	17.7%
Residual Fraction	0.061	1.2%	0.36	4.0%

Notes:

SEP - sequential extraction procedure

All results shown in microgram of cobalt per gram of soil (µg/g).

Total cobalt was analyzed using USEPA Method 6010B.

Non-detect values are shown as less than the detection limit.

The cobalt fraction associated with each SEP phase is shown.

% of total cobalt is calculated from the sum of the SEP fractions.

Table 3 - XRD Results Summary
Ash Pond No. 2 - Coffeen Power Plant

Geosyntec Consultants, Inc.

Site Material		G401	G270
Mineral	Mineral Composition	Downgradient	Background
		%	%
Quartz	SiO ₂	68.9	60.6
Biotite	K(Mg,Fe) ₃ (AlSi ₃ O ₁₀)(OH) ₂	2.1	2.4
Pyrite	FeS ₂	--	0.2
Albite	NaAlSi ₃ O ₈	8.6	9.1
Muscovite	KAl ₂ (AlSi ₃ O ₁₀)(OH) ₂	6.8	9.0
Dolomite	CaMg(CO ₃) ₂	--	0.6
Microcline	KAlSi ₃ O ₈	7.8	9.8
Ankerite	CaFe(CO ₃) ₂	0.1	0.5
Chlorite	(Fe,(Mg,Mn) ₅ ,Al)(Si ₃ Al)O ₁₀ (OH) ₈	--	1.4
Diopside	CaMgSi ₂ O ₆	1.4	1.3
Actinolite	Ca ₂ (Mg,Fe) ₅ Si ₈ O ₂₂ (OH) ₂	1.4	3.3
Stilpnomelane	K(Fe ²⁺ ,Mg,Fe ³⁺) ₈ (Si,Al) ₁₂ (O,OH) ₂₇ ·n(H ₂ O)	2.7	2.0

Notes:

All samples collected May 12, 2021

-- - not detected

% - percent

Al - aluminum

C - carbon

Ca - calcium

Fe - iron

H - hydrogen

K - potassium

Mg - magnesium

Mn - manganese

Na - sodium

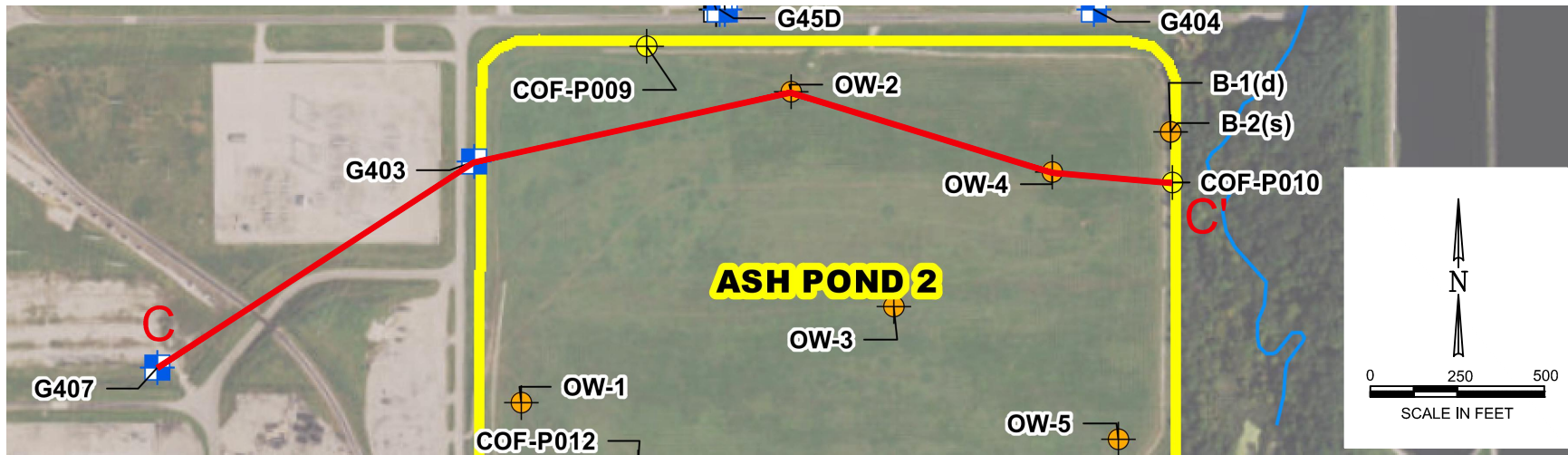
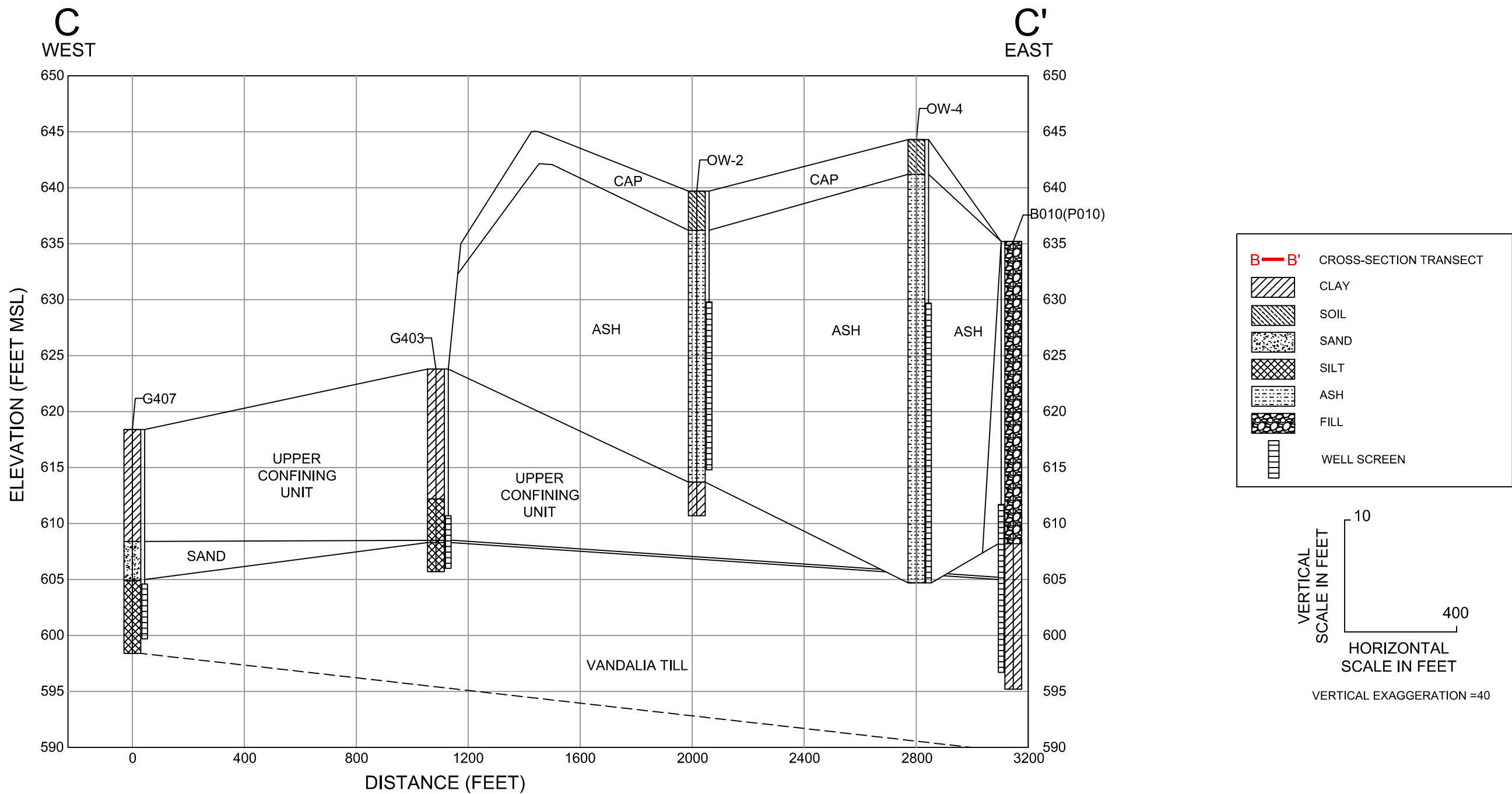
O - oxygen

Si - silicon

XRD - X-ray diffraction

ATTACHMENT A
Geologic Cross Section
(NRT, 2017b)

Dec 21, 2016 12:13pm PLOTTED BY: amillsbaugh SAVED BY: acawrse
Y:\Mapping\Projects\23\2380\CA0\2-0\Figure 11_Geologic Cross-Section C-C'.dwg Layout1
IMAGES:
XREFS:



DRAWN BY:	AGC	DATE:	12/1/16
CHECKED BY:	NRK	DATE:	12/20/16
APPROVED BY:	SJC	DATE:	12/20/16
DRAWING NO: Fig 11_Geologic Cross-Section C-C'			
REFERENCE: SEE INFO BLOCK			

GEOLOGIC CROSS-SECTION C-C'

HYDROGEOLOGIC CHARACTERIZATION REPORT
ASH POND 2
COFFEEN POWER STATION
COFFEEN, IL



DRAFT

PROJECT NO.
2380/2.0

FIGURE NO.
11

ATTACHMENT B

Certification by Qualified Professional Engineer

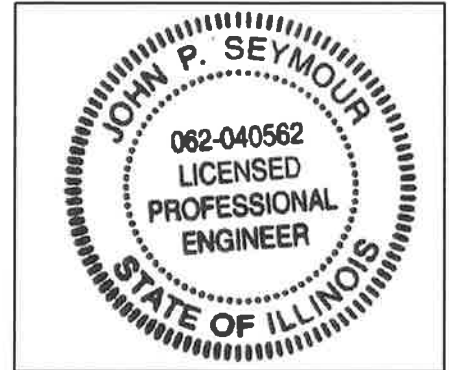
CERTIFICATION BY A QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected and above described alternative source demonstration is appropriate for evaluating the groundwater monitoring data for the Coffeen Power Plant Ash Pond No. 2 CCR management area and that the requirements of 40 CFR 257.95(g)(3) have been met.

John Seymour

Printed Name of Licensed Professional Engineer

John Seymour
Signature



062-040562
License Number

Illinois
Licensing State

July 7, 2022
Date