Prepared for
Dynegy Midwest Generation, LLC

Date
January 31, 2024

Project No.
1940103649-008

2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

LANDFILL

HENNEPIN POWER PLANT

HENNEPIN, ILLINOIS

CCR UNIT 801

RAMBOLL Bright ideas. Sustainable change.

2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT HENNEPIN POWER PLANT LANDFILL

Project name	**Hennepin Power Plant Landfill**
Project no.	**1940103649-008**
Recipient	**Dynegy Midwest Generation, LLC**
Document type	**Annual Groundwater Monitoring and Corrective Action Report**
Version	**FINAL**
Date	**January 31, 2024**
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Description	**Annual Report required by 40 C.F.R. § 257.90(e)**

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ACRONYMS AND ABBREVIATIONS

40 C.F.R.	Title 40 of the Code of Federal Regulations
ASD	Alternative Source Demonstration
CCR	coal combustion residuals
D11	Quarter 3, 2022 Detection Monitoring sampling event
D12	Quarter 1, 2023 Detection Monitoring sampling event
D13	Quarter 3, 2023 Detection Monitoring sampling event
LF	Landfill
GWPS	groundwater protection standard
HPP	Hennepin Power Plant
NA	not applicable
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SAP	Sampling and Analysis Plan
SSI	statistically significant increase
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.) § 257.90(e) for the Landfill (LF) located at the Hennepin Power Plant (HPP) near Hennepin, Illinois.

Groundwater is being monitored at the LF in accordance with the Detection Monitoring Program requirements specified in 40 C.F.R. § 257.94.

The LF monitoring system was modified in 2023 to add wells 16 and 17 as background locations. No wells were installed or decommissioned.

The following Statistically Significant Increases (SSIs) of 40 C.F.R. § 257 Appendix III parameter concentrations greater than background concentrations were reported in 2023:

- Boron at wells 05R, 05DR, 40S, and 48
- Fluoride at wells 05R, 05DR, 40S, and 48
- pH at wells 05R, 40S

Alternative Source Demonstrations (ASDs) were completed for the SSIs listed above and the LF remains in the Detection Monitoring Program.

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of Dynegy Midwest Generation, LLC, to provide the information required by 40 C.F.R. § 257.90(e) for the LF located at the HPP near Hennepin, 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 (**Section 2**), summarizes key actions completed (**Section 3**), describes any problems encountered and actions to resolve the problems (**Section 4**), and projects key activities for the upcoming year (**Section 5**). 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 (**Figure 1**).
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 (**Section 3**, paragraph 1).
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 (**Section 3, Table A**).
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) (**Section 3**).
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 (see **Executive Summary**). 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 [GWPS] for one or more constituents listed in Appendix IV of § 257 pursuant to § 257.95(g) include all of the following:

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

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

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

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

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

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

This report provides the required information for the LF for calendar year 2023.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

No changes have occurred to the monitoring program status in calendar year 2023 and the LF remains in the Detection Monitoring Program in accordance with 40 C.F.R. § 257.94.

3. KEY ACTIONS COMPLETED IN 2023

A summary of the samples collected from background and compliance monitoring wells in 2023 under the Detection Monitoring Program is included 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**. A groundwater monitoring plan (GMP) was developed for the LF in 2023; the existing LF monitoring system was modified in 2023 to add existing wells 16 and 17 as background locations (Ramboll, 2023a). No wells were installed or decommissioned in 2023 (wells 16 and 17 were installed prior to 2023).

One groundwater sample was collected from each background and compliance well during each monitoring event[1]. All samples were collected and analyzed in accordance with the Multi-Site Sampling and Analysis Plan (SAP) (Ramboll, 2023b).

Potentiometric surfaces are included in **Figures 2 and 3**. All available monitoring data and analytical results obtained under 40 C.F.R. § 257.90 through 257.98 are presented in **Tables 1 and 2**. All associated laboratory reports and field data sheets are included in **Appendix A**. Analytical data received after December 31, 2023 will be reported in the 2024 Annual Groundwater Monitoring and Corrective Action Report.

Analytical data were evaluated in accordance with the Multi-Site Statistical Analysis Plan (Ramboll, 2022a), the Multi-Site Quality Assurance Project Plan (Ramboll, 2022b), and the Multi-Site Data Management Plan (Ramboll, 2022c) to determine any SSIs of Appendix III parameters greater than background values. SSIs are summarized in **Table A** and highlighted in **Table 2**. Wells 16 and 17 were added to the monitoring system as background wells in mid-2023. The background values used for each event are shown on **Table 2.** The updated background values were used beginning in the third quarter of 2023. Statistical background values are provided in **Table 3**. A flow chart showing the statistical methodology for determination of background values is included as **Appendix B**. Additional information to support background statistics is provided in **Appendix C**.

Potential alternative sources were evaluated as outlined in the 40 C.F.R. § 257.94(e)(2). ASDs were completed in 2023 for the SSIs summarized in **Table A**. The dates the ASDs were completed are also provided in **Table A**. The ASDs were certified by a qualified professional engineer and are included in **Appendix D**. The LF remains in the Detection Monitoring Program.

[1] Compliance monitoring well 48 was not sampled during the December 2023 sampling event due to damage to the well. Repairs or replacement of well 48 will occur in 2024.

Table A. 2023 Detection Monitoring Program Summary

Event ID	Sampling Dates [1, 2, 3]	Analytical Data Receipt Date [4]	SSI(s) Determination Date	SSI(s)	ASD Completion Date
D11 [5]	September 14, 2022	October 31, 2022	January 31, 2023	Boron at wells 05DR, 05R, 40S, and 48; Fluoride at wells 05DR, 05R, 40S, and 48; pH at wells 05R and 40S	May 1, 2023
D12	February 28 – March 2, 2023	April 14, 2023	July 13, 2023	Boron at wells 05DR, 05R, 40S, and 48; pH at well 40S	October 11, 2023
D13	August 23 - 28, 2023	November 16, 2023	February 14, 2024	TBD	NA

Notes:

ASD: Alternative Source Demonstration

NA: not applicable

SSL: Statistically Significant Level

TBD: to be determined in 2024

[1] All samples were analyzed for Appendix III parameters listed in 40 C.F.R. § 257.94(e).

[2] The following background wells were sampled for events D11 and D12 prior to completion of the background update evaluation: 07, 08, and 08D. The following background wells were sampled for event D13 after completion of the background update evaluation: 07, 08, 08D, 16, and 17.

[3] The following compliance wells were sampled for each event: 05DR, 05R, 40S, and 48.

[4] Analytical data received after December 31, 2023 will be reported in the 2024 Annual Groundwater Monitoring and Corrective Action Report.

[5] Laboratroy reports and associated analytical data tables were included in the 2022 Annual Groundwater Monitoring and Corrective Action Report.

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

Monitoring well 48 was damaged by a lawn mower in 2023, and was no longer capable of being sampled following detailed inspection in November. This well will either be repaired or replaced in early 2024, as feasible.

No additional problems were encountered with the groundwater monitoring program during 2023. Groundwater samples were collected and analyzed in accordance with the SAP and all data were accepted.

5. KEY ACTIVITIES PLANNED FOR 2024

The following key activities are planned for 2024:

- Continuation of the Detection Monitoring Program with semiannual sampling scheduled for the first and third quarters of 2024.
- 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.
- If an SSI is identified, potential alternative sources (*i.e.,* a source other than the CCR unit caused the SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality) will be evaluated.
  - If an alternative source is identified to be the cause of the SSI, a written demonstration will be completed within 90 days of SSI determination and included in the 2024 Annual Groundwater Monitoring and Corrective Action Report.
  - If an alternative source(s) is not identified to be the cause of the SSI, the applicable requirements of 40 C.F.R. §§ 257.94 through 257.98 as may apply in 2024 (*e.g.,* assessment monitoring) will be met, including associated recordkeeping/notifications required by 40 C.F.R. §§ 257.105 through 257.108.
- Compliance monitoring well 48 will be repaired or replaced in 2024.

6. REFERENCES

Code of Federal Regulations, Title 40, Chapter I, Subchapter I, Part 257, Subpart D, Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, effective April 17, 2015. Accessed from URL https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-257/subpart-D#page-top

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022a. Multi-Site Statistical Analysis Plan, 40 C.F.R. § 257. 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), 2023a. 40 C.F.R. § 257 Groundwater Monitoring Plan, Landfill, Hennepin Power Plant, Hennepin, Illinois. October 10, 2023.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2023b. Multi-Site Sampling and Analysis Plan, Revision 1. October 10, 2023.

TABLES

TABLE 1
GROUNDWATER ELEVATION DATA
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
05R	Compliance	UA	03/01/2023	41.26	447.17
05R	Compliance	UA	05/30/2023	41.35	447.08
05R	Compliance	UA	08/21/2023	38.69	449.74
05R	Compliance	UA	10/31/2023	41.19	447.24
05R	Compliance	UA	11/13/2023	41.37	447.06
05DR	Compliance	UA	03/01/2023	41.20	447.17
05DR	Compliance	UA	05/30/2023	41.32	447.05
05DR	Compliance	UA	08/21/2023	38.73	449.64
05DR	Compliance	UA	10/31/2023	41.23	447.14
05DR	Compliance	UA	11/13/2023	41.44	446.93
07	Background	UA	03/01/2023	68.85	449.42
07	Background	UA	03/30/2023	67.72	450.54
07	Background	UA	04/30/2023	67.44	450.82
07	Background	UA	05/30/2023	67.80	450.47
07	Background	UA	06/21/2023	68.16	450.10
07	Background	UA	07/21/2023	68.13	450.13
07	Background	UA	08/21/2023	68.39	449.87
07	Background	UA	10/31/2023	68.55	449.72
07	Background	UA	11/13/2023	68.54	449.73
07	Background	UA	12/21/2023	69.03	449.24
08	Background	UA	03/01/2023	54.20	447.18
08	Background	UA	03/30/2023	52.78	448.59
08	Background	UA	04/30/2023	53.22	448.15
08	Background	UA	05/30/2023	53.84	447.54
08	Background	UA	06/21/2023	53.99	447.38
08	Background	UA	07/21/2023	53.66	447.71
08	Background	UA	08/21/2023	54.24	447.13
08	Background	UA	09/30/2023	54.43	446.95
08	Background	UA	10/31/2023	53.85	447.53
08	Background	UA	11/13/2023	54.02	447.36
08	Background	UA	12/21/2023	54.80	446.58
08D	Background	UA	03/01/2023	54.27	447.07
08D	Background	UA	03/30/2023	52.89	448.44
08D	Background	UA	04/30/2023	53.49	447.84
08D	Background	UA	05/30/2023	54.12	447.22
08D	Background	UA	06/21/2023	54.12	447.21
08D	Background	UA	07/21/2023	53.75	447.58
08D	Background	UA	08/21/2023	54.44	446.89
08D	Background	UA	09/30/2023	54.61	446.73
08D	Background	UA	10/31/2023	54.04	447.30
08D	Background	UA	11/13/2023	54.23	447.11
08D	Background	UA	12/21/2023	55.00	446.34
16	Background	UA	02/28/2023	54.86	446.88
16	Background	UA	05/30/2023	54.57	447.17
16	Background	UA	08/28/2023	[53.90]	[447.84]
16	Background	UA	09/30/2023	55.00	446.74

TABLE 1
GROUNDWATER ELEVATION DATA
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
16	Background	UA	10/31/2023	54.47	447.27
16	Background	UA	11/13/2023	54.67	447.07
16	Background	UA	12/21/2023	55.45	446.29
17	Background	UA	02/28/2023	59.08	448.05
17	Background	UA	03/30/2023	57.25	449.87
17	Background	UA	04/30/2023	56.31	450.81
17	Background	UA	05/30/2023	55.96	451.17
17	Background	UA	06/21/2023	54.99	452.13
17	Background	UA	07/21/2023	54.68	452.44
17	Background	UA	08/21/2023	56.12	451.00
17	Background	UA	10/31/2023	55.56	451.57
17	Background	UA	11/13/2023	56.23	450.90
17	Background	UA	12/21/2023	59.29	447.84
40S	Compliance	UA	03/01/2023	40.55	447.12
40S	Compliance	UA	05/30/2023	40.54	447.13
40S	Compliance	UA	08/21/2023	37.92	449.75
40S	Compliance	UA	10/31/2023	40.42	447.25
40S	Compliance	UA	11/13/2023	40.61	447.06
48	Compliance	UA	03/01/2023	40.24	447.22
48	Compliance	UA	05/30/2023	39.78	447.68

Notes:
Only wells with groundwater elevations measured are included.
BMP = below measuring point
Bracketing [ ] indicates that the measurement was obtained outside of the episodic depth to groundwater measurements time frame.
NAVD88 = North American Vertical Datum of 1988
Monitored Unit Abbreviations:

UA = uppermost aquifer

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TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	HSU	Well Type	Date	Event ID	Parameter	Unit	Result	Background[1]	SSI Type
07	UA	Background	03/01/2023	D12	Boron, total	mg/L	0.0658	NA	NA
07	UA	Background	08/24/2023	D13	Boron, total	mg/L	0.0670	NA	NA
07	UA	Background	03/01/2023	D12	Calcium, total	mg/L	146	NA	NA
07	UA	Background	08/24/2023	D13	Calcium, total	mg/L	94.0	NA	NA
07	UA	Background	03/01/2023	D12	Chloride, total	mg/L	105	NA	NA
07	UA	Background	08/24/2023	D13	Chloride, total	mg/L	51.0	NA	NA
07	UA	Background	03/01/2023	D12	Fluoride, total	mg/L	0.120	NA	NA
07	UA	Background	08/24/2023	D13	Fluoride, total	mg/L	0.24 J	NA	NA
07	UA	Background	11/20/2023	D13R	Fluoride, total	mg/L	0.120	NA	NA
07	UA	Background	03/01/2023	D12	pH (field)	SU	7.0	NA	NA
07	UA	Background	08/24/2023	D13	pH (field)	SU	6.9	NA	NA
07	UA	Background	03/01/2023	D12	Sulfate, total	mg/L	76.0	NA	NA
07	UA	Background	08/24/2023	D13	Sulfate, total	mg/L	67.0	NA	NA
07	UA	Background	03/01/2023	D12	Total Dissolved Solids	mg/L	638	NA	NA
07	UA	Background	08/24/2023	D13	Total Dissolved Solids	mg/L	640	NA	NA
08	UA	Background	03/01/2023	D12	Boron, total	mg/L	0.118	NA	NA
08	UA	Background	08/24/2023	D13	Boron, total	mg/L	0.0700	NA	NA
08	UA	Background	03/01/2023	D12	Calcium, total	mg/L	176	NA	NA
08	UA	Background	08/24/2023	D13	Calcium, total	mg/L	160	NA	NA
08	UA	Background	03/01/2023	D12	Chloride, total	mg/L	227	NA	NA
08	UA	Background	08/24/2023	D13	Chloride, total	mg/L	240	NA	NA
08	UA	Background	03/01/2023	D12	Fluoride, total	mg/L	0.100	NA	NA
08	UA	Background	08/24/2023	D13	Fluoride, total	mg/L	0.19 J	NA	NA
08	UA	Background	11/17/2023	D13R	Fluoride, total	mg/L	0.089 J	NA	NA
08	UA	Background	03/01/2023	D12	pH (field)	SU	6.7	NA	NA
08	UA	Background	08/24/2023	D13	pH (field)	SU	6.7	NA	NA
08	UA	Background	03/01/2023	D12	Sulfate, total	mg/L	129	NA	NA
08	UA	Background	08/24/2023	D13	Sulfate, total	mg/L	100	NA	NA
08	UA	Background	03/01/2023	D12	Total Dissolved Solids	mg/L	1,020	NA	NA
08	UA	Background	08/24/2023	D13	Total Dissolved Solids	mg/L	1,100	NA	NA
08D	UA	Background	03/01/2023	D12	Boron, total	mg/L	0.0942	NA	NA
08D	UA	Background	08/24/2023	D13	Boron, total	mg/L	0.0510	NA	NA
08D	UA	Background	03/01/2023	D12	Calcium, total	mg/L	255	NA	NA
08D	UA	Background	08/24/2023	D13	Calcium, total	mg/L	200	NA	NA
08D	UA	Background	03/01/2023	D12	Chloride, total	mg/L	319	NA	NA
08D	UA	Background	08/24/2023	D13	Chloride, total	mg/L	310	NA	NA
08D	UA	Background	03/01/2023	D12	Fluoride, total	mg/L	0.100	NA	NA
08D	UA	Background	08/24/2023	D13	Fluoride, total	mg/L	0.19 U	NA	NA
08D	UA	Background	11/17/2023	D13R	Fluoride, total	mg/L	0.097 J	NA	NA
08D	UA	Background	03/01/2023	D12	pH (field)	SU	6.5	NA	NA
08D	UA	Background	08/24/2023	D13	pH (field)	SU	6.6	NA	NA
08D	UA	Background	03/01/2023	D12	Sulfate, total	mg/L	279	NA	NA
08D	UA	Background	08/24/2023	D13	Sulfate, total	mg/L	170	NA	NA
08D	UA	Background	03/01/2023	D12	Total Dissolved Solids	mg/L	1,440	NA	NA
08D	UA	Background	08/24/2023	D13	Total Dissolved Solids	mg/L	1,400	NA	NA
16	UA	Background	02/28/2023	D12	Boron, total	mg/L	0.207	NA	NA

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	HSU	Well Type	Date	Event ID	Parameter	Unit	Result	Background[1]	SSI Type
16	UA	Background	08/28/2023	D13	Boron, total	mg/L	0.110	NA	NA
16	UA	Background	02/28/2023	D12	Calcium, total	mg/L	99.4	NA	NA
16	UA	Background	08/28/2023	D13	Calcium, total	mg/L	73.0	NA	NA
16	UA	Background	02/28/2023	D12	Chloride, total	mg/L	92.0	NA	NA
16	UA	Background	08/28/2023	D13	Chloride, total	mg/L	81.0	NA	NA
16	UA	Background	02/28/2023	D12	Fluoride, total	mg/L	0.240	NA	NA
16	UA	Background	08/28/2023	D13	Fluoride, total	mg/L	0.31 J	NA	NA
16	UA	Background	11/17/2023	D13R	Fluoride, total	mg/L	0.220	NA	NA
16	UA	Background	02/28/2023	D12	pH (field)	SU	7.2	NA	NA
16	UA	Background	08/28/2023	D13	pH (field)	SU	7.2	NA	NA
16	UA	Background	02/28/2023	D12	Sulfate, total	mg/L	78.0	NA	NA
16	UA	Background	08/28/2023	D13	Sulfate, total	mg/L	56.0	NA	NA
16	UA	Background	02/28/2023	D12	Total Dissolved Solids	mg/L	508	NA	NA
16	UA	Background	08/28/2023	D13	Total Dissolved Solids	mg/L	450	NA	NA
17	UA	Background	02/28/2023	D12	Boron, total	mg/L	0.106	NA	NA
17	UA	Background	08/28/2023	D13	Boron, total	mg/L	0.0760	NA	NA
17	UA	Background	02/28/2023	D12	Calcium, total	mg/L	133	NA	NA
17	UA	Background	08/28/2023	D13	Calcium, total	mg/L	58.0	NA	NA
17	UA	Background	02/28/2023	D12	Chloride, total	mg/L	108	NA	NA
17	UA	Background	08/28/2023	D13	Chloride, total	mg/L	80.0	NA	NA
17	UA	Background	02/28/2023	D12	Fluoride, total	mg/L	0.130	NA	NA
17	UA	Background	08/28/2023	D13	Fluoride, total	mg/L	0.36 J	NA	NA
17	UA	Background	11/17/2023	D13R	Fluoride, total	mg/L	0.210	NA	NA
17	UA	Background	02/28/2023	D12	pH (field)	SU	7.0	NA	NA
17	UA	Background	08/28/2023	D13	pH (field)	SU	7.3	NA	NA
17	UA	Background	02/28/2023	D12	Sulfate, total	mg/L	77.0	NA	NA
17	UA	Background	08/28/2023	D13	Sulfate, total	mg/L	58.0	NA	NA
17	UA	Background	02/28/2023	D12	Total Dissolved Solids	mg/L	630	NA	NA
17	UA	Background	08/28/2023	D13	Total Dissolved Solids	mg/L	420	NA	NA
05R	UA	Compliance	03/01/2023	D12	Boron, total	mg/L	0.854	0.153	Determined
05R	UA	Compliance	08/23/2023	D13	Boron, total	mg/L	0.510	0.172	TBD
05R	UA	Compliance	03/01/2023	D12	Calcium, total	mg/L	89.9	280	No Exceedance
05R	UA	Compliance	08/23/2023	D13	Calcium, total	mg/L	77.0	232	TBD
05R	UA	Compliance	03/01/2023	D12	Chloride, total	mg/L	88.0	396	No Exceedance
05R	UA	Compliance	08/23/2023	D13	Chloride, total	mg/L	82.0	297	TBD
05R	UA	Compliance	03/01/2023	D12	Fluoride, total	mg/L	0.130	0.120	No Exceedance
05R	UA	Compliance	08/23/2023	D13	Fluoride, total	mg/L	0.21 J	0.320	TBD
05R	UA	Compliance	11/16/2023	D13R	Fluoride, total	mg/L	0.130	0.320	TBD
05R	UA	Compliance	03/01/2023	D12	pH (field)	SU	7.5	6.6/7.5	No Exceedance
05R	UA	Compliance	08/23/2023	D13	pH (field)	SU	7.6	6.3/7.5	TBD
05R	UA	Compliance	03/01/2023	D12	Sulfate, total	mg/L	80.0	200	No Exceedance
05R	UA	Compliance	08/23/2023	D13	Sulfate, total	mg/L	73.0	199	TBD
05R	UA	Compliance	03/01/2023	D12	Total Dissolved Solids	mg/L	500	1,520	No Exceedance
05R	UA	Compliance	08/23/2023	D13	Total Dissolved Solids	mg/L	530	1,410	TBD
05DR	UA	Compliance	03/01/2023	D12	Boron, total	mg/L	0.805	0.153	Determined
05DR	UA	Compliance	08/23/2023	D13	Boron, total	mg/L	0.680	0.172	TBD

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	HSU	Well Type	Date	Event ID	Parameter	Unit	Result	Background[1]	SSI Type
05DR	UA	Compliance	03/01/2023	D12	Calcium, total	mg/L	93.0	280	No Exceedance
05DR	UA	Compliance	08/23/2023	D13	Calcium, total	mg/L	73.0	232	TBD
05DR	UA	Compliance	03/01/2023	D12	Chloride, total	mg/L	92.0	396	No Exceedance
05DR	UA	Compliance	08/23/2023	D13	Chloride, total	mg/L	76.0	297	TBD
05DR	UA	Compliance	03/01/2023	D12	Fluoride, total	mg/L	0.150	0.120	No Exceedance
05DR	UA	Compliance	08/23/2023	D13	Fluoride, total	mg/L	0.24 J	0.320	TBD
05DR	UA	Compliance	11/16/2023	D13R	Fluoride, total	mg/L	0.150	0.320	TBD
05DR	UA	Compliance	03/01/2023	D12	pH (field)	SU	7.3	6.6/7.5	No Exceedance
05DR	UA	Compliance	08/23/2023	D13	pH (field)	SU	7.4	6.3/7.5	TBD
05DR	UA	Compliance	03/01/2023	D12	Sulfate, total	mg/L	82.0	200	No Exceedance
05DR	UA	Compliance	08/23/2023	D13	Sulfate, total	mg/L	75.0	199	TBD
05DR	UA	Compliance	03/01/2023	D12	Total Dissolved Solids	mg/L	488	1,520	No Exceedance
05DR	UA	Compliance	08/23/2023	D13	Total Dissolved Solids	mg/L	490	1,410	TBD
40S	UA	Compliance	03/01/2023	D12	Boron, total	mg/L	1.21	0.153	Determined
40S	UA	Compliance	08/23/2023	D13	Boron, total	mg/L	1.30	0.172	TBD
40S	UA	Compliance	03/01/2023	D12	Calcium, total	mg/L	75.5	280	No Exceedance
40S	UA	Compliance	08/23/2023	D13	Calcium, total	mg/L	58.0	232	TBD
40S	UA	Compliance	03/01/2023	D12	Chloride, total	mg/L	99.0	396	No Exceedance
40S	UA	Compliance	08/23/2023	D13	Chloride, total	mg/L	73.0	297	TBD
40S	UA	Compliance	03/01/2023	D12	Fluoride, total	mg/L	0.160	0.120	No Exceedance
40S	UA	Compliance	08/23/2023	D13	Fluoride, total	mg/L	0.24 J	0.320	TBD
40S	UA	Compliance	11/16/2023	D13R	Fluoride, total	mg/L	0.170	0.320	TBD
40S	UA	Compliance	03/01/2023	D12	pH (field)	SU	7.7	6.6/7.5	Determined
40S	UA	Compliance	08/23/2023	D13	pH (field)	SU	7.9	6.3/7.5	TBD
40S	UA	Compliance	03/01/2023	D12	Sulfate, total	mg/L	95.0	200	No Exceedance
40S	UA	Compliance	08/23/2023	D13	Sulfate, total	mg/L	92.0	199	TBD
40S	UA	Compliance	03/01/2023	D12	Total Dissolved Solids	mg/L	474	1,520	No Exceedance
40S	UA	Compliance	08/23/2023	D13	Total Dissolved Solids	mg/L	480	1,410	TBD
48	UA	Compliance	03/01/2023	D12	Boron, total	mg/L	1.41	0.153	Determined
48	UA	Compliance	08/23/2023	D13	Boron, total	mg/L	1.40	0.172	TBD
48	UA	Compliance	03/01/2023	D12	Calcium, total	mg/L	87.6	280	No Exceedance
48	UA	Compliance	08/23/2023	D13	Calcium, total	mg/L	64.0	232	TBD
48	UA	Compliance	03/01/2023	D12	Chloride, total	mg/L	104	396	No Exceedance
48	UA	Compliance	08/23/2023	D13	Chloride, total	mg/L	74.0	297	TBD
48	UA	Compliance	03/01/2023	D12	Fluoride, total	mg/L	0.180	0.120	No Exceedance
48	UA	Compliance	08/23/2023	D13	Fluoride, total	mg/L	0.25 J	0.320	TBD
48	UA	Compliance	03/01/2023	D12	pH (field)	SU	7.5	6.6/7.5	No Exceedance
48	UA	Compliance	08/23/2023	D13	pH (field)	SU	7.6	6.3/7.5	TBD
48	UA	Compliance	03/01/2023	D12	Sulfate, total	mg/L	86.0	200	No Exceedance
48	UA	Compliance	08/23/2023	D13	Sulfate, total	mg/L	100	199	TBD
48	UA	Compliance	03/01/2023	D12	Total Dissolved Solids	mg/L	476	1,520	No Exceedance
48	UA	Compliance	08/23/2023	D13	Total Dissolved Solids	mg/L	490	1,410	TBD

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Notes:
[1]Wells 16 and 17 were added to the monitoring system as background wells in mid-2023.The background values used for each event are shown. The updated background values were used beginning in the third quarter of 2023.
HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

ID = identification
mg/L = milligrams per liter
NA = not applicable
R = resample
Statistically Significant Increase (SSI) Type:

TBD: To be determined in 2024.

No Exceedance: No exceedance of the background.

Determined: An exceedance was determined without comparison to a resample.

SU = Standard Units
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate.

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TABLE 3
STATISTICAL BACKGROUND VALUES
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Parameter	Q1					Q3				
	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)
Boron (mg/L)	12/08/2015 - 06/09/2017	24	0	Parametric UPL	0.153	02/24/2021 - 09/14/2022	55	0	Parametric UPL (log-transformed)	0.172
Calcium (mg/L)	12/08/2015 - 06/09/2017	24	0	Parametric UPL	280	02/24/2021 - 09/14/2022	55	0	Non-Parametric UPL	232
Chloride (mg/L)	12/08/2015 - 06/09/2017	24	0	Parametric UPL	396	02/24/2021 - 09/14/2022	55	0	Non-Parametric UPL	297
Fluoride (mg/L)	12/08/2015 - 06/09/2017	24	58	Non-parametric UPL	0.120	02/24/2021 - 09/14/2022	55	5	Non-Parametric UPL	0.320
pH (field) (SU)	12/08/2015 - 06/09/2017	24	0	Non-parametric UPL	6.6/7.5	02/24/2021 - 09/14/2022	55	0	Parametric LPL/UPL	6.3/7.5
Sulfate (mg/L)	12/08/2015 - 06/09/2017	24	0	Parametric UPL	200	02/24/2021 - 09/14/2022	55	0	Non-Parametric UPL	199
Total Dissolved Solids (mg/L)	12/08/2015 - 06/09/2017	24	0	Parametric UPL	1,520	02/24/2021 - 09/14/2022	52	0	Non-Parametric UPL	1410

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

FIGURES

BACKGROUND WELL
COMPLIANCE WELL
REGULATED UNIT (SUBJECT UNIT)
SITE FEATURE
LIMITS OF FINAL COVER
PROPERTY BOUNDARY

0 175 350
Feet

MONITORING WELL LOCATION MAP

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\222285\MXD\2021_AnnualGWM_CAR\Hennepin\Landfill_801\Figure 1 HEN Landfill MW Location Map.mxd

PROJECT: 169000XXXX | DATED: 1/6/2022 | DESIGNER: galarmmc

- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- PORE WATER WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- 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)
*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT

0 175 350
Feet

POTENTIOMETRIC SURFACE MAP FEBRUARY 28 AND MARCH 1, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\2212285\MXD\GW_Contours\Round_2023\Hennepin\LF_801\HEN Landfill 801 Pot Surface 20230228.mxd

PROJECT: 169000XXXX | DATED: 4/24/2023 | DESIGNER: GALARNMC

COMPLIANCE MONITORING WELL
BACKGROUND MONITORING WELL
MONITORING WELL
PORE WATER WELL
STAFF GAGE, CCR UNIT
GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
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)
*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT

0 175 350
Feet

POTENTIOMETRIC SURFACE MAP AUGUST 21, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 3

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\22\22285\MXD\GW_Contours\Round_2023\Hennepin\LF_801\HEN 801 LF Pot Surface 20230821.mxd

PROJECT: 169000XXXX | DATED: 11/20/2023 | DESIGNER: GALARNMC

APPENDICES

APPENDIX A
LABORATORY REPORTS AND FIELD DATA SHEETS

Teklab, Inc.
Environmental Laboratory
http://www.teklabinc.com/

April 14, 2023

Eric Bauer
Ramboll
234 W. Florida St.
Milwaukee, WI 53204
TEL: (414) 837-3614
FAX: (414) 837-3608

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

RE: HEN-23Q1 **WorkOrder:** 23020845

Dear Eric Bauer:

TEKLAB, INC received 51 samples on 3/2/2023 8:00:00 AM for the analysis presented in the following report.

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

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

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

Sincerely,

Elizabeth A. Hurley

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

Report Contents

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	7
Laboratory Results	8
Sample Summary	20
Dates Report	21
Quality Control Results	33
Receiving Check List	70
Chain of Custody	Appended

Definitions

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Definitions

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Qualifiers

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

Case Narrative

Client: Ramboll
Client Project: HEN-23Q1

Work Order: 23020845
Report Date: 14-Apr-23

Cooler Receipt Temp: 3.2 °C

An employee of Teklab, Inc. collected the sample(s).

55 was measured on 3/1/23 at 1008 per field file. 05DR was collected at 1237 rather than 1257 per field file. EAH 3/21/23

HEN_257_801 data is included in this report. EAH 4/14/23

Locations

Collinsville

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

Springfield

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

Kansas City

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

Collinsville Air

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

Chicago

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

Accreditations

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Teklab, Inc. Environmental Laboratory

Laboratory Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-002 **Client Sample ID:** 07

Matrix: GROUNDWATER **Collection Date:** 03/01/2023 16:16

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**68.85**	ft	1	03/01/2023 16:16	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.96**		1	03/01/2023 16:16	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	03/01/2023 16:16	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**161.2**	mV	1	03/01/2023 16:16	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**1467**	µS/cm	1	03/01/2023 16:16	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**11.2**	°C	1	03/01/2023 16:16	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**2.69**	mg/L	1	03/01/2023 16:16	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**385**	mg/L	1	03/03/2023 14:45	R325591
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/03/2023 14:45	R325591
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**638**	mg/L	1	03/02/2023 11:20	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**76**	mg/L	5	03/07/2023 15:09	R325693
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.12**	mg/L	1	03/02/2023 12:46	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	5		**105**	mg/L	5	03/07/2023 15:09	R325696
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**146**	mg/L	1	03/03/2023 16:32	203466
Magnesium	NELAP	0.050		**48.8**	mg/L	1	03/03/2023 16:32	203466
Potassium	NELAP	0.100		**2.85**	mg/L	1	03/03/2023 16:32	203466
Sodium	NELAP	0.050		**48.7**	mg/L	1	03/03/2023 16:32	203466
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**65.8**	µg/L	5	03/06/2023 10:27	203466

Teklab, Inc. Environmental Laboratory

Laboratory Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-003 **Client Sample ID:** 08

Matrix: GROUNDWATER **Collection Date:** 03/01/2023 15:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**54.20**	ft	1	03/01/2023 15:01	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.67**		1	03/01/2023 15:01	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	03/01/2023 15:01	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**161**	mV	1	03/01/2023 15:01	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**2438**	µS/cm	1	03/01/2023 15:01	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**13.1**	°C	1	03/01/2023 15:01	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.52**	mg/L	1	03/01/2023 15:01	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**518**	mg/L	1	03/03/2023 14:59	R325591
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/03/2023 14:59	R325591
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**1020**	mg/L	1	03/02/2023 11:23	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**129**	mg/L	5	03/07/2023 15:14	R325693
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.10**	mg/L	1	03/02/2023 12:49	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	20		**227**	mg/L	20	03/08/2023 11:02	R325771
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**176**	mg/L	1	03/03/2023 16:51	203466
Magnesium	NELAP	0.050		**44.5**	mg/L	1	03/03/2023 16:51	203466
Potassium	NELAP	0.100		**7.66**	mg/L	1	03/06/2023 13:22	203466
Sodium	NELAP	0.050		**186**	mg/L	1	03/03/2023 16:51	203466
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**118**	µg/L	5	03/16/2023 15:23	203466

Teklab, Inc. Environmental Laboratory

Laboratory Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-007 **Client Sample ID:** 16

Matrix: GROUNDWATER **Collection Date:** 02/28/2023 15:57

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**54.86**	ft	1	02/28/2023 15:57	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**7.25**		1	02/28/2023 15:57	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	02/28/2023 15:57	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**57.7**	mV	1	02/28/2023 15:57	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**1255**	µS/cm	1	02/28/2023 15:57	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**17.8**	°C	1	02/28/2023 15:57	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.26**	mg/L	1	02/28/2023 15:57	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**285**	mg/L	1	03/03/2023 15:13	R325591
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/03/2023 15:13	R325591
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**508**	mg/L	1	03/02/2023 11:25	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**78**	mg/L	5	03/07/2023 16:21	R325693
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.24**	mg/L	1	03/02/2023 12:56	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	5		**92**	mg/L	5	03/07/2023 16:21	R325696
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100	S	**99.4**	mg/L	1	03/03/2023 17:02	203466
Magnesium	NELAP	0.050		**33.4**	mg/L	1	03/03/2023 17:02	203466
Potassium	NELAP	0.100		**4.80**	mg/L	1	03/06/2023 13:33	203466
Sodium	NELAP	0.050		**57.3**	mg/L	1	03/03/2023 17:02	203466
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**207**	µg/L	5	03/06/2023 12:03	203466

Teklab, Inc. Environmental Laboratory

Laboratory Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-008 **Client Sample ID:** 17

Matrix: GROUNDWATER **Collection Date:** 02/28/2023 16:14

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**59.08**	ft	1	02/28/2023 16:14	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**7.01**		1	02/28/2023 16:14	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	02/28/2023 16:14	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**118**	mV	1	02/28/2023 16:14	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**1505**	µS/cm	1	02/28/2023 16:14	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**14.6**	°C	1	02/28/2023 16:14	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**2.22**	mg/L	1	02/28/2023 16:14	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**387**	mg/L	1	03/03/2023 15:20	R325591
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/03/2023 15:20	R325591
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**630**	mg/L	1	03/02/2023 11:25	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**77**	mg/L	5	03/07/2023 16:42	R325693
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.13**	mg/L	1	03/02/2023 12:58	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	5		**108**	mg/L	5	03/07/2023 16:42	R325696
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**133**	mg/L	1	03/03/2023 17:13	203466
Magnesium	NELAP	0.050		**42.6**	mg/L	1	03/03/2023 17:13	203466
Potassium	NELAP	0.100		**3.85**	mg/L	1	03/06/2023 13:44	203466
Sodium	NELAP	0.050		**56.5**	mg/L	1	03/03/2023 17:13	203466
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**106**	µg/L	5	03/06/2023 11:37	203466

Teklab, Inc. Environmental Laboratory

Laboratory Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-023 **Client Sample ID:** 48

Matrix: GROUNDWATER **Collection Date:** 03/01/2023 12:14

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**40.24**	ft	1	03/01/2023 12:14	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**7.49**		1	03/01/2023 12:14	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**3.73**	NTU	1	03/01/2023 12:14	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**163.8**	mV	1	03/01/2023 12:14	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**1107**	µS/cm	1	03/01/2023 12:14	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**16.8**	°C	1	03/01/2023 12:14	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.33**	mg/L	1	03/01/2023 12:14	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**222**	mg/L	1	03/03/2023 15:52	R325591
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/03/2023 15:52	R325591
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**476**	mg/L	1	03/02/2023 12:10	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**86**	mg/L	5	03/07/2023 18:06	R325693
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.18**	mg/L	1	03/02/2023 13:22	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	5		**104**	mg/L	5	03/07/2023 18:07	R325696
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100	S	**87.6**	mg/L	1	03/03/2023 18:02	203466
Magnesium	NELAP	0.050		**29.4**	mg/L	1	03/03/2023 18:02	203466
Potassium	NELAP	0.100		**5.86**	mg/L	1	03/06/2023 16:18	203466
Sodium	NELAP	0.050		**51.5**	mg/L	1	03/03/2023 18:02	203466
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**1410**	µg/L	5	03/08/2023 12:20	203617

Laboratory Results

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Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-031 **Client Sample ID:** 05DR

Matrix: GROUNDWATER **Collection Date:** 03/01/2023 12:37

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**41.20**	ft	1	03/01/2023 12:37	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**7.34**		1	03/01/2023 12:37	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	03/01/2023 12:37	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**175.9**	mV	1	03/01/2023 12:37	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**1117**	µS/cm	1	03/01/2023 12:37	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**16.0**	°C	1	03/01/2023 12:37	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**1.79**	mg/L	1	03/01/2023 12:37	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**233**	mg/L	1	03/06/2023 11:01	R325659
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/06/2023 11:01	R325659
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**488**	mg/L	1	03/02/2023 12:56	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**82**	mg/L	5	03/08/2023 11:12	R325765
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.15**	mg/L	1	03/02/2023 13:44	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	5		**92**	mg/L	5	03/08/2023 11:12	R325771
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**93.0**	mg/L	1	03/03/2023 19:16	203468
Magnesium	NELAP	0.050		**31.2**	mg/L	1	03/03/2023 19:16	203468
Potassium	NELAP	0.100		**6.72**	mg/L	1	03/06/2023 16:48	203468
Sodium	NELAP	0.050		**49.5**	mg/L	1	03/03/2023 19:16	203468
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**805**	µg/L	5	03/06/2023 14:56	203468

Teklab, Inc. Environmental Laboratory

Laboratory Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-032 **Client Sample ID:** 05R

Matrix: GROUNDWATER **Collection Date:** 03/01/2023 12:26

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**41.26**	ft	1	03/01/2023 12:26	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**7.51**		1	03/01/2023 12:26	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**1.93**	NTU	1	03/01/2023 12:26	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**161.6**	mV	1	03/01/2023 12:26	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**1110**	µS/cm	1	03/01/2023 12:26	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**16.6**	°C	1	03/01/2023 12:26	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.32**	mg/L	1	03/01/2023 12:26	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**241**	mg/L	1	03/06/2023 11:07	R325659
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/06/2023 11:07	R325659
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**500**	mg/L	1	03/02/2023 12:56	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**80**	mg/L	5	03/08/2023 11:14	R325765
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.13**	mg/L	1	03/02/2023 13:46	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	5		**88**	mg/L	5	03/08/2023 11:15	R325771
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100	S	**89.9**	mg/L	1	03/03/2023 19:19	203468
Magnesium	NELAP	0.050	S	**31.3**	mg/L	1	03/03/2023 19:19	203468
Potassium	NELAP	0.500		**8.78**	mg/L	5	03/06/2023 17:25	203468
Sodium	NELAP	0.050	S	**45.9**	mg/L	1	03/03/2023 19:19	203468
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**854**	µg/L	5	03/22/2023 3:49	204109

Laboratory Results

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Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-033 **Client Sample ID:** 08D

Matrix: GROUNDWATER **Collection Date:** 03/01/2023 14:42

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**54.27**	ft	1	03/01/2023 14:42	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.48**		1	03/01/2023 14:42	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	03/01/2023 14:42	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**158.6**	mV	1	03/01/2023 14:42	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**3178**	µS/cm	1	03/01/2023 14:42	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**13.3**	°C	1	03/01/2023 14:42	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.32**	mg/L	1	03/01/2023 14:42	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**547**	mg/L	1	03/06/2023 11:25	R325659
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/06/2023 11:25	R325659
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**1440**	mg/L	1	03/02/2023 12:57	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**279**	mg/L	10	03/08/2023 11:20	R325765
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.10**	mg/L	1	03/02/2023 13:48	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	10		**319**	mg/L	10	03/08/2023 11:20	R325771
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**255**	mg/L	1	03/03/2023 19:31	203468
Magnesium	NELAP	0.050		**70.1**	mg/L	1	03/03/2023 19:31	203468
Potassium	NELAP	0.100		**4.16**	mg/L	1	03/06/2023 17:55	203468
Sodium	NELAP	0.050		**238**	mg/L	1	03/03/2023 19:31	203468
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**94.2**	µg/L	5	03/06/2023 15:02	203468

Teklab, Inc. Environmental Laboratory

Laboratory Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-038 **Client Sample ID:** 40S

Matrix: GROUNDWATER **Collection Date:** 03/01/2023 12:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**40.55**	ft	1	03/01/2023 12:00	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**7.69**		1	03/01/2023 12:00	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**0.43**	NTU	1	03/01/2023 12:00	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**157.1**	mV	1	03/01/2023 12:00	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**1044**	µS/cm	1	03/01/2023 12:00	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**16.3**	°C	1	03/01/2023 12:00	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.33**	mg/L	1	03/01/2023 12:00	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**189**	mg/L	1	03/03/2023 17:02	R325591
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/03/2023 17:02	R325591
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**474**	mg/L	1	03/02/2023 13:37	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**95**	mg/L	5	03/08/2023 12:35	R325765
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.16**	mg/L	1	03/02/2023 14:07	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	5		**99**	mg/L	5	03/08/2023 12:35	R325771
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**75.5**	mg/L	1	03/03/2023 20:04	203468
Magnesium	NELAP	0.050		**31.0**	mg/L	1	03/03/2023 20:04	203468
Potassium	NELAP	0.100		**7.32**	mg/L	1	03/06/2023 18:10	203468
Sodium	NELAP	0.050		**48.5**	mg/L	1	03/03/2023 20:04	203468
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**1210**	µg/L	5	03/06/2023 16:38	203468

Laboratory Results

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http://www.teklabinc.com/

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-040 **Client Sample ID:** SG02

Matrix: GROUNDWATER **Collection Date:** 03/02/2023 7:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**449.50**	ft	1	03/02/2023 7:30	R325999

Teklab, Inc. Environmental Laboratory

Laboratory Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-050 **Client Sample ID:** 08 Duplicate

Matrix: GROUNDWATER **Collection Date:** 03/01/2023 15:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**54.20**	ft	1	03/01/2023 15:01	R325999
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.67**		1	03/01/2023 15:01	R325999
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	03/01/2023 15:01	R325999
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**161**	mV	1	03/01/2023 15:01	R325999
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**2438**	µS/cm	1	03/01/2023 15:01	R325999
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**13.1**	°C	1	03/01/2023 15:01	R325999
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.52**	mg/L	1	03/01/2023 15:01	R325999
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**518**	mg/L	1	03/06/2023 11:59	R325659
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/06/2023 11:59	R325659
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**1080**	mg/L	1	03/02/2023 14:09	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**136**	mg/L	5	03/08/2023 13:09	R325765
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10	J	**0.10**	mg/L	1	03/02/2023 14:26	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	10		**222**	mg/L	10	03/08/2023 13:28	R325771
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**177**	mg/L	1	03/03/2023 20:30	203468
Magnesium	NELAP	0.050		**43.9**	mg/L	1	03/03/2023 20:30	203468
Potassium	NELAP	0.100		**7.85**	mg/L	1	03/06/2023 18:17	203468
Sodium	NELAP	0.050		**186**	mg/L	1	03/03/2023 20:30	203468
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**107**	µg/L	5	03/06/2023 16:51	203468

Laboratory Results

Teklab, Inc.
Environmental Laboratory
http://www.teklabinc.com/

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Lab ID: 23020845-051 **Client Sample ID:** Field Blank

Matrix: AQUEOUS **Collection Date:** 03/01/2023 17:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**1**	mg/L	1	03/07/2023 8:46	R325659
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/07/2023 8:46	R325659
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**< 20**	mg/L	1	03/02/2023 14:09	R325574
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	03/08/2023 13:33	R325765
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**< 0.10**	mg/L	1	03/02/2023 14:29	R325510
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**< 1**	mg/L	1	03/08/2023 13:33	R325771
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**< 0.100**	mg/L	1	03/03/2023 20:34	203468
Magnesium	NELAP	0.050		**< 0.050**	mg/L	1	03/03/2023 20:34	203468
Potassium	NELAP	0.100		**< 0.100**	mg/L	1	03/06/2023 18:21	203468
Sodium	NELAP	0.050		**< 0.050**	mg/L	1	03/03/2023 20:34	203468
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		**< 25.0**	µg/L	5	03/07/2023 9:57	203468

Teklab, Inc.
Environmental Laboratory

Sample Summary

Client: Ramboll
Client Project: HEN-23Q1

Work Order: 23020845
Report Date: 14-Apr-23

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
23020845-002	07	Groundwater	7	03/01/2023 16:16
23020845-003	08	Groundwater	9	03/01/2023 15:01
23020845-007	16	Groundwater	5	02/28/2023 15:57
23020845-008	17	Groundwater	5	02/28/2023 16:14
23020845-023	48	Groundwater	2	03/01/2023 12:14
23020845-031	05DR	Groundwater	7	03/01/2023 12:37
23020845-032	05R	Groundwater	7	03/01/2023 12:26
23020845-033	08D	Groundwater	9	03/01/2023 14:42
23020845-038	40S	Groundwater	7	03/01/2023 12:00
23020845-040	SG02	Groundwater	1	03/02/2023 7:30
23020845-050	08 Duplicate	Groundwater	9	03/01/2023 15:01
23020845-051	Field Blank	Aqueous	9	03/01/2023 17:01

Teklab, Inc.
Environmental Laboratory

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
23020845-002A	07	03/01/2023 16:16	03/02/2023 8:00		
	Field Elevation Measurements				03/01/2023 16:16
	Standard Method 4500-H B 2001 Field				03/01/2023 16:16
	Standard Methods 2130 B Field				03/01/2023 16:16
	Standard Methods 18th Ed. 2580 B Field				03/01/2023 16:16
	Standard Methods 2320 B (Total) 1997, 2011				03/03/2023 14:45
	Standard Methods 2320 B 1997, 2011				03/03/2023 14:45
	Standard Methods 2510 B Field				03/01/2023 16:16
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 11:20
	Standard Methods 2550 B Field				03/01/2023 16:16
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:13
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 13:51
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 13:51
	Standard Methods 4500-O G Field				03/01/2023 16:16
	SW-846 9036 (Total)				03/07/2023 15:09
	SW-846 9214 (Total)				03/02/2023 12:46
	SW-846 9251 (Total)				03/07/2023 15:09
23020845-002B	07	03/01/2023 16:16	03/02/2023 8:00		
	EPA 314.0				03/09/2023 0:00
23020845-002C	07	03/01/2023 16:16	03/02/2023 8:00		
	SW-846 9036 (Dissolved)				03/06/2023 9:07
	SW-846 9214 (Dissolved)				03/02/2023 12:15
	SW-846 9251 (Dissolved)				03/06/2023 9:07
23020845-002D	07	03/01/2023 16:16	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:03	03/03/2023 16:32
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:03	03/03/2023 13:51
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:03	03/06/2023 10:27
	SW-846 7470A (Total)			03/02/2023 9:08	03/06/2023 19:54
23020845-002E	07	03/01/2023 16:16	03/02/2023 8:00		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/02/2023 17:39
	SW-846 7470A (Dissolved)			03/02/2023 9:08	03/06/2023 20:05
23020845-002F	07	03/01/2023 16:16	03/02/2023 8:00		
	SW-846 9012A (Total)			03/02/2023 14:59	03/03/2023 17:37
23020845-002G	07	03/01/2023 16:16	03/02/2023 8:00		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/02/2023 11:25
23020845-003A	08	03/01/2023 15:01	03/02/2023 8:00		
	Field Elevation Measurements				03/01/2023 15:01

Teklab, Inc.
Environmental Laboratory

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	Standard Method 4500-H B 2001 Field				03/01/2023 15:01
	Standard Methods 2130 B Field				03/01/2023 15:01
	Standard Methods 2320 B 1997, 2011				03/03/2023 14:59
	Standard Methods 18th Ed. 2580 B Field				03/01/2023 15:01
	Standard Methods 2320 B (Total) 1997, 2011				03/03/2023 14:59
	Standard Methods 2320 B 1997, 2011				03/03/2023 14:59
	Standard Methods 2510 B Field				03/01/2023 15:01
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 11:23
	Standard Methods 2550 B Field				03/01/2023 15:01
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:15
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 13:53
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 13:53
	Standard Methods 4500-O G Field				03/01/2023 15:01
	SW-846 9036 (Total)				03/07/2023 15:14
	SW-846 9214 (Total)				03/02/2023 12:49
	SW-846 9251 (Total)				03/08/2023 11:02
23020845-003B	08	03/01/2023 15:01	03/02/2023 8:00		
	EPA 314.0				03/09/2023 0:00
23020845-003C	08	03/01/2023 15:01	03/02/2023 8:00		
	Standard Methods 2550 B Field				03/01/2023 15:01
	SW-846 9036 (Dissolved)				03/06/2023 9:44
	SW-846 9214 (Dissolved)				03/02/2023 12:17
	SW-846 9251 (Dissolved)				03/06/2023 9:50
23020845-003D	08	03/01/2023 15:01	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:03	03/03/2023 16:51
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:03	03/06/2023 13:22
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:03	03/03/2023 14:23
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:03	03/06/2023 11:18
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:03	03/16/2023 15:23
	SW-846 7470A (Total)			03/02/2023 9:08	03/06/2023 20:08
23020845-003E	08	03/01/2023 15:01	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/02/2023 9:16	03/09/2023 9:02
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/02/2023 17:45
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/03/2023 16:11
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/16/2023 15:27
	SW-846 7470A (Dissolved)			03/02/2023 9:08	03/06/2023 20:10
23020845-003F	08	03/01/2023 15:01	03/02/2023 8:00		

Teklab, Inc. Environmental Laboratory

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9012A (Total)			03/02/2023 14:59	03/03/2023 18:03
23020845-003G	08	03/01/2023 15:01	03/02/2023 8:00		
	SW-846 9066 (Total)				03/06/2023 15:45
23020845-003H	08	03/01/2023 15:01	03/02/2023 8:00		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/03/2023 17:13
23020845-003I	08	03/01/2023 15:01	03/02/2023 8:00		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/02/2023 11:50
23020845-007A	16	02/28/2023 15:57	03/02/2023 8:00		
	Field Elevation Measurements				02/28/2023 15:57
	Standard Method 4500-H B 2001 Field				02/28/2023 15:57
	Standard Methods 2130 B Field				02/28/2023 15:57
	Standard Methods 18th Ed. 2580 B Field				02/28/2023 15:57
	Standard Methods 2320 B (Total) 1997, 2011				03/03/2023 15:13
	Standard Methods 2320 B 1997, 2011				03/03/2023 15:13
	Standard Methods 2510 B Field				02/28/2023 15:57
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 11:25
	Standard Methods 2550 B Field				02/28/2023 15:57
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:10
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:01
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:01
	Standard Methods 4500-O G Field				02/28/2023 15:57
	SW-846 9036 (Total)				03/07/2023 16:21
	SW-846 9214 (Total)				03/02/2023 12:56
	SW-846 9251 (Total)				03/07/2023 16:21
23020845-007B	16	02/28/2023 15:57	03/02/2023 8:00		
	SW-846 9036 (Dissolved)				03/06/2023 10:35
	SW-846 9214 (Dissolved)				03/02/2023 12:24
	SW-846 9251 (Dissolved)				03/06/2023 10:35
23020845-007C	16	02/28/2023 15:57	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:03	03/03/2023 17:02
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:03	03/06/2023 13:33
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:03	03/03/2023 15:06
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:03	03/06/2023 12:03
	SW-846 7470A (Total)			03/02/2023 9:08	03/06/2023 20:28
23020845-007D	16	02/28/2023 15:57	03/02/2023 8:00		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/02/2023 18:49
	SW-846 7470A (Dissolved)			03/02/2023 9:08	03/06/2023 20:31

Teklab, Inc.
Environmental Laboratory

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID / Test Name	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
23020845-007E	16	02/28/2023 15:57	03/02/2023 8:00		
	SW-846 9012A (Total)			03/02/2023 14:59	03/03/2023 16:58
23020845-008A	17	02/28/2023 16:14	03/02/2023 8:00		
	Field Elevation Measurements				02/28/2023 16:14
	Standard Method 4500-H B 2001 Field				02/28/2023 16:14
	Standard Methods 2130 B Field				02/28/2023 16:14
	Standard Methods 18th Ed. 2580 B Field				02/28/2023 16:14
	Standard Methods 2320 B (Total) 1997, 2011				03/03/2023 15:20
	Standard Methods 2320 B 1997, 2011				03/03/2023 15:20
	Standard Methods 2510 B Field				02/28/2023 16:14
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 11:25
	Standard Methods 2550 B Field				02/28/2023 16:14
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:12
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:07
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:07
	Standard Methods 4500-O G Field				02/28/2023 16:14
	SW-846 9036 (Total)				03/07/2023 16:42
	SW-846 9214 (Total)				03/02/2023 12:58
	SW-846 9251 (Total)				03/07/2023 16:42
23020845-008B	17	02/28/2023 16:14	03/02/2023 8:00		
	SW-846 9036 (Dissolved)				03/06/2023 10:43
	SW-846 9214 (Dissolved)				03/02/2023 12:26
	SW-846 9251 (Dissolved)				03/06/2023 10:43
23020845-008C	17	02/28/2023 16:14	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:03	03/03/2023 17:13
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:03	03/06/2023 13:44
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:03	03/03/2023 14:41
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:03	03/06/2023 11:37
	SW-846 7470A (Total)			03/02/2023 9:08	03/06/2023 20:33
23020845-008D	17	02/28/2023 16:14	03/02/2023 8:00		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/02/2023 18:55
	SW-846 7470A (Dissolved)			03/02/2023 9:08	03/06/2023 20:35
23020845-008E	17	02/28/2023 16:14	03/02/2023 8:00		
	SW-846 9012A (Total)			03/02/2023 14:59	03/03/2023 18:20
23020845-023A	48	03/01/2023 12:14	03/02/2023 8:00		
	Field Elevation Measurements				03/01/2023 12:14
	Standard Method 4500-H B 2001 Field				03/01/2023 12:14

Teklab, Inc.
Environmental Laboratory

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	Standard Methods 2130 B Field				03/01/2023 12:14
	Standard Methods 18th Ed. 2580 B Field				03/01/2023 12:14
	Standard Methods 2320 B (Total) 1997, 2011				03/03/2023 15:52
	Standard Methods 2320 B 1997, 2011				03/03/2023 15:52
	Standard Methods 2510 B Field				03/01/2023 12:14
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 12:10
	Standard Methods 2550 B Field				03/01/2023 12:14
	Standard Methods 4500-O G Field				03/01/2023 12:14
	SW-846 9036 (Total)				03/07/2023 18:06
	SW-846 9214 (Total)				03/02/2023 13:22
	SW-846 9251 (Total)				03/07/2023 18:07
23020845-023B	48	03/01/2023 12:14	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:03	03/03/2023 18:02
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:03	03/06/2023 16:18
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/07/2023 9:33	03/08/2023 12:20
23020845-031A	05DR	03/01/2023 12:37	03/02/2023 8:00		
	Field Elevation Measurements				03/01/2023 12:37
	Standard Method 4500-H B 2001 Field				03/01/2023 12:37
	Standard Methods 2130 B Field				03/01/2023 12:37
	Standard Methods 2320 B 1997, 2011				03/06/2023 11:01
	Standard Methods 18th Ed. 2580 B Field				03/01/2023 12:37
	Standard Methods 2320 B (Total) 1997, 2011				03/06/2023 11:01
	Standard Methods 2320 B 1997, 2011				03/06/2023 11:01
	Standard Methods 2510 B Field				03/01/2023 12:37
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 12:56
	Standard Methods 2550 B Field				03/01/2023 12:37
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:20
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:14
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:14
	Standard Methods 4500-O G Field				03/01/2023 12:37
	SW-846 9036 (Total)				03/08/2023 11:12
	SW-846 9214 (Total)				03/02/2023 13:44
	SW-846 9251 (Total)				03/08/2023 11:12
23020845-031B	05DR	03/01/2023 12:37	03/02/2023 8:00		
	Standard Methods 2550 B Field				03/01/2023 12:37
	SW-846 9036 (Dissolved)				03/06/2023 11:28
	SW-846 9214 (Dissolved)				03/02/2023 11:28
	SW-846 9251 (Dissolved)				03/06/2023 11:29

Teklab, Inc.
Environmental Laboratory

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23020845-031C	05DR	03/01/2023 12:37	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/03/2023 19:16
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/06/2023 16:48
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:06	03/06/2023 14:56
23020845-031D	05DR	03/01/2023 12:37	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/02/2023 9:16	03/09/2023 9:26
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/02/2023 20:25
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/03/2023 16:30
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/20/2023 21:00	03/22/2023 6:53
	SW-846 7470A (Dissolved)			03/02/2023 9:11	03/07/2023 5:23
23020845-031E	05DR	03/01/2023 12:37	03/02/2023 8:00		
	SW-846 9012A (Total)			03/02/2023 14:59	03/03/2023 18:29
23020845-031F	05DR	03/01/2023 12:37	03/02/2023 8:00		
	SW-846 9066 (Total)				03/06/2023 16:07
23020845-031G	05DR	03/01/2023 12:37	03/02/2023 8:00		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/03/2023 12:29
23020845-032A	05R	03/01/2023 12:26	03/02/2023 8:00		
	Field Elevation Measurements				03/01/2023 12:26
	Standard Method 4500-H B 2001 Field				03/01/2023 12:26
	Standard Methods 2130 B Field				03/01/2023 12:26
	Standard Methods 2320 B 1997, 2011				03/06/2023 11:07
	Standard Methods 18th Ed. 2580 B Field				03/01/2023 12:26
	Standard Methods 2320 B (Total) 1997, 2011				03/06/2023 11:07
	Standard Methods 2320 B 1997, 2011				03/06/2023 11:07
	Standard Methods 2510 B Field				03/01/2023 12:26
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 12:56
	Standard Methods 2550 B Field				03/01/2023 12:26
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:21
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:21
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:21
	Standard Methods 4500-O G Field				03/01/2023 12:26
	SW-846 9036 (Total)				03/08/2023 11:14
	SW-846 9214 (Total)				03/02/2023 13:46
	SW-846 9251 (Total)				03/08/2023 11:15
23020845-032B	05R	03/01/2023 12:26	03/02/2023 8:00		
	Standard Methods 2550 B Field				03/01/2023 12:26
	SW-846 9036 (Dissolved)				03/06/2023 11:36

Teklab, Inc. Environmental Laboratory

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9214 (Dissolved)				03/02/2023 11:30
	SW-846 9251 (Dissolved)				03/06/2023 11:37
23020845-032C	05R	03/01/2023 12:26	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/03/2023 19:19
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/06/2023 17:25
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/20/2023 19:16	03/22/2023 3:49
23020845-032D	05R	03/01/2023 12:26	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/02/2023 9:16	03/09/2023 9:28
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/02/2023 20:31
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:16	03/03/2023 16:36
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/20/2023 21:00	03/22/2023 6:59
	SW-846 7470A (Dissolved)			03/02/2023 9:11	03/07/2023 5:26
23020845-032E	05R	03/01/2023 12:26	03/02/2023 8:00		
	SW-846 9012A (Total)			03/03/2023 16:10	03/06/2023 13:40
23020845-032F	05R	03/01/2023 12:26	03/02/2023 8:00		
	SW-846 9066 (Total)				03/06/2023 16:11
23020845-032G	05R	03/01/2023 12:26	03/02/2023 8:00		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/03/2023 12:32
23020845-033A	08D	03/01/2023 14:42	03/02/2023 8:00		
	Field Elevation Measurements				03/01/2023 14:42
	Standard Method 4500-H B 2001 Field				03/01/2023 14:42
	Standard Methods 2130 B Field				03/01/2023 14:42
	Standard Methods 2320 B 1997, 2011				03/06/2023 11:25
	Standard Methods 18th Ed. 2580 B Field				03/01/2023 14:42
	Standard Methods 2320 B (Total) 1997, 2011				03/06/2023 11:25
	Standard Methods 2320 B 1997, 2011				03/06/2023 11:25
	Standard Methods 2510 B Field				03/01/2023 14:42
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 12:57
	Standard Methods 2550 B Field				03/01/2023 14:42
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:21
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:40
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 12:40
	Standard Methods 4500-O G Field				03/01/2023 14:42
	SW-846 9036 (Total)				03/08/2023 11:20
	SW-846 9214 (Total)				03/02/2023 13:48
	SW-846 9251 (Total)				03/08/2023 11:20
23020845-033B	08D	03/01/2023 14:42	03/02/2023 8:00		

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
	EPA 314.0				03/09/2023 0:00
23020845-033C	08D	03/01/2023 14:42	03/02/2023 8:00		
	Standard Methods 2550 B Field				03/01/2023 14:42
	SW-846 9036 (Dissolved)				03/06/2023 11:39
	SW-846 9214 (Dissolved)				03/02/2023 11:31
	SW-846 9251 (Dissolved)				03/06/2023 11:39
23020845-033D	08D	03/01/2023 14:42	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/03/2023 19:31
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/06/2023 17:55
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:06	03/03/2023 11:46
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:06	03/06/2023 15:02
	SW-846 7470A (Total)			03/02/2023 9:11	03/07/2023 5:28
23020845-033E	08D	03/01/2023 14:42	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/02/2023 9:19	03/03/2023 14:37
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:19	03/02/2023 20:38
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:19	03/03/2023 18:00
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/20/2023 21:00	03/22/2023 7:05
	SW-846 7470A (Dissolved)			03/02/2023 9:11	03/07/2023 5:30
23020845-033F	08D	03/01/2023 14:42	03/02/2023 8:00		
	SW-846 9012A (Total)			03/03/2023 16:10	03/06/2023 13:44
23020845-033G	08D	03/01/2023 14:42	03/02/2023 8:00		
	SW-846 9066 (Total)				03/06/2023 16:15
23020845-033H	08D	03/01/2023 14:42	03/02/2023 8:00		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/03/2023 12:34
23020845-033I	08D	03/01/2023 14:42	03/02/2023 8:00		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/02/2023 13:02
23020845-038A	40S	03/01/2023 12:00	03/02/2023 8:00		
	Field Elevation Measurements				03/01/2023 12:00
	Standard Method 4500-H B 2001 Field				03/01/2023 12:00
	Standard Methods 2130 B Field				03/01/2023 12:00
	Standard Methods 2320 B 1997, 2011				03/03/2023 17:02
	Standard Methods 18th Ed. 2580 B Field				03/01/2023 12:00
	Standard Methods 2320 B (Total) 1997, 2011				03/03/2023 17:02
	Standard Methods 2320 B 1997, 2011				03/03/2023 17:02
	Standard Methods 2510 B Field				03/01/2023 12:00
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 13:37
	Standard Methods 2550 B Field				03/01/2023 12:00

Teklab, Inc.
Environmental Laboratory

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:24
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 13:00
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 13:00
	Standard Methods 4500-O G Field				03/01/2023 12:00
	SW-846 9036 (Total)				03/08/2023 12:35
	SW-846 9214 (Total)				03/02/2023 14:07
	SW-846 9251 (Total)				03/08/2023 12:35
23020845-038B	40S	03/01/2023 12:00	03/02/2023 8:00		
	Standard Methods 2550 B Field				03/01/2023 12:00
	SW-846 9036 (Dissolved)				03/06/2023 12:40
	SW-846 9214 (Dissolved)				03/02/2023 11:37
	SW-846 9251 (Dissolved)				03/06/2023 12:41
23020845-038C	40S	03/01/2023 12:00	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/03/2023 20:04
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/06/2023 18:10
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:06	03/06/2023 16:38
23020845-038D	40S	03/01/2023 12:00	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/02/2023 9:19	03/03/2023 14:40
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:19	03/02/2023 21:48
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:19	03/03/2023 17:40
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/20/2023 21:00	03/22/2023 7:29
	SW-846 7470A (Dissolved)			03/02/2023 9:11	03/07/2023 5:55
23020845-038E	40S	03/01/2023 12:00	03/02/2023 8:00		
	SW-846 9012A (Total)			03/03/2023 16:10	03/06/2023 13:53
23020845-038F	40S	03/01/2023 12:00	03/02/2023 8:00		
	SW-846 9066 (Total)				03/06/2023 16:25
23020845-038G	40S	03/01/2023 12:00	03/02/2023 8:00		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/03/2023 12:51
23020845-040A	SG02	03/02/2023 7:30	03/02/2023 8:00		
	Field Elevation Measurements				03/02/2023 7:30
23020845-050A	08 Duplicate	03/01/2023 15:01	03/02/2023 8:00		
	Field Elevation Measurements				03/01/2023 15:01
	Standard Method 4500-H B 2001 Field				03/01/2023 15:01
	Standard Methods 2130 B Field				03/01/2023 15:01
	Standard Methods 2320 B 1997, 2011				03/06/2023 11:59
	Standard Methods 18th Ed. 2580 B Field				03/01/2023 15:01
	Standard Methods 2320 B (Total) 1997, 2011				03/06/2023 11:59

Teklab, Inc.
Environmental Laboratory

Dates Report

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	Standard Methods 2320 B 1997, 2011				03/06/2023 11:59
	Standard Methods 2510 B Field				03/01/2023 15:01
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 14:09
	Standard Methods 2550 B Field				03/01/2023 15:01
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:28
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 15:19
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 15:19
	Standard Methods 4500-O G Field				03/01/2023 15:01
	SW-846 9036 (Total)				03/08/2023 13:09
	SW-846 9214 (Total)				03/02/2023 14:26
	SW-846 9251 (Total)				03/08/2023 13:28
23020845-050B	08 Duplicate	03/01/2023 15:01	03/02/2023 8:00		
	EPA 314.0				03/09/2023 0:00
23020845-050C	08 Duplicate	03/01/2023 15:01	03/02/2023 8:00		
	Standard Methods 2550 B Field				03/01/2023 15:01
	SW-846 9036 (Dissolved)				03/06/2023 13:44
	SW-846 9214 (Dissolved)				03/02/2023 11:56
	SW-846 9251 (Dissolved)				03/06/2023 13:45
23020845-050D	08 Duplicate	03/01/2023 15:01	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/03/2023 20:30
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/06/2023 18:17
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:06	03/03/2023 13:39
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:06	03/06/2023 16:51
	SW-846 7470A (Total)			03/02/2023 9:14	03/06/2023 19:22
23020845-050E	08 Duplicate	03/01/2023 15:01	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/02/2023 9:19	03/03/2023 14:44
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:19	03/02/2023 23:17
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:19	03/03/2023 19:10
	SW-846 7470A (Dissolved)			03/02/2023 9:14	03/06/2023 19:24
23020845-050F	08 Duplicate	03/01/2023 15:01	03/02/2023 8:00		
	SW-846 9012A (Total)			03/03/2023 16:10	03/06/2023 14:45
23020845-050G	08 Duplicate	03/01/2023 15:01	03/02/2023 8:00		
	SW-846 9066 (Total)				03/06/2023 16:28
23020845-050H	08 Duplicate	03/01/2023 15:01	03/02/2023 8:00		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/03/2023 17:33
23020845-050I	08 Duplicate	03/01/2023 15:01	03/02/2023 8:00		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/02/2023 14:41

Teklab, Inc.
Environmental Laboratory

Dates Report

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
23020845-051A	Field Blank	03/01/2023 17:01	03/02/2023 8:00		
	Standard Methods 2320 B 1997, 2011				03/07/2023 8:46
	Standard Methods 2320 B (Total) 1997, 2011				03/07/2023 8:46
	Standard Methods 2320 B 1997, 2011				03/07/2023 8:46
	Standard Methods 2540 C (Total) 1997, 2011				03/02/2023 14:09
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/02/2023 15:28
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 15:23
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/02/2023 15:23
	SW-846 9036 (Total)				03/08/2023 13:33
	SW-846 9214 (Total)				03/02/2023 14:29
	SW-846 9251 (Total)				03/08/2023 13:33
23020845-051B	Field Blank	03/01/2023 17:01	03/02/2023 8:00		
	EPA 314.0				03/09/2023 0:00
23020845-051C	Field Blank	03/01/2023 17:01	03/02/2023 8:00		
	SW-846 9036 (Dissolved)				03/06/2023 13:56
	SW-846 9214 (Dissolved)				03/02/2023 11:58
	SW-846 9251 (Dissolved)				03/06/2023 13:55
23020845-051D	Field Blank	03/01/2023 17:01	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/03/2023 20:34
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/02/2023 9:06	03/06/2023 18:21
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:06	03/03/2023 13:45
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:06	03/06/2023 18:08
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/02/2023 9:06	03/07/2023 9:57
	SW-846 7470A (Total)			03/02/2023 9:14	03/06/2023 19:27
23020845-051E	Field Blank	03/01/2023 17:01	03/02/2023 8:00		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/02/2023 9:19	03/03/2023 15:23
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:19	03/02/2023 23:24
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/02/2023 9:19	03/03/2023 20:14
	SW-846 7470A (Dissolved)			03/02/2023 9:14	03/06/2023 19:38
23020845-051F	Field Blank	03/01/2023 17:01	03/02/2023 8:00		
	SW-846 9012A (Total)			03/03/2023 16:10	03/06/2023 14:50
23020845-051G	Field Blank	03/01/2023 17:01	03/02/2023 8:00		
	SW-846 9066 (Total)				03/06/2023 12:09
23020845-051H	Field Blank	03/01/2023 17:01	03/02/2023 8:00		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/03/2023 12:57
23020845-051I	Field Blank	03/01/2023 17:01	03/02/2023 8:00		

Dates Report

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/02/2023 15:05

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

STANDARD METHOD 4500-H B 2001 FIELD

Batch R325999 **SampType:** LCS Units
SampID: LCS-R325999

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH	*	1.00		**7.02**	7.000	0	100.3	98.57	101.4	02/28/2023
pH	*	1.00		**7.09**	7.000	0	101.3	98.57	101.4	03/01/2023

STANDARD METHODS 2510 B FIELD

Batch R325999 **SampType:** LCS Units **µS/cm**
SampID: LCS-R325999

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Spec. Conductance, Field	*	0		**1460**	1409	0	103.6	90	110	03/01/2023
Spec. Conductance, Field	*	0		**1481**	1409	0	105.1	90	110	02/28/2023

STANDARD METHODS 2320 B 1997, 2011

Batch R325591 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Alkalinity, Total (as CaCO3)		0		**0**						03/03/2023

Batch R325591 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Alkalinity, Total (as CaCO3)		0		**243**	236.0	0	103.0	90	110	03/03/2023

Batch R325591 **SampType:** LCSD Units **mg/L** RPD Limit:
SampID: LCSDUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Alkalinity, Total (as CaCO3)		0		**235**	236.0	0	99.6	90	110	03/03/2023

Batch R325659 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Alkalinity, Total (as CaCO3)		0		**0**						03/06/2023

Batch R325659 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Alkalinity, Total (as CaCO3)		0		**237**	236.0	0	100.4	90	110	03/06/2023

Teklab, Inc.
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Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

STANDARD METHODS 2320 B 1997, 2011

Batch R325659 **SampType:** LCSD Units **mg/L** RPD Limit:
SampID: LCSDUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Alkalinity, Total (as CaCO3)		0		**236**	236.0	0	100.0	90	110	03/06/2023
Alkalinity, Total (as CaCO3)		0		**240**	236.0	0	101.7	90	110	03/06/2023

Batch R325659 **SampType:** DUP Units **mg/L** RPD Limit: **10**
SampID: 23020845-005ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Alkalinity, Total (as CaCO3)		0		**249**				243.0	2.44	03/06/2023

Batch R325659 **SampType:** DUP Units **mg/L** RPD Limit: **10**
SampID: 23020845-051ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Alkalinity, Total (as CaCO3)		0		**1**				1.000	0.00	03/07/2023

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R325574 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	03/02/2023
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	03/02/2023
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	03/02/2023

Batch R325574 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**920**	1000	0	92.0	90	110	03/02/2023
Total Dissolved Solids		20		**908**	1000	0	90.8	90	110	03/02/2023
Total Dissolved Solids		20		**910**	1000	0	91.0	90	110	03/02/2023

Batch R325574 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 23020845-005ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**488**				488.0	0.00	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R325574 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 23020845-021ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**492**				496.0	0.81	03/02/2023

Batch R325574 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 23020845-030ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**540**				534.0	1.12	03/02/2023

Batch R325574 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 23020845-041ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**544**				558.0	2.54	03/02/2023

Batch R325574 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 23020845-050ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**1090**				1080	0.74	03/02/2023

STANDARD METHODS 4500-NH3 G (TOTAL) 1997, 2011

Batch R325556 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10		**< 0.10**	0.0270	0	0	-100	100	03/03/2023

Batch R325556 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10		**1.01**	1.000	0	101.3	90	110	03/03/2023

Batch R325556 **SampType:** MS Units **mg/L**
SampID: 23020845-005GMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	**1.70**	2.000	0	85.2	90	110	03/03/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

STANDARD METHODS 4500-NH3 G (TOTAL) 1997, 2011

Batch R325556 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-005GMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	**1.72**	2.000	0	85.8	1.705	0.58	03/03/2023

STANDARD METHODS 4500-NO2 B (TOTAL) 2000, 2011

Batch R325452 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		**< 0.05**	0.0250	0	0	-100	100	03/01/2023

Batch R325452 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.25		**0.65**	0.6510	0	99.8	90	110	03/01/2023

Batch R325452 **SampType:** MS Units **mg/L**
SampID: 23020845-002AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		**0.49**	0.5000	0	97.6	85	115	03/02/2023

Batch R325452 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-002AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		**0.50**	0.5000	0	99.0	0.4880	1.42	03/02/2023

Batch R325452 **SampType:** MS Units **mg/L**
SampID: 23020845-003AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		**0.49**	0.5000	0.006000	96.8	85	115	03/02/2023

Batch R325452 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-003AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		**0.49**	0.5000	0.006000	97.6	0.4900	0.81	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

STANDARD METHODS 4500-NO2 B (TOTAL) 2000, 2011

Batch R325452 **SampType:** MS Units **mg/L**
SampID: 23020845-005AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		**0.49**	0.5000	0	98.8	85	115	03/02/2023

Batch R325452 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-005AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		**0.50**	0.5000	0	99.8	0.4940	1.01	03/02/2023

STANDARD METHODS 4500-NO3 F (TOTAL) 2000, 2011

Batch R325529 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate (as N)		0.050		**< 0.050**						03/02/2023
Nitrogen, Nitrate-Nitrite (as N)		0.050		**< 0.050**	0.0090	0	0	-100	100	03/02/2023

Batch R325529 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.050		**0.522**	0.5000	0	104.4	90	110	03/02/2023

Batch R325529 **SampType:** MS Units **mg/L**
SampID: 23020845-039AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.250		**4.38**	1.250	3.190	95.0	85	115	03/02/2023

Batch R325529 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-039AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.250		**4.41**	1.250	3.190	97.9	4.378	0.82	03/02/2023

Batch R325529 **SampType:** MS Units **mg/L**
SampID: 23020845-049AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.250		**3.01**	1.250	1.734	102.2	85	115	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

STANDARD METHODS 4500-NO3 F (TOTAL) 2000, 2011

Batch R325529 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-049AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.250		**3.02**	1.250	1.734	103.0	3.011	0.36	03/02/2023

SW-846 9012A (TOTAL)

Batch 203485 **SampType:** MBLK Units **mg/L**
SampID: MBLK 230302 TCN1

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		**< 0.005**	0.0015	0	0	-100	100	03/03/2023

Batch 203485 **SampType:** LCS Units **mg/L**
SampID: LCS 230302 TCN1

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		**0.024**	0.0250	0	97.5	90	110	03/03/2023

Batch 203485 **SampType:** MS Units **mg/L**
SampID: 23020845-007EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		**0.025**	0.0250	0	99.5	75	125	03/03/2023

Batch 203485 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-007EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005	R	**0.020**	0.0250	0	81.8	0.02488	19.53	03/03/2023

Batch 203538 **SampType:** MBLK Units **mg/L**
SampID: MBLK 230303 TCN1

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		**< 0.005**	0.0015	0	0	-100	100	03/06/2023

Batch 203538 **SampType:** LCS Units **mg/L**
SampID: LCS 230303 TCN1

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		**0.023**	0.0250	0	92.9	90	110	03/06/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

SW-846 9012A (TOTAL)

Batch 203538 **SampType:** MS Units **mg/L**
SampID: 23020845-035FMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		**0.025**	0.0250	0	98.2	75	125	03/06/2023

Batch 203538 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-035FMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005		**0.022**	0.0250	0	89.5	0.02454	9.21	03/06/2023

Batch 203538 **SampType:** MS Units **mg/L**
SampID: 23020845-049DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005	S	**0.016**	0.0250	0	62.8	75	125	03/06/2023

Batch 203538 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-049DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005	R	**0.023**	0.0250	0	93.6	0.01570	39.42	03/06/2023

SW-846 9036 (DISSOLVED)

Batch R325628 **SampType:** MS Units **mg/L**
SampID: 23020845-002CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		**168**	100.0	75.21	93.1	85	115	03/06/2023

Batch R325628 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-002CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50		**172**	100.0	75.21	97.2	168.4	2.36	03/06/2023

Batch R325628 **SampType:** MS Units **mg/L**
SampID: 23020845-030CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		**180**	100.0	88.46	91.8	85	115	03/06/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

SW-846 9036 (DISSOLVED)

Batch R325628 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-030CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50		**185**	100.0	88.46	96.3	180.3	2.47	03/06/2023

Batch R325628 **SampType:** MS Units **mg/L**
SampID: 23020845-034CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		**205**	100.0	108.2	96.7	85	115	03/06/2023

Batch R325628 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-034CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50		**207**	100.0	108.2	98.4	204.9	0.83	03/06/2023

SW-846 9036 (TOTAL)

Batch R325628 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	03/06/2023

Batch R325628 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**21**	20.00	0	104.6	90	110	03/06/2023

Batch R325693 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	03/07/2023

Batch R325693 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**20**	20.00	0	100.5	90	110	03/07/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

SW-846 9036 (TOTAL)

Batch R325693 **SampType:** MS Units **mg/L**
SampID: 23020845-003AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		**215**	100.0	129.4	85.6	85	115	03/07/2023

Batch R325693 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-003AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50		**220**	100.0	129.4	90.6	215.0	2.29	03/07/2023

Batch R325693 **SampType:** MS Units **mg/L**
SampID: 23020845-024AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		**208**	100.0	108.0	100.4	85	115	03/07/2023

Batch R325693 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-024AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50		**209**	100.0	108.0	101.3	208.4	0.45	03/07/2023

Batch R325693 **SampType:** MS Units **mg/L**
SampID: 23020845-030AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		**179**	100.0	82.42	96.2	85	115	03/07/2023

Batch R325693 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-030AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50		**182**	100.0	82.42	99.3	178.7	1.71	03/07/2023

Batch R325765 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	03/08/2023

Batch R325765 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**20**	20.00	0	101.2	90	110	03/08/2023

Teklab, Inc. Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

SW-846 9036 (TOTAL)

Batch R325765 **SampType:** MS Units **mg/L**
SampID: 23020845-037AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		**212**	100.0	111.8	99.9	85	115	03/08/2023

Batch R325765 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020845-037AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50		**209**	100.0	111.8	97.3	211.7	1.21	03/08/2023

SW-846 9066 (TOTAL)

Batch R325651 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Phenols		0.005		**< 0.005**	0.0028	0	0	-100	100	03/06/2023

Batch R325651 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Phenols		0.005		**0.055**	0.0500	0	109.8	90	110	03/06/2023

Batch R325651 **SampType:** MS Units **µg/L**
SampID: 23020845-051GMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Phenols		5		**55**	50.00	3.190	104.0	85	115	03/06/2023

Batch R325651 **SampType:** MSD Units **µg/L** RPD Limit: **15**
SampID: 23020845-051GMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Phenols		5		**56**	50.00	3.190	104.7	55.20	0.65	03/06/2023

SW-846 9214 (DISSOLVED)

Batch R325510 **SampType:** MS Units **mg/L**
SampID: 23020845-008BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.24**	2.000	0.1350	105.4	75	125	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

SW-846 9214 (DISSOLVED)

Batch R325510 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-008BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.24**	2.000	0.1350	105.5	2.242	0.13	03/02/2023

Batch R325510 **SampType:** MS Units **mg/L**
SampID: 23020845-039CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.37**	2.000	0.2680	105.0	75	125	03/02/2023

Batch R325510 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-039CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.43**	2.000	0.2680	108.0	2.368	2.50	03/02/2023

SW-846 9214 (TOTAL)

Batch R325510 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**< 0.10**	0.0370	0	0	-100	100	03/02/2023

Batch R325510 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**1.05**	1.000	0	105.3	90	110	03/02/2023

Batch R325510 **SampType:** MS Units **mg/L**
SampID: 23020845-009AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.22**	2.000	0.1560	103.4	75	125	03/02/2023

Batch R325510 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-009AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.13**	2.000	0.1560	98.8	2.224	4.18	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

SW-846 9214 (TOTAL)

Batch R325510 **SampType:** MS Units **mg/L**
SampID: 23020845-013AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.17**	2.000	0.1270	102.0	75	125	03/02/2023

Batch R325510 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-013AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.24**	2.000	0.1270	105.4	2.168	3.04	03/02/2023

Batch R325510 **SampType:** MS Units **mg/L**
SampID: 23020845-025AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.15**	2.000	0.1410	100.2	75	125	03/02/2023

Batch R325510 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-025AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.14**	2.000	0.1410	100.0	2.146	0.23	03/02/2023

Batch R325510 **SampType:** MS Units **mg/L**
SampID: 23020845-034AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.28**	2.000	0.1490	106.8	75	125	03/02/2023

Batch R325510 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-034AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.24**	2.000	0.1490	104.6	2.284	1.95	03/02/2023

Batch R325510 **SampType:** MS Units **mg/L**
SampID: 23020845-043AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**1.97**	2.000	0.1400	91.6	75	125	03/02/2023

Batch R325510 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-043AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.05**	2.000	0.1400	95.5	1.971	3.93	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

SW-846 9214 (TOTAL)

Batch R325510 **SampType:** MS Units **mg/L**
SampID: 23020845-051AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.00**	2.000	0	100.0	75	125	03/02/2023

Batch R325510 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-051AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.05**	2.000	0	102.7	2.000	2.66	03/02/2023

SW-846 9251 (DISSOLVED)

Batch R325629 **SampType:** MS Units **mg/L**
SampID: 23020845-002CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		20		**179**	100.0	88.87	89.7	85	115	03/06/2023

Batch R325629 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-002CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		20		**178**	100.0	88.87	89.5	178.5	0.10	03/06/2023

Batch R325629 **SampType:** MS Units **mg/L**
SampID: 23020845-030CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		20		**195**	100.0	102.4	92.6	85	115	03/06/2023

Batch R325629 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-030CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		20		**192**	100.0	102.4	89.2	195.1	1.78	03/06/2023

Batch R325629 **SampType:** MS Units **mg/L**
SampID: 23020845-034CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		20		**181**	100.0	86.13	94.7	85	115	03/06/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

SW-846 9251 (DISSOLVED)

Batch R325629 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-034CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		20		**179**	100.0	86.13	92.9	180.8	0.97	03/06/2023

Batch R325696 **SampType:** MS Units **mg/L**
SampID: 23020845-013BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		5		**190**	100.0	98.15	91.5	85	115	03/07/2023

Batch R325696 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-013BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		5		**190**	100.0	98.15	92.0	189.6	0.26	03/07/2023

SW-846 9251 (TOTAL)

Batch R325629 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	03/06/2023

Batch R325629 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**21**	20.00	0	103.1	90	110	03/06/2023

Batch R325696 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**< 1**	0.5000	0	0	-100	100	03/07/2023

Batch R325696 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**20**	20.00	0	99.8	90	110	03/07/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

SW-846 9251 (TOTAL)

Batch R325696 **SampType:** MS Units **mg/L**
SampID: 23020845-024AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		5		**195**	100.0	104.4	90.6	85	115	03/07/2023

Batch R325696 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-024AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		5		**195**	100.0	104.4	90.6	195.0	0.03	03/07/2023

Batch R325696 **SampType:** MS Units **mg/L**
SampID: 23020845-030AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		5		**219**	100.0	130.4	89.0	85	115	03/07/2023

Batch R325696 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-030AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		5		**218**	100.0	130.4	87.2	219.4	0.82	03/07/2023

Batch R325771 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**< 1**	0.5000	0	0	-100	100	03/08/2023

Batch R325771 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**20**	20.00	0	99.0	90	110	03/08/2023

Batch R325771 **SampType:** MS Units **mg/L**
SampID: 23020845-003AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		20		**590**	400.0	226.8	90.7	85	115	03/08/2023

Batch R325771 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-003AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		20		**593**	400.0	226.8	91.5	589.7	0.54	03/08/2023

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Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

SW-846 9251 (TOTAL)

Batch R325771 **SampType:** MS Units **mg/L**
SampID: 23020845-037AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		5		**204**	100.0	113.2	90.4	85	115	03/08/2023

Batch R325771 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020845-037AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		5		**200**	100.0	113.2	87.0	203.5	1.68	03/08/2023

SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)

Batch 203472 **SampType:** MBLK Units **mg/L**
SampID: MBLK-203472

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**< 0.100**	0.0350	0	0	-100	100	03/09/2023
Magnesium		0.050		**< 0.050**	0.0055	0	0	-100	100	03/09/2023

Batch 203472 **SampType:** LCS Units **mg/L**
SampID: LCS-203472

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**2.54**	2.500	0	101.5	85	115	03/09/2023
Magnesium		0.050		**2.31**	2.500	0	92.2	85	115	03/09/2023

Batch 203472 **SampType:** MS Units **mg/L**
SampID: 23020845-005DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	**74.3**	2.500	73.42	35.6	75	125	03/09/2023
Magnesium		0.050	S	**29.1**	2.500	27.39	69.3	75	125	03/09/2023

Batch 203472 **SampType:** MSD Units **mg/L** RPD Limit: **20**
SampID: 23020845-005DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		**75.4**	2.500	73.42	80.4	74.31	1.50	03/09/2023
Magnesium		0.050		**29.7**	2.500	27.39	92.5	29.12	1.97	03/09/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)

Batch 203473 **SampType:** MBLK Units **mg/L**
SampID: MBLK-203473

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**< 0.100**	0.0350	0	0	-100	100	03/03/2023
Magnesium		0.0500		**< 0.0500**	0.0055	0	0	-100	100	03/03/2023

Batch 203473 **SampType:** LCS Units **mg/L**
SampID: LCS-203473

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**2.45**	2.500	0	97.9	85	115	03/03/2023
Magnesium		0.0500		**2.41**	2.500	0	96.6	85	115	03/03/2023

Batch 203473 **SampType:** MS Units **mg/L**
SampID: 23020845-051EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**2.44**	2.500	0	97.6	75	125	03/03/2023
Magnesium		0.050		**2.40**	2.500	0	96.1	75	125	03/03/2023

Batch 203473 **SampType:** MSD Units **mg/L** RPD Limit: **20**
SampID: 23020845-051EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		**2.45**	2.500	0	97.8	2.439	0.29	03/03/2023
Magnesium		0.050		**2.43**	2.500	0	97.1	2.403	1.03	03/03/2023

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 203466 **SampType:** MBLK Units **mg/L**
SampID: MBLK-203466

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**< 0.100**	0.0350	0	0	-100	100	03/03/2023
Magnesium		0.050		**< 0.050**	0.0055	0	0	-100	100	03/03/2023
Potassium		0.100		**< 0.100**	0.0400	0	0	-100	100	03/03/2023
Sodium		0.050		**< 0.050**	0.0180	0	0	-100	100	03/03/2023

Teklab, Inc. Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 203466 **SampType:** LCS Units **mg/L**
SampID: LCS-203466

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**2.65**	2.500	0	106.1	85	115	03/03/2023
Magnesium		0.050		**2.63**	2.500	0	105.2	85	115	03/03/2023
Potassium		0.100		**2.52**	2.500	0	101.0	85	115	03/03/2023
Sodium		0.050		**2.50**	2.500	0	100.1	85	115	03/03/2023

Batch 203466 **SampType:** MS Units **mg/L**
SampID: 23020845-007CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**102**	2.500	99.38	120.8	75	125	03/03/2023
Magnesium		0.050		**36.2**	2.500	33.39	114.4	75	125	03/03/2023
Potassium		0.100		**7.73**	2.500	4.797	117.4	75	125	03/06/2023
Sodium		0.050		**60.0**	2.500	57.31	107.2	75	125	03/03/2023

Batch 203466 **SampType:** MSD Units **mg/L** RPD Limit: **20**
SampID: 23020845-007CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	**103**	2.500	99.38	136.8	102.4	0.39	03/03/2023
Magnesium		0.050		**36.2**	2.500	33.39	114.4	36.25	0.00	03/03/2023
Potassium		0.100		**7.42**	2.500	4.797	105.1	7.731	4.05	03/06/2023
Sodium		0.050		**60.2**	2.500	57.31	116.0	59.99	0.37	03/03/2023

Batch 203466 **SampType:** MS Units **mg/L**
SampID: 23020845-023BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	**90.9**	2.500	87.61	130.8	75	125	03/03/2023
Magnesium		0.050		**32.2**	2.500	29.43	110.0	75	125	03/03/2023
Potassium		0.100		**8.52**	2.500	5.864	106.4	75	125	03/06/2023
Sodium		0.050		**54.1**	2.500	51.50	104.8	75	125	03/03/2023

Batch 203466 **SampType:** MSD Units **mg/L** RPD Limit: **20**
SampID: 23020845-023BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		**90.2**	2.500	87.61	101.6	90.88	0.81	03/03/2023
Magnesium		0.050		**31.9**	2.500	29.43	98.4	32.18	0.91	03/03/2023
Potassium		0.100		**8.42**	2.500	5.864	102.4	8.523	1.16	03/06/2023
Sodium		0.050		**53.5**	2.500	51.50	79.6	54.12	1.17	03/03/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 203468 **SampType:** MBLK Units **mg/L**
SampID: MBLK-203468

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**< 0.100**	0.0350	0	0	-100	100	03/03/2023
Magnesium		0.050		**< 0.050**	0.0055	0	0	-100	100	03/03/2023
Potassium		0.100		**< 0.100**	0.0400	0	0	-100	100	03/06/2023
Sodium		0.050		**< 0.050**	0.0180	0	0	-100	100	03/03/2023

Batch 203468 **SampType:** LCS Units **mg/L**
SampID: LCS-203468

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**2.66**	2.500	0	106.5	85	115	03/03/2023
Magnesium		0.050		**2.62**	2.500	0	104.6	85	115	03/03/2023
Potassium		0.100		**2.56**	2.500	0	102.4	85	115	03/06/2023
Sodium		0.050		**2.50**	2.500	0	100.1	85	115	03/03/2023

Batch 203468 **SampType:** MS Units **mg/L**
SampID: 23020845-032CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	**96.7**	2.500	89.90	270.4	75	125	03/03/2023
Magnesium		0.050	S	**35.0**	2.500	31.33	146.4	75	125	03/03/2023
Potassium		0.500		**11.4**	2.500	8.785	105.6	75	125	03/06/2023
Sodium		0.050	S	**50.2**	2.500	45.92	173.2	75	125	03/03/2023

Batch 203468 **SampType:** MSD Units **mg/L** RPD Limit: **20**
SampID: 23020845-032CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	**97.7**	2.500	89.90	312.4	96.66	1.08	03/03/2023
Magnesium		0.050	S	**35.4**	2.500	31.33	164.0	34.99	1.25	03/03/2023
Potassium		0.500		**11.1**	2.500	8.785	91.6	11.42	3.11	03/06/2023
Sodium		0.050	S	**51.0**	2.500	45.92	204.4	50.25	1.54	03/03/2023

Batch 203468 **SampType:** MS Units **mg/L**
SampID: 23020845-043BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	**110**	2.500	105.8	168.0	75	125	03/03/2023
Magnesium		0.050		**2.90**	2.500	0.2942	104.3	75	125	03/03/2023
Potassium		1.00		**28.0**	2.500	25.07	117.6	75	125	03/06/2023
Sodium		0.050	S	**123**	2.500	118.6	188.0	75	125	03/03/2023

Teklab, Inc. Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 203468 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 23020845-043BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	**110**	2.500	105.8	180.0	110.0	0.27	03/03/2023
Magnesium		0.050		**2.88**	2.500	0.2942	103.4	2.901	0.80	03/03/2023
Potassium		1.00		**27.0**	2.500	25.07	79.2	28.01	3.49	03/06/2023
Sodium		0.050	S	**124**	2.500	118.6	208.0	123.3	0.40	03/03/2023

Batch 203617 **SampType:** MBLK Units **mg/L**

SampID: MBLK-203617

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**< 0.100**	0.0350	0	0	-100	100	03/08/2023
Magnesium		0.0500		**< 0.0500**	0.0055	0	0	-100	100	03/08/2023
Potassium		0.100		**< 0.100**	0.0400	0	0	-100	100	03/08/2023
Sodium		0.0500		**< 0.0500**	0.0180	0	0	-100	100	03/08/2023

Batch 203617 **SampType:** LCS Units **mg/L**

SampID: LCS-203617

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**2.59**	2.500	0	103.6	85	115	03/08/2023
Magnesium		0.0500		**2.59**	2.500	0	103.7	85	115	03/08/2023
Potassium		0.100		**2.55**	2.500	0	102.0	85	115	03/08/2023
Sodium		0.0500		**2.42**	2.500	0	96.7	85	115	03/08/2023

Batch 203617 **SampType:** MS Units **mg/L**

SampID: 23020845-023BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	**92.6**	2.500	87.27	215.2	75	125	03/08/2023
Magnesium		0.050	S	**35.0**	2.500	29.46	220.0	75	125	03/08/2023
Sodium		0.050	S	**55.6**	2.500	50.52	204.4	75	125	03/08/2023

Batch 203617 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 23020845-023BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	**92.6**	2.500	87.27	215.2	92.65	0.00	03/08/2023
Magnesium		0.050	S	**34.9**	2.500	29.46	216.0	34.96	0.29	03/08/2023
Sodium		0.050	S	**55.9**	2.500	50.52	216.0	55.63	0.52	03/08/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

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

Batch 203472 **SampType:** MBLK Units **µg/L**
SampID: MBLK-203472

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		25.0		**< 25.0**	12.50	0	0	-100	100	03/02/2023
Antimony		1.0		**< 1.0**	0.4500	0	0	-100	100	03/02/2023
Arsenic		1.0		**< 1.0**	0.3750	0	0	-100	100	03/02/2023
Barium		1.0		**< 1.0**	0.7000	0	0	-100	100	03/02/2023
Beryllium		1.0		**< 1.0**	0.2500	0	0	-100	100	03/02/2023
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	03/02/2023
Cadmium		1.0		**< 1.0**	0.1340	0	0	-100	100	03/02/2023
Chromium		1.5		**< 1.5**	0.7000	0	0	-100	100	03/02/2023
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	03/02/2023
Copper		1.0		**< 1.0**	0.3000	0	0	-100	100	03/02/2023
Iron		25.0		**< 25.0**	11.50	0	0	-100	100	03/02/2023
Lead		1.0		**< 1.0**	0.6000	0	0	-100	100	03/02/2023
Manganese		2.0		**< 2.0**	0.7500	0	0	-100	100	03/02/2023
Molybdenum		1.5		**< 1.5**	0.6000	0	0	-100	100	03/02/2023
Nickel		1.0		**< 1.0**	0.4300	0	0	-100	100	03/02/2023
Selenium		1.0		**< 1.0**	0.6000	0	0	-100	100	03/02/2023
Silver		1.0		**< 1.0**	0.1000	0	0	-100	100	03/02/2023
Thallium		2.0		**< 2.0**	0.9500	0	0	-100	100	03/02/2023
Vanadium		5.0		**< 5.0**	5.000	0	0	-100	100	03/02/2023
Zinc		15.0		**< 15.0**	5.900	0	0	-100	100	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

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

Batch 203472 **SampType:** LCS Units **µg/L**
SampID: LCS-203472

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		25.0		**1750**	2000	0	87.7	80	120	03/03/2023
Antimony		1.0		**542**	500.0	0	108.4	80	120	03/02/2023
Arsenic		1.0		**555**	500.0	0	111.1	80	120	03/02/2023
Barium		1.0		**2270**	2000	0	113.3	80	120	03/02/2023
Beryllium		1.0		**53.8**	50.00	0	107.7	80	120	03/02/2023
Boron		25.0		**550**	500.0	0	109.9	80	120	03/02/2023
Cadmium		1.0		**54.4**	50.00	0	108.7	80	120	03/02/2023
Chromium		1.5		**223**	200.0	0	111.6	80	120	03/02/2023
Cobalt		1.0		**572**	500.0	0	114.3	80	120	03/02/2023
Copper		1.0		**292**	250.0	0	116.8	80	120	03/02/2023
Iron		25.0		**2260**	2000	0	113.0	80	120	03/02/2023
Lead		1.0		**559**	500.0	0	111.8	80	120	03/02/2023
Manganese		2.0		**559**	500.0	0	111.8	80	120	03/02/2023
Molybdenum		1.5		**538**	500.0	0	107.5	80	120	03/02/2023
Nickel		1.0		**572**	500.0	0	114.4	80	120	03/02/2023
Selenium		1.0		**515**	500.0	0	103.1	80	120	03/02/2023
Silver		1.0		**58.9**	50.00	0	117.9	80	120	03/02/2023
Thallium		2.0		**276**	250.0	0	110.6	80	120	03/02/2023
Vanadium		5.0		**544**	500.0	0	108.8	80	120	03/02/2023
Zinc		15.0		**531**	500.0	0	106.2	80	120	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Batch 203472 **SampType:** MS Units **µg/L**

SampID: 23020845-005DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		25.0		**1710**	2000	0	85.7	75	125	03/03/2023
Antimony		1.0		**590**	500.0	0.5607	117.9	75	125	03/02/2023
Arsenic		1.0		**600**	500.0	0	119.9	75	125	03/02/2023
Barium		1.0		**1840**	2000	49.50	89.5	75	125	03/03/2023
Beryllium		1.0		**45.4**	50.00	0	90.8	75	125	03/03/2023
Boron		25.0		**646**	500.0	175.6	94.0	75	125	03/06/2023
Cadmium		1.0		**58.9**	50.00	0	117.7	75	125	03/02/2023
Chromium		1.5		**177**	200.0	0	88.5	75	125	03/03/2023
Cobalt		1.0		**572**	500.0	0	114.4	75	125	03/02/2023
Copper		1.0		**286**	250.0	0.7983	114.1	75	125	03/02/2023
Iron		25.0		**1790**	2000	0	89.7	75	125	03/03/2023
Lead		1.0		**592**	500.0	0	118.4	75	125	03/02/2023
Manganese		2.0		**579**	500.0	0	115.9	75	125	03/02/2023
Molybdenum		1.5		**611**	500.0	19.68	118.3	75	125	03/02/2023
Nickel		1.0		**573**	500.0	0.7214	114.4	75	125	03/02/2023
Selenium		1.0		**560**	500.0	0.7404	111.9	75	125	03/02/2023
Silver		1.0		**59.8**	50.00	0	119.5	75	125	03/02/2023
Thallium		2.0		**224**	250.0	0	89.5	75	125	03/03/2023
Zinc		15.0		**561**	500.0	0	112.1	75	125	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

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

Batch 203472 **SampType:** MSD Units µg/L RPD Limit: 20
SampID: 23020845-005DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Aluminum		25.0		**1830**	2000	0	91.6	1714	6.73	03/03/2023
Antimony		1.0		**490**	500.0	0.5607	97.8	590.1	18.57	03/02/2023
Arsenic		1.0		**505**	500.0	0	101.0	599.6	17.11	03/02/2023
Barium		1.0		**1920**	2000	49.50	93.8	1839	4.59	03/03/2023
Beryllium		1.0		**48.5**	50.00	0	97.0	45.41	6.61	03/03/2023
Boron		25.0		**698**	500.0	175.6	104.4	645.7	7.76	03/06/2023
Cadmium		1.0		**48.4**	50.00	0	96.7	58.87	19.62	03/02/2023
Chromium		1.5		**189**	200.0	0	94.6	177.0	6.60	03/03/2023
Cobalt		1.0		**478**	500.0	0	95.6	571.9	17.89	03/02/2023
Copper		1.0		**240**	250.0	0.7983	95.6	286.1	17.60	03/02/2023
Iron		25.0		**1900**	2000	0	94.9	1794	5.66	03/03/2023
Lead		1.0		**490**	500.0	0	98.0	592.1	18.87	03/02/2023
Manganese		2.0		**481**	500.0	0	96.1	579.4	18.64	03/02/2023
Molybdenum		1.5		**505**	500.0	19.68	97.1	611.1	18.95	03/02/2023
Nickel		1.0		**473**	500.0	0.7214	94.5	572.8	19.08	03/02/2023
Selenium		1.0		**466**	500.0	0.7404	93.1	560.2	18.29	03/02/2023
Silver		1.0		**50.4**	50.00	0	100.8	59.77	17.03	03/02/2023
Thallium		2.0		**243**	250.0	0	97.0	223.7	8.08	03/03/2023
Zinc		15.0		**466**	500.0	0	93.1	560.6	18.50	03/02/2023

Batch 203472 **SampType:** MS Units µg/L
SampID: 23020845-025DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**1930**	500.0	1517	82.5	75	125	03/07/2023

Batch 203472 **SampType:** MSD Units µg/L RPD Limit: 20
SampID: 23020845-025DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron		25.0		**1900**	500.0	1517	76.1	1929	1.67	03/07/2023

Teklab, Inc.
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Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

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

Batch **203473** **SampType:** **MBLK** Units **µg/L**
SampID: MBLK-203473

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		25.0		**< 25.0**	12.50	0	0	-100	100	03/02/2023
Antimony		1.0		**< 1.0**	0.4500	0	0	-100	100	03/02/2023
Arsenic		1.0		**< 1.0**	0.3750	0	0	-100	100	03/02/2023
Barium		1.0		**< 1.0**	0.7000	0	0	-100	100	03/02/2023
Beryllium		1.0		**< 1.0**	0.2500	0	0	-100	100	03/02/2023
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	03/02/2023
Cadmium		1.0		**< 1.0**	0.1340	0	0	-100	100	03/02/2023
Chromium		1.5		**< 1.5**	0.7000	0	0	-100	100	03/02/2023
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	03/02/2023
Copper		1.0		**< 1.0**	0.3000	0	0	-100	100	03/02/2023
Iron		25.0		**< 25.0**	11.50	0	0	-100	100	03/02/2023
Lead		1.0		**< 1.0**	0.6000	0	0	-100	100	03/02/2023
Manganese		2.0		**< 2.0**	0.7500	0	0	-100	100	03/02/2023
Molybdenum		1.5		**< 1.5**	0.6000	0	0	-100	100	03/02/2023
Nickel		1.0		**< 1.0**	0.4300	0	0	-100	100	03/02/2023
Selenium		1.0		**< 1.0**	0.6000	0	0	-100	100	03/02/2023
Silver		1.0		**< 1.0**	0.1000	0	0	-100	100	03/02/2023
Thallium		2.0		**< 2.0**	0.9500	0	0	-100	100	03/02/2023
Vanadium		5.0		**< 5.0**	5.000	0	0	-100	100	03/02/2023
Zinc		15.0		**< 15.0**	5.900	0	0	-100	100	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

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

Batch 203473 **SampType:** LCS Units **µg/L**
SampID: LCS-203473

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		25.0		**2060**	2000	0	103.0	80	120	03/03/2023
Antimony		1.0		**502**	500.0	0	100.5	80	120	03/03/2023
Arsenic		1.0		**488**	500.0	0	97.6	80	120	03/03/2023
Barium		1.0		**2130**	2000	0	106.4	80	120	03/03/2023
Beryllium		1.0		**52.1**	50.00	0	104.2	80	120	03/03/2023
Boron		25.0		**501**	500.0	0	100.3	80	120	03/03/2023
Cadmium		1.0		**52.0**	50.00	0	104.0	80	120	03/03/2023
Chromium		1.5		**214**	200.0	0	107.0	80	120	03/03/2023
Cobalt		1.0		**543**	500.0	0	108.6	80	120	03/03/2023
Copper		1.0		**275**	250.0	0	110.0	80	120	03/03/2023
Iron		25.0		**2160**	2000	0	108.0	80	120	03/03/2023
Lead		1.0		**529**	500.0	0	105.7	80	120	03/03/2023
Manganese		2.0		**533**	500.0	0	106.7	80	120	03/03/2023
Molybdenum		1.5		**517**	500.0	0	103.4	80	120	03/03/2023
Nickel		1.0		**538**	500.0	0	107.7	80	120	03/03/2023
Selenium		1.0		**473**	500.0	0	94.6	80	120	03/03/2023
Silver		1.0		**52.3**	50.00	0	104.5	80	120	03/03/2023
Thallium		2.0		**244**	250.0	0	97.4	80	120	03/03/2023
Vanadium		5.0		**523**	500.0	0	104.7	80	120	03/03/2023
Zinc		15.0		**462**	500.0	0	92.3	80	120	03/03/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

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

Batch 203473 **SampType:** MS Units **µg/L**
SampID: 23020845-035EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**407**	500.0	0	81.3	75	125	03/03/2023
Arsenic		1.0		**442**	500.0	0.5053	88.2	75	125	03/03/2023
Barium		1.0		**1740**	2000	46.25	84.8	75	125	03/03/2023
Beryllium		1.0		**42.5**	50.00	0	85.0	75	125	03/03/2023
Boron		25.0		**3200**	500.0	2627	114.2	75	125	03/02/2023
Cadmium		1.0		**41.9**	50.00	0	83.8	75	125	03/03/2023
Chromium		1.5		**168**	200.0	0.8898	83.5	75	125	03/03/2023
Cobalt		1.0		**423**	500.0	0.1224	84.5	75	125	03/03/2023
Copper		1.0		**211**	250.0	0.8759	84.1	75	125	03/03/2023
Iron		25.0		**1720**	2000	0	86.0	75	125	03/03/2023
Lead		1.0		**439**	500.0	0	87.7	75	125	03/03/2023
Manganese		2.0		**427**	500.0	2.474	85.0	75	125	03/03/2023
Nickel		1.0		**415**	500.0	0.9686	82.7	75	125	03/03/2023
Selenium		1.0		**635**	500.0	18.35	123.4	75	125	03/02/2023
Silver		1.0		**42.8**	50.00	0	85.7	75	125	03/03/2023
Thallium		2.0		**219**	250.0	0	87.4	75	125	03/03/2023
Vanadium		5.0		**428**	500.0	6.704	84.2	75	125	03/03/2023
Zinc		15.0		**619**	500.0	0	123.8	75	125	03/02/2023

Teklab, Inc. Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Batch 203473 **SampType:** MSD Units **µg/L** RPD Limit: **20**

SampID: 23020845-035EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		1.0		**421**	500.0	0	84.1	406.6	3.38	03/03/2023
Arsenic		1.0		**441**	500.0	0.5053	88.2	441.6	0.05	03/03/2023
Barium		1.0		**1770**	2000	46.25	86.1	1743	1.51	03/03/2023
Beryllium		1.0		**42.1**	50.00	0	84.1	42.49	1.00	03/03/2023
Boron		25.0		**3180**	500.0	2627	110.8	3198	0.53	03/02/2023
Cadmium		1.0		**42.1**	50.00	0	84.1	41.89	0.39	03/03/2023
Chromium		1.5		**169**	200.0	0.8898	83.9	167.8	0.54	03/03/2023
Cobalt		1.0		**419**	500.0	0.1224	83.9	422.8	0.81	03/03/2023
Copper		1.0		**210**	250.0	0.8759	83.8	211.0	0.32	03/03/2023
Iron		25.0		**1710**	2000	0	85.6	1720	0.49	03/03/2023
Lead		1.0		**437**	500.0	0	87.3	438.6	0.47	03/03/2023
Manganese		2.0		**425**	500.0	2.474	84.5	427.3	0.59	03/03/2023
Nickel		1.0		**413**	500.0	0.9686	82.3	414.7	0.49	03/03/2023
Selenium		1.0		**634**	500.0	18.35	123.2	635.4	0.17	03/02/2023
Silver		1.0		**43.2**	50.00	0	86.5	42.84	0.94	03/03/2023
Thallium		2.0		**215**	250.0	0	86.0	218.6	1.61	03/03/2023
Vanadium		5.0		**425**	500.0	6.704	83.7	427.7	0.56	03/03/2023
Zinc		15.0	S	**626**	500.0	0	125.1	618.9	1.08	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

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

Batch 203473 **SampType:** MS Units **µg/L**
SampID: 23020845-051EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		25.0		**1820**	2000	0	90.9	75	125	03/03/2023
Antimony		1.0		**462**	500.0	0	92.4	75	125	03/03/2023
Arsenic		1.0		**490**	500.0	0	98.1	75	125	03/02/2023
Barium		1.0		**1930**	2000	0	96.3	75	125	03/03/2023
Beryllium		1.0		**48.6**	50.00	0	97.2	75	125	03/02/2023
Boron		25.0		**504**	500.0	0	100.9	75	125	03/02/2023
Cadmium		1.0		**46.6**	50.00	0	93.1	75	125	03/03/2023
Chromium		1.5		**202**	200.0	1.653	100.0	75	125	03/02/2023
Cobalt		1.0		**478**	500.0	0	95.6	75	125	03/03/2023
Copper		1.0		**255**	250.0	1.672	101.4	75	125	03/02/2023
Iron		25.0		**1930**	2000	17.63	95.5	75	125	03/03/2023
Lead		1.0		**500**	500.0	0	100.1	75	125	03/02/2023
Manganese		2.0		**496**	500.0	0	99.2	75	125	03/02/2023
Molybdenum		1.5		**464**	500.0	0	92.8	75	125	03/03/2023
Nickel		1.0		**494**	500.0	0	98.8	75	125	03/02/2023
Selenium		1.0		**464**	500.0	0	92.7	75	125	03/02/2023
Silver		1.0		**48.1**	50.00	0	96.2	75	125	03/03/2023
Thallium		2.0		**246**	250.0	0	98.3	75	125	03/02/2023
Vanadium		5.0		**477**	500.0	0	95.3	75	125	03/02/2023
Zinc		15.0		**484**	500.0	0	96.9	75	125	03/02/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Batch 203473 **SampType:** MSD Units µg/L RPD Limit: 20

SampID: 23020845-051EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Aluminum		25.0		**1760**	2000	0	88.1	1818	3.10	03/03/2023
Antimony		1.0		**456**	500.0	0	91.2	462.1	1.29	03/03/2023
Arsenic		1.0		**589**	500.0	0	117.8	490.3	18.30	03/02/2023
Barium		1.0		**1910**	2000	0	95.4	1926	0.99	03/03/2023
Beryllium		1.0		**59.3**	50.00	0	118.7	48.59	19.92	03/02/2023
Boron		25.0		**594**	500.0	0	118.8	504.4	16.28	03/02/2023
Cadmium		1.0		**46.0**	50.00	0	92.1	46.56	1.13	03/03/2023
Chromium		1.5		**239**	200.0	1.653	118.6	201.7	16.83	03/02/2023
Cobalt		1.0		**464**	500.0	0	92.9	478.1	2.92	03/03/2023
Copper		1.0		**308**	250.0	1.672	122.6	255.2	18.83	03/02/2023
Iron		25.0		**1880**	2000	17.63	93.3	1928	2.33	03/03/2023
Lead		1.0		**604**	500.0	0	120.8	500.4	18.76	03/02/2023
Manganese		2.0		**599**	500.0	0	119.9	496.2	18.82	03/02/2023
Molybdenum		1.5		**458**	500.0	0	91.6	463.8	1.22	03/03/2023
Nickel		1.0		**598**	500.0	0	119.6	494.0	19.06	03/02/2023
Selenium		1.0		**551**	500.0	0	110.2	463.7	17.20	03/02/2023
Silver		1.0		**48.2**	50.00	0	96.4	48.12	0.20	03/03/2023
Thallium		2.0		**292**	250.0	0	116.6	245.7	17.06	03/02/2023
Vanadium		5.0		**578**	500.0	0	115.5	476.7	19.16	03/02/2023
Zinc		15.0		**584**	500.0	0	116.8	484.3	18.67	03/02/2023

Batch 204110 **SampType:** MBLK Units µg/L

SampID: MBLK-204110

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	03/22/2023
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	03/22/2023

Batch 204110 **SampType:** LCS Units µg/L

SampID: LCS-204110

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**481**	500.0	0	96.2	80	120	03/22/2023
Cobalt		1.0		**485**	500.0	0	97.1	80	120	03/22/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Batch 204110 **SampType:** MS Units µg/L

SampID: 23020845-019DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0	S	**8520**	500.0	8393	25.9	75	125	03/22/2023

Batch 204110 **SampType:** MSD Units µg/L RPD Limit: **20**

SampID: 23020845-019DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron		25.0	S	**8570**	500.0	8393	35.3	8522	0.55	03/22/2023

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

Batch 203466 **SampType:** MBLK Units µg/L

SampID: MBLK-203466

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**< 1.0**	0.4500	0	0	-100	100	03/03/2023
Arsenic		1.0		**< 1.0**	0.3750	0	0	-100	100	03/03/2023
Barium		1.0		**< 1.0**	0.7000	0	0	-100	100	03/03/2023
Beryllium		1.0		**< 1.0**	0.2500	0	0	-100	100	03/06/2023
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	03/06/2023
Cadmium		1.0		**< 1.0**	0.1340	0	0	-100	100	03/03/2023
Chromium		1.5		**< 1.5**	0.7000	0	0	-100	100	03/06/2023
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	03/03/2023
Lead		1.0		**< 1.0**	0.6000	0	0	-100	100	03/03/2023
Lithium	*	3.0		**< 3.0**	1.450	0	0	-100	100	03/06/2023
Molybdenum		1.5		**< 1.5**	0.6000	0	0	-100	100	03/03/2023
Selenium		1.0		**< 1.0**	0.6000	0	0	-100	100	03/03/2023
Thallium		2.0		**< 2.0**	0.9500	0	0	-100	100	03/03/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Batch 203466 **SampType:** LCS Units **µg/L**

SampID: LCS-203466

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**494**	500.0	0	98.9	80	120	03/03/2023
Arsenic		1.0		**480**	500.0	0	96.0	80	120	03/03/2023
Barium		1.0		**2100**	2000	0	104.8	80	120	03/03/2023
Beryllium		1.0		**51.2**	50.00	0	102.3	80	120	03/06/2023
Boron		25.0		**518**	500.0	0	103.6	80	120	03/06/2023
Cadmium		1.0		**56.3**	50.00	0	112.5	80	120	03/03/2023
Chromium		1.5		**206**	200.0	0	103.2	80	120	03/06/2023
Cobalt		1.0		**494**	500.0	0	98.8	80	120	03/03/2023
Lead		1.0		**489**	500.0	0	97.7	80	120	03/03/2023
Lithium	*	3.0		**574**	500.0	0	114.7	80	120	03/06/2023
Molybdenum		1.5		**505**	500.0	0	101.1	80	120	03/03/2023
Selenium		1.0		**448**	500.0	0	89.5	80	120	03/03/2023
Thallium		2.0		**243**	250.0	0	97.0	80	120	03/03/2023

Batch 203466 **SampType:** MS Units **µg/L**

SampID: 23020845-007CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**505**	500.0	0	101.1	75	125	03/03/2023
Arsenic		1.0		**498**	500.0	0	99.7	75	125	03/03/2023
Barium		1.0		**2240**	2000	116.6	106.3	75	125	03/03/2023
Beryllium		1.0		**52.7**	50.00	0	105.5	75	125	03/06/2023
Boron		25.0		**738**	500.0	207.3	106.2	75	125	03/06/2023
Cadmium		1.0		**55.5**	50.00	0	111.0	75	125	03/03/2023
Chromium		1.5		**203**	200.0	0	101.4	75	125	03/06/2023
Cobalt		1.0		**487**	500.0	0.1439	97.3	75	125	03/03/2023
Lead		1.0		**505**	500.0	0	101.0	75	125	03/03/2023
Lithium	*	3.0		**607**	500.0	7.654	119.8	75	125	03/06/2023
Molybdenum		1.5		**505**	500.0	9.996	99.1	75	125	03/03/2023
Selenium		1.0		**461**	500.0	0	92.2	75	125	03/03/2023
Thallium		2.0		**248**	250.0	0	99.2	75	125	03/03/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Batch 203466 **SampType: MSD** Units **µg/L** RPD Limit: **20**

SampID: 23020845-007CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		1.0		**508**	500.0	0	101.7	505.4	0.60	03/03/2023
Arsenic		1.0		**503**	500.0	0	100.6	498.4	0.93	03/03/2023
Barium		1.0		**2250**	2000	116.6	106.7	2242	0.40	03/03/2023
Beryllium		1.0		**53.0**	50.00	0	105.9	52.73	0.46	03/06/2023
Boron		25.0		**752**	500.0	207.3	108.8	738.3	1.78	03/06/2023
Cadmium		1.0		**56.6**	50.00	0	113.2	55.51	1.96	03/03/2023
Chromium		1.5		**202**	200.0	0	100.9	202.8	0.51	03/06/2023
Cobalt		1.0		**505**	500.0	0.1439	101.0	486.7	3.76	03/03/2023
Lead		1.0		**514**	500.0	0	102.7	504.9	1.72	03/03/2023
Lithium	*	3.0		**605**	500.0	7.654	119.5	606.8	0.30	03/06/2023
Molybdenum		1.5		**528**	500.0	9.996	103.7	505.5	4.42	03/03/2023
Selenium		1.0		**466**	500.0	0	93.1	461.0	0.98	03/03/2023
Thallium		2.0		**250**	250.0	0	99.9	247.9	0.72	03/03/2023

Batch 203468 **SampType: MBLK** Units **µg/L**

SampID: MBLK-203468

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**< 1.0**	0.4500	0	0	-100	100	03/03/2023
Arsenic		1.0		**< 1.0**	0.3750	0	0	-100	100	03/03/2023
Barium		1.0		**< 1.0**	0.7000	0	0	-100	100	03/03/2023
Beryllium		1.0		**< 1.0**	0.2500	0	0	-100	100	03/06/2023
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	03/06/2023
Cadmium		1.0		**< 1.0**	0.1340	0	0	-100	100	03/03/2023
Chromium		1.5		**< 1.5**	0.7000	0	0	-100	100	03/06/2023
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	03/03/2023
Lead		1.0		**< 1.0**	0.6000	0	0	-100	100	03/03/2023
Lithium	*	3.0		**< 3.0**	1.450	0	0	-100	100	03/06/2023
Molybdenum		1.5		**< 1.5**	0.6000	0	0	-100	100	03/03/2023
Selenium		1.0		**< 1.0**	0.6000	0	0	-100	100	03/03/2023
Thallium		2.0		**< 2.0**	0.9500	0	0	-100	100	03/03/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Batch 203468 **SampType:** LCS Units **µg/L**
SampID: LCS-203468

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**498**	500.0	0	99.6	80	120	03/03/2023
Arsenic		1.0		**497**	500.0	0	99.4	80	120	03/03/2023
Barium		1.0		**2160**	2000	0	108.0	80	120	03/03/2023
Beryllium		1.0		**55.0**	50.00	0	109.9	80	120	03/06/2023
Boron		25.0		**561**	500.0	0	112.2	80	120	03/06/2023
Cadmium		1.0		**56.0**	50.00	0	111.9	80	120	03/03/2023
Chromium		1.5		**218**	200.0	0	109.2	80	120	03/06/2023
Cobalt		1.0		**516**	500.0	0	103.2	80	120	03/03/2023
Lead		1.0		**491**	500.0	0	98.2	80	120	03/03/2023
Lithium	*	3.0		**496**	500.0	0	99.2	80	120	03/07/2023
Molybdenum		1.5		**508**	500.0	0	101.7	80	120	03/03/2023
Selenium		1.0		**460**	500.0	0	91.9	80	120	03/03/2023
Thallium		2.0		**235**	250.0	0	93.8	80	120	03/03/2023

Batch 203617 **SampType:** MBLK Units **µg/L**
SampID: MBLK-203617

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	03/08/2023

Batch 203617 **SampType:** LCS Units **µg/L**
SampID: LCS-203617

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**516**	500.0	0	103.1	80	120	03/08/2023

Batch 203617 **SampType:** MS Units **µg/L**
SampID: 23020845-023BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**2450**	1000	1407	104.3	75	125	03/08/2023

Batch 203617 **SampType:** MSD Units **µg/L** RPD Limit: **20**
SampID: 23020845-023BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron		25.0		**2370**	1000	1407	96.3	2450	3.29	03/08/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll **Work Order:** 23020845

Client Project: HEN-23Q1 **Report Date:** 14-Apr-23

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

Batch 204109 **SampType:** MBLK Units µg/L
SampID: MBLK-204109

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	03/22/2023
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	03/22/2023

Batch 204109 **SampType:** LCS Units µg/L
SampID: LCS-204109

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**503**	500.0	0	100.5	80	120	03/22/2023
Cobalt		1.0		**528**	500.0	0	105.7	80	120	03/22/2023

Batch 204109 **SampType:** MS Units µg/L
SampID: 23020845-016CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**671**	500.0	198.9	94.4	75	125	03/22/2023

Batch 204109 **SampType:** MSD Units µg/L RPD Limit: **20**
SampID: 23020845-016CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron		25.0		**661**	500.0	198.9	92.4	671.0	1.50	03/22/2023

SW-846 7470A (DISSOLVED)

Batch 203471 **SampType:** MBLK Units µg/L
SampID: MBLK-203471

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**< 0.20**	0.0550	0	0	-100	100	03/03/2023

Batch 203471 **SampType:** LCS Units µg/L
SampID: LCS-203471

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**4.84**	5.000	0	96.9	85	115	03/03/2023

Batch 203471 **SampType:** MS Units µg/L
SampID: 23020845-039EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**5.04**	5.000	0	100.7	75	125	03/06/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

SW-846 7470A (DISSOLVED)

Batch 203471 **SampType:** MSD Units µg/L RPD Limit: 15
SampID: 23020845-039EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.20		**5.08**	5.000	0	101.6	5.036	0.84	03/06/2023

SW-846 7470A (TOTAL)

Batch 203469 **SampType:** MBLK Units µg/L
SampID: MBLK-203469

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**< 0.20**	0.0550	0	0	-100	100	03/06/2023

Batch 203469 **SampType:** LCS Units µg/L
SampID: LCS-203469

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**4.85**	5.000	0	97.0	85	115	03/06/2023

Batch 203469 **SampType:** MS Units µg/L
SampID: 23020845-002DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**5.24**	5.000	0	104.8	75	125	03/06/2023

Batch 203469 **SampType:** MSD Units µg/L RPD Limit: 15
SampID: 23020845-002DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.20		**4.90**	5.000	0	98.1	5.239	6.62	03/06/2023

Batch 203469 **SampType:** MS Units µg/L
SampID: 23020845-013CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**5.35**	5.000	0	106.9	75	125	03/06/2023

Batch 203469 **SampType:** MSD Units µg/L RPD Limit: 15
SampID: 23020845-013CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.20		**5.42**	5.000	0	108.3	5.346	1.30	03/06/2023

Teklab, Inc.
Environmental Laboratory

Quality Control Results

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

SW-846 7470A (TOTAL)

Batch 203470 **SampType:** MBLK Units µg/L
SampID: MBLK-203470

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**< 0.20**	0.0550	0	0	-100	100	03/06/2023

Batch 203470 **SampType:** LCS Units µg/L
SampID: LCS-203470

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**5.06**	5.000	0	101.2	85	115	03/06/2023

Batch 203470 **SampType:** MS Units µg/L
SampID: 23020845-024CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**5.46**	5.000	0	109.2	75	125	03/06/2023

Batch 203470 **SampType:** MSD Units µg/L RPD Limit: **15**
SampID: 23020845-024CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.20		**5.46**	5.000	0	109.2	5.460	0.05	03/06/2023

Batch 203470 **SampType:** MS Units µg/L
SampID: 23020845-036CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**5.30**	5.000	0	106.0	75	125	03/07/2023

Batch 203470 **SampType:** MSD Units µg/L RPD Limit: **15**
SampID: 23020845-036CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.20		**5.30**	5.000	0	106.0	5.300	0.05	03/07/2023

Batch 203471 **SampType:** MS Units µg/L
SampID: 23020845-051DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**5.02**	5.000	0	100.4	75	125	03/06/2023

Batch 203471 **SampType:** MSD Units µg/L RPD Limit: **15**
SampID: 23020845-051DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.20		**4.90**	5.000	0	98.0	5.022	2.45	03/06/2023

Teklab, Inc.
Environmental Laboratory

Receiving Check List

Client: Ramboll
Work Order: 23020845
Client Project: HEN-23Q1
Report Date: 14-Apr-23

Carrier: Joe Riley
Received By: ANC

Completed by: Lindsey Maddox
On: 02-Mar-23

Reviewed by: Elizabeth A. Hurley
On: 02-Mar-23

Pages to follow: Chain of custody: 4 Extra pages included: 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 3.2
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☑	Lab ☐	NA ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

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

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

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

pH strip #87147/79929. - TSM/lmaddox - 3/2/2023 8:53:12 AM

Additional Sodium Hydroxide (81662) was needed in 02, 07, 08, 10, 12, 13, 16, 17, 05R, 08D, 18D, 06, 15, and 08 Duplicate upon arrival at the laboratory. - lmaddox - 3/2/2023 10:13:57 AM

Additional Nitric Acid (87873) was needed in 08D and 08 Duplicate upon arrival at the laboratory. - lmaddox - 3/2/2023 10:15:51 AM

Additional Sulfuric Acid (86787) was needed in 08 upon arrival at the laboratory. - lmaddox - 3/2/2023 10:22:00 AM

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Vistra Corp	Report To:	Brian Voelker	Attention:	Jason Stuckey
Address:	13498 E. 900th St	Copy To:	Jason Stuckey	Company Name:	Vistra Corp
				Address:	see Section A
Email To:	Brian.Voelker@VistraCorp.com	Purchase Order No.:		Quote Reference:	
Phone:	(217) 753-8911 Fax:	Project Name:		Project Manager:	
Requested Due Date/TAT:	10 day	Project Number:	2285	Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

ITEM #	Section D Required Client Information — 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 DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_WPCP_East	HEN_WPCP_West	East Group 1	East Group 2	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	* — 02			03/01/23	1423												✓							✓	✓				23020845-001
2	* — 07			03/01/23	1616												✓	✓	✓			✓		✓		✓			002
3	* X — 08			03/01/23	1501												✓	✓	✓		✓	✓		✓			✓		003
4	* *TE — 10			03/01/23	0417																✓			✓			✓		004
5	* *TE — 12			03/01/23	1046														✓		✓						✓		005
6	* *TE — 13			03/01/23	1028														✓		✓						✓		006
7	* — 16			02/25/23	1557												✓		✓						✓				007
8	* — 17			02/26/23	1614												✓		✓						✓				008
9	— 22 1128			02/25/23	~~1142~~															✓			✓		✓				009
10	— 23			02/25/23	1035															✓			✓		✓				010
11	— 25			02/28/23	1435															✓			✓						011
12	— 26			02/28/23	1436															✓			✓						012
13	— 27			02/26/23	1347															✓			✓		✓				013
14	— 30			02/28/23	1249															✓			✓						014
15	— 31			02/26/23	1250															✓			✓						015
16	— 32			02/28/23	1306															✓			✓		✓				016

Valid Matrix Codes

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

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
HEN-23Q1 Rev 0		03/01/23	0900	William Colin	3/2/23	800

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
3.2	Y	N	~~N~~ Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Kidd

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 03/02/23

TE
EAH
3/23/23

HS present in FB(213)

* Added HNO_3(878573)
* Added NaOH(81662)
x Added H_2SO_4(86757)

3.2 #5
PH: 87147/79929 LM
TSM 312

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:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

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

Section C Invoice Information:

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

REGULATORY AGENCY

NPDES | GROUND WATER | DRINKING WATER
UST | RCRA | OTHER

Site Location STATE: IL

Section D Required Client Information

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

Valid Matrix Codes

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_WPCP_East	HEN_WPCP_West	East Group 1	East Group 2	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	33			02/28/23	1315															✓			✓						23020845-017
2	34			02/28/23	1421															✓			✓		✓				018
3	35			02/28/23	1233															✓			✓		✓				019
4	36			02/28/23	1220															✓			✓						020
5	46			02/28/23	1634														✓										021
6	47			03/01/23	0937														✓										022
7	48			03/01/23	1214											✓													023
8	49			02/28/23	1101															✓			✓		✓				024
9	50			02/28/23	1210															✓			✓		✓				025
10	51			02/28/23	1003															✓			✓		✓				026
11	52			02/28/23	1659														✓										027
12	54			03/01/23	0959														✓										028
13	55			02/28/23	1645														✓										029
14	03R			03/01/23	1326												✓					✓		✓		✓			030
15	05DR			03/01/23	1257											✓					✓						✓		031
16	05R			03/01/23	1226											✓					✓						✓		032

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
HEN-23Q1 Rev 0	Joe Ridley	03/07/23	0805	Allison Colin	3/2/23	800	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Ridley

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 03/07/23

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

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:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

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

Section C Invoice Information:

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

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

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

Valid Matrix Codes

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_WPCP_East	HEN_WPCP_West	East Group 1	East Group 2	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	08D			03/01/23	1442												✓	✓	✓		✓	✓		✓		✓			23020845-033
2	18D			03/01/23	1304													✓				✓		✓	✓				034
3	18S			03/01/23	1253													✓				✓		✓	✓				035
4	21R			02/28/23	0915															✓			✓		✓				036
5	22D			02/28/23	1144															✓			✓		✓				037
6	40S			03/01/23	1200												✓					✓					✓		038
7	45S			03/01/23	1350													✓					✓		✓				039
8	SG02			03/02/23	0730		0										✓	✓	✓	✓	✓	✓	✓	✓	✓				040
9	XPW01			02/28/23	1514														✓										041
10	XPW02 03/01/23			~~03/01/23~~	0813														✓										042
11	XPW03			03/01/23	1537														✓										043
12	XSG01			02/28/23	1630		0												✓										044
13	04R			03/01/23	1120																					✓			045
14	06			03/01/23	1408																					✓			046
15	15			03/01/23	1107																					✓			047
16	19D			03/01/23	1148																					✓			048

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
HEN-23Q1 Rev 0	Joe Tekla	03/02/23	0800	Allison Colin	3/2/23	800	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Tekla

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 03/02/23

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Vistra Corp	Report To:	Brian Voelker	Attention:	Jason Stuckey
Address:	13498 E. 900th St	Copy To:	Jason Stuckey	Company Name:	Vistra Corp
				Address:	see Section A
Email To:	Brian.Voelker@VistraCorp.com	Purchase Order No.:		Quote Reference:	
Phone:	(217) 753-8911 Fax:	Project Name:		Project Manager:	
Requested Due Date/TAT:	10 day	Project Number:	2285	Profile #:	

REGULATORY AGENCY

NPDES | GROUND WATER | DRINKING WATER
UST | RCRA | OTHER

Site Location STATE: IL

Section D Required Client Information

Valid Matrix Codes

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

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_WPCP_East	HEN_WPCP_West	East Group 1	East Group 2	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	19S			03/01/23	1134 JR																				✓			2302845-049
2	** 08 Duplicate			03/01/23	1501												✓	✓	✓		✓	✓		✓		✓			050
3	Field Blank			03/01/23	1701												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		051
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													
13																													
14																													
15																													
16																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
HEN-23Q1 Rev 0	Tetra Tech	03/02/23	1800	William Colin	3/2/23	800	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Riley

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 03/02/23

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 3/1/2023 Time: 1616

WELL INFORMATION

Well ID: 07
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	16:04		68.85								
	16:07	0.13	68.85	0	11.2	7.32	1464	3.36	1.99	137.6	
	16:10	0.26	68.85	0	11.3	7.04	1470	2.96	0	149.4	
	16:13	0.39	68.85	0	11.3	6.98	1463	2.97	0	155.7	
	16:16	0.52	68.85	0	11.2	6.96	1467	2.69	0	161.2	

NOTES (continued)

Bladder Pump / Clear /No Color / No odor

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units

☐ ☐
☐ ☐

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 3/1/2023 Time: 1501

WELL INFORMATION

Well ID: 08
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	14:52		54.2								
	14:55	0.13	54.2	0	13.1	6.74	2384	2.04	0	164.5	
	14:58	0.26	54.2	0	13.1	6.69	2418	0.56	0	162.7	
	15:01	0.39	54.2	0	13.1	6.67	2438	0.52	0	161	

NOTES (continued)

Bladder Pump / Clear /No Color / No odor

ABBREVIATIONS

Cond. - Actual Conductivity ORP - Oxidation-Reduction Potential SEC - Specific Electrical
FT BTOC - Feet Below Top of Casing na - Conductance SU - Standard Units

☐ ☐
☐ ☐

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 3/1/2023 Time: 1442

WELL INFORMATION

Well ID: 08D
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	14:30		54.27								
	14:36	0.39	54.27	0	13.3	6.48	3177	0.51	1.01	166.4	
	14:39	0.52	54.27	0	13.3	6.48	3181	0.36	0	161	
	14:42	0.65	54.27	0	13.3	6.48	3178	0.32	0	158.6	

NOTES (continued)

Bladder Pump / Clear /No Color / No odor

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
ORP - Oxidation-Reduction Potential
na - SEC - Specific Electrical Conductance
SU - Standard Units

☐ ☐
☐ ☐

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 2/28/2023 Time: 1557

WELL INFORMATION

Well ID: 16
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	15:42		54.86								
	15:48	0.26	54.86	0	17.8	7.41	1257	0.33	0	49.2	
	15:51	0.39	54.86	0	17.8	7.34	1256	0.3	0	52.3	
	15:54	0.52	54.86	0	17.8	7.28	1257	0.27	0	55.7	
	15:57	0.65	54.86	0	17.8	7.25	1255	0.26	0	57.7	

NOTES (continued)

Bladder Pump / Clear /No Color / Slight odor

ABBREVIATIONS

Cond. - Actual Conductivity ORP - Oxidation-Reduction Potential SEC - Specific Electrical Conductance SU - Standard Units
FT BTOC - Feet Below Top of Casing na -

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WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 2/28/2023 Time: 1614

WELL INFORMATION

Well ID: 17
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	16:05		59.08								
	16:08	0.13	59.08	0	14.6	7.09	1509	2.33	0	115.7	
	16:11	0.26	59.08	0	14.6	7.04	1504	2.24	0	116.6	
	16:14	0.39	59.08	0	14.6	7.01	1505	2.22	0	118	

NOTES (continued)

Bladder Pump / Clear /No Color / Slight odor

ABBREVIATIONS

Cond. - Actual Conductivity ORP - Oxidation-Reduction Potential SEC - Specific Electrical
FT BTOC - Feet Below Top of Casing na - Conductance SU - Standard Units

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WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 3/1/2023 Time: 1237

WELL INFORMATION

Well ID: 05DR
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	12:28		41.2								
	12:31	0.13	41.2	0	15.6	7.42	1105	6.4	1.89	176.3	
	12:34	0.26	41.2	0	16.1	7.37	1115	2.5	0.44	177.6	
	12:37	0.39	41.2	0	16	7.34	1117	1.79	0	175.9	

NOTES (continued)

Bladder Pump / Clear /No Color / No odor

ABBREVIATIONS

Cond. - Actual Conductivity ORP - Oxidation-Reduction Potential SEC - Specific Electrical Conductance SU - Standard Units
FT BTOC - Feet Below Top of Casing na -

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 3/1/2023 Time: 1226

WELL INFORMATION

Well ID: 05R
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	12:17		41.26								
	12:20	0.13	41.26	0	16.5	7.54	1112	0.67	4.02	168.5	
	12:23	0.26	41.26	0	16.6	7.53	1112	0.38	5.16	165.5	
	12:26	0.39	41.26	0	16.6	7.51	1110	0.32	1.93	161.6	

NOTES (continued)

Bladder Pump / Clear /No Color / No odor

ABBREVIATIONS

Cond. - Actual Conductivity ORP - Oxidation-Reduction Potential SEC - Specific Electrical Conductance SU - Standard Units
FT BTOC - Feet Below Top of Casing na -

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WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 3/1/2023 Time: 1200

WELL INFORMATION

Well ID: 40S
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	11:51		40.55								
	11:54	0.13	40.55	0	16.1	7.68	1042	0.7	0.26	164.9	
	11:57	0.26	40.55	0	16.3	7.69	1043	0.4	0.21	160.5	
	12:00	0.39	40.55	0	16.3	7.69	1044	0.33	0.43	157.1	

NOTES (continued)

Bladder Pump / Clear /No Color / No odor

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
ORP - Oxidation-Reduction Potential
na - SEC - Specific Electrical Conductance
SU - Standard Units

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WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 3/1/2023 Time: 1214

WELL INFORMATION

Well ID: 48
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	12:05		40.24								
	12:08	0.13	40.24	0	16.7	7.51	1103	0.56	33.95	169.8	
	12:11	0.26	40.24	0	16.7	7.5	1106	0.38	6.28	166.7	
	12:14	0.39	40.24	0	16.8	7.49	1107	0.33	3.73	163.8	

NOTES (continued)

Bladder Pump / Clear /No Color / No odor

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units

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WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin Client: Vistra
Project Number: 23010001 Task #: Start Date: 1/11/2023 Time: 11:00

Field Personnel: J. Riley / J. Colp Finish Date: 3/1/2023 Time: 1501

WELL INFORMATION

Well ID: 08DUP
Casing ID: inches

EVENT TYPE

Well Development
Well Volume Approach Sampling
Low-Flow / Low Stress Sampling Other
(Specify):Low Flow

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	14:52		54.2								
	14:55	0.13	54.2	0	13.1	6.74	2384	2.04	0	164.5	
	14:58	0.26	54.2	0	13.1	6.69	2418	0.56	0	162.7	
	15:01	0.39	54.2	0	13.1	6.67	2438	0.52	0	161	

NOTES (continued)

Bladder Pump / Clear /No Color / No odor

ABBREVIATIONS

Cond. - Actual Conductivity ORP - Oxidation-Reduction Potential SEC - Specific Electrical Conductance SU - Standard Units
FT BTOC - Feet Below Top of Casing na -

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ANALYTICAL REPORT

PREPARED FOR

Attn: Brian Voelker
Vistra Energy Corp
133 S 4th, Suite 206
Springfield, Illinois 62701

Generated 11/16/23 13:57:33 Revision 1

JOB DESCRIPTION

HEN-23Q3
HEN_257_801

JOB NUMBER

500-238579-11

Eurofins Chicago
2417 Bond Street
University Park IL 60484

See page two for job notes and contact information.

Eurofins Chicago

Job Notes

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Job ID: 500-238579-11

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-238579-11

Revision
The report being provided is a revision of the original report sent on 11/07/23. The report (revision 1) is being revised due to: Missing COCs. Please remove all "Alkalinity (SM 2320B)" results. Report Fluoride results by SM4500 instead of 300.0 for sample 9 (HEN_48).

Receipt
The samples were received on 8/23/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 28 coolers at receipt time were 0.1º C, 0.1º C, 0.2º C, 0.3º C, 0.4º C, 0.5º C, 0.6º C, 0.7º C, 0.8º C, 1.0º C, 1.2º C, 1.2º C, 1.3º C, 1.3º C, 1.3º C, 1.6º C, 1.7º C, 1.7º C, 1.7º C, 1.7º C, 2.0º C, 2.0º C, 2.0º C, 2.8º C, 2.9º C, 2.9º C, 3.0º C and 3.7º C.

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

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

General Chemistry
Methods 300.0: The method blank for analytical batch 500-731549 contained Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method SM 4500 F C: The following sample was analyzed outside of analytical holding time per client request: HEN_48 (500-238579-9).

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

Method Summary

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CHI
SM 4500 F C	Fluoride	SM	EET CHI
Field Sampling	Field Sampling	EPA	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-238579-9	HEN_48	Water	08/23/23 10:20	08/24/23 09:38
500-238579-10	HEN_05!R	Water	08/23/23 11:30	08/24/23 09:38
500-238579-11	HEN_05&DR	Water	08/23/23 11:45	08/24/23 09:38
500-238579-12	HEN_40#S	Water	08/23/23 09:05	08/24/23 09:38
500-238579-28	HEN_07	Water	08/24/23 14:00	08/25/23 09:32
500-238579-30	HEN_08	Water	08/24/23 15:10	08/25/23 09:32
500-238579-32	HEN_08&D	Water	08/24/23 12:25	08/25/23 09:32
500-238579-34	HEN_08_FD	Water	08/24/23 15:10	08/25/23 09:32
500-238579-58	HEN_16	Water	08/28/23 08:35	08/28/23 15:00
500-238579-59	HEN_17	Water	08/28/23 09:40	08/28/23 15:00
500-238579-60	HEN_17-FD	Water	08/28/23 09:40	08/28/23 15:00

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_48

Date Collected: 08/23/23 10:20
Date Received: 08/24/23 09:38

Lab Sample ID: 500-238579-9

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.050	0.013	mg/L		08/29/23 08:50	10/04/23 23:39	1
Calcium	64		0.20	0.044	mg/L		08/29/23 08:50	09/05/23 15:20	1
Magnesium	25		0.20	0.049	mg/L		08/29/23 08:50	09/05/23 15:20	1
Potassium	5.2		0.50	0.11	mg/L		08/29/23 08:50	09/05/23 15:20	1
Sodium	44		0.20	0.077	mg/L		08/29/23 08:50	10/04/23 23:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	74		5.0	0.58	mg/L			08/29/23 02:59	5
Sulfate (EPA 300.0)	100		5.0	1.0	mg/L			08/29/23 02:59	5
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	170		5.0	3.7	mg/L			08/28/23 18:00	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/28/23 18:00	1
Total Dissolved Solids (SM 2540C)	490		10	4.3	mg/L			08/28/23 21:00	1
Fluoride (SM 4500 F C)	0.19	H	0.10	0.056	mg/L			11/15/23 13:25	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.62				SU			08/23/23 10:20	1
Field Temperature	20.8				Degrees C			08/23/23 10:20	1
Oxidation Reduction Potential	147.4				millivolts			08/23/23 10:20	1
Oxygen, Dissolved	0.11				mg/L			08/23/23 10:20	1
Specific Conductance	589				umhos/cm			08/23/23 10:20	1
Turbidity	2.01				NTU			08/23/23 10:20	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_05!R

Date Collected: 08/23/23 11:30
Date Received: 08/24/23 09:38

Lab Sample ID: 500-238579-10

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.51		0.050	0.013	mg/L		08/29/23 08:50	10/04/23 23:43	1
Calcium	77		0.20	0.044	mg/L		08/29/23 08:50	09/05/23 15:23	1
Magnesium	31		0.20	0.049	mg/L		08/29/23 08:50	09/05/23 15:23	1
Potassium	8.2		0.50	0.11	mg/L		08/29/23 08:50	09/05/23 15:23	1
Sodium	41		0.20	0.077	mg/L		08/29/23 08:50	10/04/23 23:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	82		5.0	0.58	mg/L			08/29/23 03:29	5
Fluoride (EPA 300.0)	0.21	J	1.0	0.19	mg/L			08/29/23 03:14	1
Sulfate (EPA 300.0)	73		5.0	1.0	mg/L			08/29/23 03:29	5
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	230		5.0	3.7	mg/L			08/28/23 18:09	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/28/23 18:09	1
Total Dissolved Solids (SM 2540C)	530		10	4.3	mg/L			08/28/23 21:02	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	38.69				ft			08/23/23 11:30	1
Field pH	7.62				SU			08/23/23 11:30	1
Field Temperature	20.3				Degrees C			08/23/23 11:30	1
Oxidation Reduction Potential	144.2				millivolts			08/23/23 11:30	1
Oxygen, Dissolved	0.14				mg/L			08/23/23 11:30	1
Specific Conductance	644				umhos/cm			08/23/23 11:30	1
Turbidity	3.55				NTU			08/23/23 11:30	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_05&DR

Date Collected: 08/23/23 11:45
Date Received: 08/24/23 09:38

Lab Sample ID: 500-238579-11

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.68		0.050	0.013	mg/L		08/29/23 08:50	10/04/23 23:47	1
Calcium	73		0.20	0.044	mg/L		08/29/23 08:50	09/05/23 15:26	1
Magnesium	28		0.20	0.049	mg/L		08/29/23 08:50	09/05/23 15:26	1
Potassium	6.2		0.50	0.11	mg/L		08/29/23 08:50	09/05/23 15:26	1
Sodium	44		0.20	0.077	mg/L		08/29/23 08:50	10/04/23 23:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	76		5.0	0.58	mg/L			08/29/23 04:00	5
Fluoride (EPA 300.0)	0.24	J	1.0	0.19	mg/L			08/29/23 03:44	1
Sulfate (EPA 300.0)	75		5.0	1.0	mg/L			08/29/23 04:00	5
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	230		5.0	3.7	mg/L			08/28/23 18:18	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/28/23 18:18	1
Total Dissolved Solids (SM 2540C)	490		10	4.3	mg/L			08/28/23 21:05	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	38.73				ft			08/23/23 11:45	1
Field pH	7.41				SU			08/23/23 11:45	1
Field Temperature	20.4				Degrees C			08/23/23 11:45	1
Oxidation Reduction Potential	158.8				millivolts			08/23/23 11:45	1
Oxygen, Dissolved	0.15				mg/L			08/23/23 11:45	1
Specific Conductance	631				umhos/cm			08/23/23 11:45	1
Turbidity	2.12				NTU			08/23/23 11:45	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_40#S
Date Collected: 08/23/23 09:05
Date Received: 08/24/23 09:38

Lab Sample ID: 500-238579-12
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.050	0.013	mg/L		08/29/23 08:50	10/04/23 23:50	1
Calcium	58		0.20	0.044	mg/L		08/29/23 08:50	09/05/23 15:30	1
Magnesium	27		0.20	0.049	mg/L		08/29/23 08:50	09/05/23 15:30	1
Potassium	6.3		0.50	0.11	mg/L		08/29/23 08:50	09/05/23 15:30	1
Sodium	41		0.20	0.077	mg/L		08/29/23 08:50	10/04/23 23:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	73		5.0	0.58	mg/L			08/29/23 05:00	5
Fluoride (EPA 300.0)	0.24	J	1.0	0.19	mg/L			08/29/23 04:45	1
Sulfate (EPA 300.0)	92		5.0	1.0	mg/L			08/29/23 05:00	5
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	170		5.0	3.7	mg/L			08/28/23 18:27	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/28/23 18:27	1
Total Dissolved Solids (SM 2540C)	480		10	4.3	mg/L			08/28/23 21:08	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	37.92				ft			08/23/23 09:05	1
Field pH	7.88				SU			08/23/23 09:05	1
Field Temperature	18.8				Degrees C			08/23/23 09:05	1
Oxidation Reduction Potential	133.5				millivolts			08/23/23 09:05	1
Oxygen, Dissolved	0.37				mg/L			08/23/23 09:05	1
Specific Conductance	579				umhos/cm			08/23/23 09:05	1
Turbidity	2.13				NTU			08/23/23 09:05	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_07

Date Collected: 08/24/23 14:00
Date Received: 08/25/23 09:32

Lab Sample ID: 500-238579-28

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.067		0.050	0.013	mg/L		09/01/23 08:58	10/05/23 02:41	1
Calcium	94	B	0.20	0.044	mg/L		09/01/23 08:58	10/05/23 02:41	1
Magnesium	32		0.20	0.049	mg/L		09/01/23 08:58	10/05/23 02:41	1
Potassium	2.7		0.50	0.11	mg/L		09/01/23 08:58	10/05/23 02:41	1
Sodium	68	B	0.20	0.077	mg/L		09/01/23 08:58	10/05/23 02:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	51		5.0	0.58	mg/L			08/29/23 21:35	5
Fluoride (EPA 300.0)	0.24	J	1.0	0.19	mg/L			08/29/23 21:20	1
Sulfate (EPA 300.0)	67		5.0	1.0	mg/L			08/29/23 21:35	5
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	390		5.0	3.7	mg/L			08/30/23 16:36	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/30/23 16:36	1
Total Dissolved Solids (SM 2540C)	640		10	4.3	mg/L			08/30/23 11:27	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	68.39				ft			08/24/23 14:00	1
Field pH	6.91				SU			08/24/23 14:00	1
Field Temperature	13.8				Degrees C			08/24/23 14:00	1
Oxidation Reduction Potential	179.9				millivolts			08/24/23 14:00	1
Oxygen, Dissolved	4.15				mg/L			08/24/23 14:00	1
Specific Conductance	699				umhos/cm			08/24/23 14:00	1
Turbidity	3.55				NTU			08/24/23 14:00	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_08

Date Collected: 08/24/23 15:10
Date Received: 08/25/23 09:32

Lab Sample ID: 500-238579-30

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.070		0.050	0.013	mg/L		09/01/23 08:58	10/05/23 02:44	1
Calcium	160	B	0.20	0.044	mg/L		09/01/23 08:58	10/05/23 02:44	1
Magnesium	41		0.20	0.049	mg/L		09/01/23 08:58	10/05/23 02:44	1
Potassium	7.7		0.50	0.11	mg/L		09/01/23 08:58	10/05/23 02:44	1
Sodium	120	B	0.20	0.077	mg/L		09/01/23 08:58	10/05/23 02:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	240		10	1.2	mg/L			08/29/23 22:36	10
Fluoride (EPA 300.0)	0.19	J	1.0	0.19	mg/L			08/29/23 21:50	1
Sulfate (EPA 300.0)	100		10	2.1	mg/L			08/29/23 22:36	10
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	500		5.0	3.7	mg/L			08/30/23 16:45	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/30/23 16:45	1
Total Dissolved Solids (SM 2540C)	1100		10	4.3	mg/L			08/30/23 11:30	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.72				SU			08/24/23 15:10	1
Field Temperature	14.7				Degrees C			08/24/23 15:10	1
Oxidation Reduction Potential	188.6				millivolts			08/24/23 15:10	1
Oxygen, Dissolved	1.16				mg/L			08/24/23 15:10	1
Specific Conductance	1241				umhos/cm			08/24/23 15:10	1
Turbidity	3.49				NTU			08/24/23 15:10	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_08&D

Date Collected: 08/24/23 12:25
Date Received: 08/25/23 09:32

Lab Sample ID: 500-238579-32

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.051		0.050	0.013	mg/L		09/01/23 08:58	10/05/23 02:48	1
Calcium	200	B	0.20	0.044	mg/L		09/01/23 08:58	10/05/23 02:48	1
Magnesium	56		0.20	0.049	mg/L		09/01/23 08:58	10/05/23 02:48	1
Potassium	2.9		0.50	0.11	mg/L		09/01/23 08:58	10/05/23 02:48	1
Sodium	130	B	0.20	0.077	mg/L		09/01/23 08:58	10/05/23 02:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	310		10	1.2	mg/L			08/29/23 23:06	10
Fluoride (EPA 300.0)	<1.0		1.0	0.19	mg/L			08/29/23 22:51	1
Sulfate (EPA 300.0)	170		10	2.1	mg/L			08/29/23 23:06	10
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	500		5.0	3.7	mg/L			08/30/23 16:56	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/30/23 16:56	1
Total Dissolved Solids (SM 2540C)	1400		10	4.3	mg/L			08/30/23 11:33	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.59				SU			08/24/23 12:25	1
Field Temperature	17.3				Degrees C			08/24/23 12:25	1
Oxidation Reduction Potential	192.0				millivolts			08/24/23 12:25	1
Oxygen, Dissolved	0.63				mg/L			08/24/23 12:25	1
Specific Conductance	1435				umhos/cm			08/24/23 12:25	1
Turbidity	4.32				NTU			08/24/23 12:25	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_08_FD

Date Collected: 08/24/23 15:10
Date Received: 08/25/23 09:32

Lab Sample ID: 500-238579-34

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.055		0.050	0.013	mg/L		09/01/23 08:58	10/05/23 02:59	1
Calcium	160	B	0.20	0.044	mg/L		09/01/23 08:58	10/05/23 02:59	1
Magnesium	42		0.20	0.049	mg/L		09/01/23 08:58	10/05/23 02:59	1
Potassium	7.8		0.50	0.11	mg/L		09/01/23 08:58	10/05/23 02:59	1
Sodium	120	B	0.20	0.077	mg/L		09/01/23 08:58	10/05/23 02:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	230		10	1.2	mg/L			08/29/23 23:37	10
Fluoride (EPA 300.0)	<1.0		1.0	0.19	mg/L			08/29/23 23:21	1
Sulfate (EPA 300.0)	110		10	2.1	mg/L			08/29/23 23:37	10
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	500		5.0	3.7	mg/L			08/30/23 17:06	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/30/23 17:06	1
Total Dissolved Solids (SM 2540C)	1100		10	4.3	mg/L			08/30/23 11:36	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.72				SU			08/24/23 15:10	1
Field Temperature	14.7				Degrees C			08/24/23 15:10	1
Oxidation Reduction Potential	188.6				millivolts			08/24/23 15:10	1
Oxygen, Dissolved	1.16				mg/L			08/24/23 15:10	1
Specific Conductance	1241				umhos/cm			08/24/23 15:10	1
Turbidity	3.49				NTU			08/24/23 15:10	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_16

Date Collected: 08/28/23 08:35
Date Received: 08/28/23 15:00

Lab Sample ID: 500-238579-58

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.11		0.050	0.013	mg/L		09/01/23 08:58	10/05/23 04:19	1
Calcium	73	B	0.20	0.044	mg/L		09/01/23 08:58	10/05/23 04:19	1
Magnesium	25		0.20	0.049	mg/L		09/01/23 08:58	10/05/23 04:19	1
Potassium	4.7		0.50	0.11	mg/L		09/01/23 08:58	10/05/23 04:19	1
Sodium	51	B	0.20	0.077	mg/L		09/01/23 08:58	10/05/23 04:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	81		5.0	0.58	mg/L			08/30/23 18:06	5
Fluoride (EPA 300.0)	0.31	J	1.0	0.19	mg/L			08/30/23 17:51	1
Sulfate (EPA 300.0)	56		5.0	1.0	mg/L			08/30/23 18:06	5
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	230		5.0	3.7	mg/L			08/31/23 18:25	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/31/23 18:25	1
Total Dissolved Solids (SM 2540C)	450		10	4.3	mg/L			08/31/23 23:12	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	53.9				ft			08/28/23 08:35	1
Field pH	7.23				SU			08/28/23 08:35	1
Field Temperature	22.8				Degrees C			08/28/23 08:35	1
Oxidation Reduction Potential	122.7				millivolts			08/28/23 08:35	1
Oxygen, Dissolved	0.37				mg/L			08/28/23 08:35	1
Specific Conductance	556				umhos/cm			08/28/23 08:35	1
Turbidity	3.99				NTU			08/28/23 08:35	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_17

Date Collected: 08/28/23 09:40
Date Received: 08/28/23 15:00

Lab Sample ID: 500-238579-59

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.076		0.050	0.013	mg/L		09/01/23 09:05	10/04/23 22:08	1
Calcium	58		0.20	0.044	mg/L		09/01/23 09:05	09/05/23 19:28	1
Magnesium	26		0.20	0.049	mg/L		09/01/23 09:05	09/05/23 19:28	1
Potassium	4.4		0.50	0.11	mg/L		09/01/23 09:05	09/05/23 19:28	1
Sodium	55	B	0.20	0.077	mg/L		09/01/23 09:05	10/04/23 22:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	80		5.0	0.58	mg/L			08/30/23 18:37	5
Fluoride (EPA 300.0)	0.36	J	1.0	0.19	mg/L			08/30/23 18:21	1
Sulfate (EPA 300.0)	58		5.0	1.0	mg/L			08/30/23 18:37	5
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	190		5.0	3.7	mg/L			08/31/23 18:35	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/31/23 18:35	1
Total Dissolved Solids (SM 2540C)	420		10	4.3	mg/L			08/31/23 23:19	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	56.12				ft			08/28/23 09:40	1
Field pH	7.34				SU			08/28/23 09:40	1
Field Temperature	22.4				Degrees C			08/28/23 09:40	1
Oxidation Reduction Potential	148.2				millivolts			08/28/23 09:40	1
Oxygen, Dissolved	5.76				mg/L			08/28/23 09:40	1
Specific Conductance	506				umhos/cm			08/28/23 09:40	1
Turbidity	4.02				NTU			08/28/23 09:40	1

Client Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_17-FD

Date Collected: 08/28/23 09:40
Date Received: 08/28/23 15:00

Lab Sample ID: 500-238579-60

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.082		0.050	0.013	mg/L		09/01/23 09:05	10/04/23 22:16	1
Calcium	59		0.20	0.044	mg/L		09/01/23 09:05	09/05/23 19:35	1
Magnesium	27		0.20	0.049	mg/L		09/01/23 09:05	09/05/23 19:35	1
Potassium	4.5		0.50	0.11	mg/L		09/01/23 09:05	09/05/23 19:35	1
Sodium	56	B	0.20	0.077	mg/L		09/01/23 09:05	10/04/23 22:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	80		5.0	0.58	mg/L			08/30/23 19:37	5
Fluoride (EPA 300.0)	0.36	J	1.0	0.19	mg/L			08/30/23 19:22	1
Sulfate (EPA 300.0)	57		5.0	1.0	mg/L			08/30/23 19:37	5
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	190		5.0	3.7	mg/L			08/31/23 18:44	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.0		5.0	3.7	mg/L			08/31/23 18:44	1
Total Dissolved Solids (SM 2540C)	430		10	4.3	mg/L			08/31/23 23:25	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Depth to Water (ft from MP)	56.12				ft			08/28/23 09:40	1
Field pH	7.34				SU			08/28/23 09:40	1
Field Temperature	22.4				Degrees C			08/28/23 09:40	1
Oxidation Reduction Potential	148.2				millivolts			08/28/23 09:40	1
Oxygen, Dissolved	5.76				mg/L			08/28/23 09:40	1
Specific Conductance	506				umhos/cm			08/28/23 09:40	1
Turbidity	4.02				NTU			08/28/23 09:40	1

Definitions/Glossary

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

QC Association Summary

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Metals

Prep Batch: 729866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-9	HEN_48	Total Recoverable	Water	3005A	
500-238579-10	HEN_05!R	Total Recoverable	Water	3005A	
500-238579-11	HEN_05&DR	Total Recoverable	Water	3005A	
500-238579-12	HEN_40#S	Total Recoverable	Water	3005A	
MB 500-729866/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-729866/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 730528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-28	HEN_07	Total Recoverable	Water	3005A	
500-238579-30	HEN_08	Total Recoverable	Water	3005A	
500-238579-32	HEN_08&D	Total Recoverable	Water	3005A	
500-238579-34	HEN_08_FD	Total Recoverable	Water	3005A	
500-238579-58	HEN_16	Total Recoverable	Water	3005A	
MB 500-730528/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-730528/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 730537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-59	HEN_17	Total Recoverable	Water	3005A	
500-238579-60	HEN_17-FD	Total Recoverable	Water	3005A	
MB 500-730537/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-730537/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 731002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-9	HEN_48	Total Recoverable	Water	6020B	729866
500-238579-10	HEN_05!R	Total Recoverable	Water	6020B	729866
500-238579-11	HEN_05&DR	Total Recoverable	Water	6020B	729866
500-238579-12	HEN_40#S	Total Recoverable	Water	6020B	729866
500-238579-59	HEN_17	Total Recoverable	Water	6020B	730537
500-238579-60	HEN_17-FD	Total Recoverable	Water	6020B	730537
MB 500-729866/1-A	Method Blank	Total Recoverable	Water	6020B	729866
MB 500-730537/1-A	Method Blank	Total Recoverable	Water	6020B	730537
LCS 500-729866/2-A	Lab Control Sample	Total Recoverable	Water	6020B	729866
LCS 500-730537/2-A	Lab Control Sample	Total Recoverable	Water	6020B	730537

Analysis Batch: 735519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-9	HEN_48	Total Recoverable	Water	6020B	729866
500-238579-10	HEN_05!R	Total Recoverable	Water	6020B	729866
500-238579-11	HEN_05&DR	Total Recoverable	Water	6020B	729866
500-238579-12	HEN_40#S	Total Recoverable	Water	6020B	729866
500-238579-28	HEN_07	Total Recoverable	Water	6020B	730528
500-238579-30	HEN_08	Total Recoverable	Water	6020B	730528
500-238579-32	HEN_08&D	Total Recoverable	Water	6020B	730528
500-238579-34	HEN_08_FD	Total Recoverable	Water	6020B	730528
500-238579-58	HEN_16	Total Recoverable	Water	6020B	730528
500-238579-59	HEN_17	Total Recoverable	Water	6020B	730537
500-238579-60	HEN_17-FD	Total Recoverable	Water	6020B	730537
MB 500-729866/1-A	Method Blank	Total Recoverable	Water	6020B	729866

QC Association Summary

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Metals (Continued)

Analysis Batch: 735519 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-730528/1-A	Method Blank	Total Recoverable	Water	6020B	730528
MB 500-730537/1-A	Method Blank	Total Recoverable	Water	6020B	730537
LCS 500-729866/2-A	Lab Control Sample	Total Recoverable	Water	6020B	729866
LCS 500-730528/2-A	Lab Control Sample	Total Recoverable	Water	6020B	730528
LCS 500-730537/2-A	Lab Control Sample	Total Recoverable	Water	6020B	730537

General Chemistry

Analysis Batch: 729689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-9	HEN_48	Total/NA	Water	300.0	
500-238579-10	HEN_05!R	Total/NA	Water	300.0	
500-238579-10	HEN_05!R	Total/NA	Water	300.0	
500-238579-11	HEN_05&DR	Total/NA	Water	300.0	
500-238579-11	HEN_05&DR	Total/NA	Water	300.0	
500-238579-12	HEN_40#S	Total/NA	Water	300.0	
500-238579-12	HEN_40#S	Total/NA	Water	300.0	
MB 500-729689/34	Method Blank	Total/NA	Water	300.0	
LCS 500-729689/35	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 729794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-9	HEN_48	Total/NA	Water	SM 2540C	
500-238579-10	HEN_05!R	Total/NA	Water	SM 2540C	
500-238579-11	HEN_05&DR	Total/NA	Water	SM 2540C	
500-238579-12	HEN_40#S	Total/NA	Water	SM 2540C	
MB 500-729794/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-729794/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 729808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-9	HEN_48	Total/NA	Water	SM 2320B	
500-238579-10	HEN_05!R	Total/NA	Water	SM 2320B	
500-238579-11	HEN_05&DR	Total/NA	Water	SM 2320B	
500-238579-12	HEN_40#S	Total/NA	Water	SM 2320B	
MB 500-729808/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-729808/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 729898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-28	HEN_07	Total/NA	Water	300.0	
500-238579-28	HEN_07	Total/NA	Water	300.0	
500-238579-30	HEN_08	Total/NA	Water	300.0	
500-238579-30	HEN_08	Total/NA	Water	300.0	
500-238579-32	HEN_08&D	Total/NA	Water	300.0	
500-238579-32	HEN_08&D	Total/NA	Water	300.0	
500-238579-34	HEN_08_FD	Total/NA	Water	300.0	
500-238579-34	HEN_08_FD	Total/NA	Water	300.0	
MB 500-729898/44	Method Blank	Total/NA	Water	300.0	
LCS 500-729898/45	Lab Control Sample	Total/NA	Water	300.0	

QC Association Summary

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

General Chemistry

Analysis Batch: 730129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-28	HEN_07	Total/NA	Water	SM 2540C	
500-238579-30	HEN_08	Total/NA	Water	SM 2540C	
500-238579-32	HEN_08&D	Total/NA	Water	SM 2540C	
500-238579-34	HEN_08_FD	Total/NA	Water	SM 2540C	
MB 500-730129/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-730129/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 730144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-58	HEN_16	Total/NA	Water	300.0	
500-238579-58	HEN_16	Total/NA	Water	300.0	
500-238579-59	HEN_17	Total/NA	Water	300.0	
500-238579-59	HEN_17	Total/NA	Water	300.0	
500-238579-60	HEN_17-FD	Total/NA	Water	300.0	
500-238579-60	HEN_17-FD	Total/NA	Water	300.0	
MB 500-730144/3	Method Blank	Total/NA	Water	300.0	
LCS 500-730144/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 730242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-28	HEN_07	Total/NA	Water	SM 2320B	
500-238579-30	HEN_08	Total/NA	Water	SM 2320B	
500-238579-32	HEN_08&D	Total/NA	Water	SM 2320B	
500-238579-34	HEN_08_FD	Total/NA	Water	SM 2320B	
MB 500-730242/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-730242/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 730463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-58	HEN_16	Total/NA	Water	SM 2540C	
500-238579-59	HEN_17	Total/NA	Water	SM 2540C	
500-238579-60	HEN_17-FD	Total/NA	Water	SM 2540C	
MB 500-730463/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-730463/2	Lab Control Sample	Total/NA	Water	SM 2540C	
500-238579-58 MS	HEN_16	Total/NA	Water	SM 2540C	
500-238579-58 DU	HEN_16	Total/NA	Water	SM 2540C	
500-238579-59 DU	HEN_17	Total/NA	Water	SM 2540C	

Analysis Batch: 730652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-58	HEN_16	Total/NA	Water	SM 2320B	
500-238579-59	HEN_17	Total/NA	Water	SM 2320B	
500-238579-60	HEN_17-FD	Total/NA	Water	SM 2320B	
MB 500-730652/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-730652/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 742490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-9	HEN_48	Total/NA	Water	SM 4500 F C	
MB 500-742490/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-742490/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	

QC Association Summary

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Field Service / Mobile Lab

Analysis Batch: 731893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-238579-9	HEN_48	Total/NA	Water	Field Sampling	
500-238579-10	HEN_05!R	Total/NA	Water	Field Sampling	
500-238579-11	HEN_05&DR	Total/NA	Water	Field Sampling	
500-238579-12	HEN_40#S	Total/NA	Water	Field Sampling	
500-238579-28	HEN_07	Total/NA	Water	Field Sampling	
500-238579-30	HEN_08	Total/NA	Water	Field Sampling	
500-238579-32	HEN_08&D	Total/NA	Water	Field Sampling	
500-238579-34	HEN_08_FD	Total/NA	Water	Field Sampling	
500-238579-58	HEN_16	Total/NA	Water	Field Sampling	
500-238579-59	HEN_17	Total/NA	Water	Field Sampling	
500-238579-60	HEN_17-FD	Total/NA	Water	Field Sampling	

QC Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-729866/1-A
Matrix: Water
Analysis Batch: 731002

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 729866

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.20		0.20	0.044	mg/L		08/29/23 08:50	09/05/23 14:24	1
Magnesium	<0.20		0.20	0.049	mg/L		08/29/23 08:50	09/05/23 14:24	1
Potassium	<0.50		0.50	0.11	mg/L		08/29/23 08:50	09/05/23 14:24	1

Lab Sample ID: MB 500-729866/1-A
Matrix: Water
Analysis Batch: 735519

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 729866

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.050		0.050	0.013	mg/L		08/29/23 08:50	10/04/23 22:39	1
Sodium	<0.20		0.20	0.077	mg/L		08/29/23 08:50	10/04/23 22:39	1

Lab Sample ID: LCS 500-729866/2-A
Matrix: Water
Analysis Batch: 731002

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 729866

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	10.0	10.2		mg/L		102	80 - 120
Magnesium	10.0	10.4		mg/L		104	80 - 120
Potassium	10.0	9.96		mg/L		100	80 - 120

Lab Sample ID: LCS 500-729866/2-A
Matrix: Water
Analysis Batch: 735519

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 729866

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.00	0.934		mg/L		93	80 - 120
Sodium	10.0	9.62		mg/L		96	80 - 120

Lab Sample ID: MB 500-730528/1-A
Matrix: Water
Analysis Batch: 735519

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 730528

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.050		0.050	0.013	mg/L		09/01/23 08:58	10/05/23 02:29	1
Calcium	0.0704	J	0.20	0.044	mg/L		09/01/23 08:58	10/05/23 02:29	1
Magnesium	<0.20		0.20	0.049	mg/L		09/01/23 08:58	10/05/23 02:29	1
Potassium	<0.50		0.50	0.11	mg/L		09/01/23 08:58	10/05/23 02:29	1
Sodium	0.104	J	0.20	0.077	mg/L		09/01/23 08:58	10/05/23 02:29	1

Lab Sample ID: LCS 500-730528/2-A
Matrix: Water
Analysis Batch: 735519

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 730528

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.00	0.920		mg/L		92	80 - 120
Calcium	10.0	9.67		mg/L		97	80 - 120
Magnesium	10.0	9.71		mg/L		97	80 - 120
Potassium	10.0	10.1		mg/L		101	80 - 120
Sodium	10.0	9.79		mg/L		98	80 - 120

QC Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-730537/1-A
Matrix: Water
Analysis Batch: 731002

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 730537

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.20		0.20	0.044	mg/L		09/01/23 09:05	09/05/23 18:33	1
Magnesium	<0.20		0.20	0.049	mg/L		09/01/23 09:05	09/05/23 18:33	1
Potassium	<0.50		0.50	0.11	mg/L		09/01/23 09:05	09/05/23 18:33	1

Lab Sample ID: MB 500-730537/1-A
Matrix: Water
Analysis Batch: 735519

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 730537

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.050		0.050	0.013	mg/L		09/01/23 09:05	10/04/23 20:49	1
Sodium	0.0814	J	0.20	0.077	mg/L		09/01/23 09:05	10/04/23 20:49	1

Lab Sample ID: LCS 500-730537/2-A
Matrix: Water
Analysis Batch: 731002

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 730537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	10.0	10.0		mg/L		100	80 - 120
Magnesium	10.0	10.2		mg/L		102	80 - 120
Potassium	10.0	9.94		mg/L		99	80 - 120

Lab Sample ID: LCS 500-730537/2-A
Matrix: Water
Analysis Batch: 735519

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 730537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.00	1.01		mg/L		101	80 - 120
Sodium	10.0	10.2		mg/L		102	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-729689/34
Matrix: Water
Analysis Batch: 729689

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.0		1.0	0.12	mg/L			08/28/23 18:23	1
Fluoride	<1.0		1.0	0.19	mg/L			08/28/23 18:23	1
Sulfate	<1.0		1.0	0.21	mg/L			08/28/23 18:23	1

Lab Sample ID: LCS 500-729689/35
Matrix: Water
Analysis Batch: 729689

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.6		mg/L		98	90 - 110
Fluoride	20.0	20.2		mg/L		101	90 - 110
Sulfate	20.0	20.9		mg/L		104	90 - 110

QC Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 500-729898/44
Matrix: Water
Analysis Batch: 729898

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.0		1.0	0.12	mg/L			08/29/23 20:50	1
Fluoride	<1.0		1.0	0.19	mg/L			08/29/23 20:50	1
Sulfate	<1.0		1.0	0.21	mg/L			08/29/23 20:50	1

Lab Sample ID: LCS 500-729898/45
Matrix: Water
Analysis Batch: 729898

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.7		mg/L		98	90 - 110
Fluoride	20.0	20.4		mg/L		102	90 - 110
Sulfate	20.0	20.9		mg/L		104	90 - 110

Lab Sample ID: MB 500-730144/3
Matrix: Water
Analysis Batch: 730144

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.0		1.0	0.12	mg/L			08/30/23 13:15	1
Fluoride	<1.0		1.0	0.19	mg/L			08/30/23 13:15	1
Sulfate	<1.0		1.0	0.21	mg/L			08/30/23 13:15	1

Lab Sample ID: LCS 500-730144/4
Matrix: Water
Analysis Batch: 730144

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.5		mg/L		97	90 - 110
Fluoride	20.0	20.1		mg/L		100	90 - 110
Sulfate	20.0	20.8		mg/L		104	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-729808/3
Matrix: Water
Analysis Batch: 729808

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			08/28/23 15:43	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			08/28/23 15:43	1

Lab Sample ID: LCS 500-729808/4
Matrix: Water
Analysis Batch: 729808

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	92.6		mg/L		93	90 - 110

QC Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 500-730242/3
Matrix: Water
Analysis Batch: 730242

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			08/30/23 15:42	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			08/30/23 15:42	1

Lab Sample ID: LCS 500-730242/4
Matrix: Water
Analysis Batch: 730242

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	90.2		mg/L		90	90 - 110

Lab Sample ID: MB 500-730652/3
Matrix: Water
Analysis Batch: 730652

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			08/31/23 16:08	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			08/31/23 16:08	1

Lab Sample ID: LCS 500-730652/4
Matrix: Water
Analysis Batch: 730652

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	90.8		mg/L		91	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 500-729794/1
Matrix: Water
Analysis Batch: 729794

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	4.3	mg/L			08/28/23 20:37	1

Lab Sample ID: LCS 500-729794/2
Matrix: Water
Analysis Batch: 729794

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	250	232		mg/L		93	80 - 120

Lab Sample ID: MB 500-730129/1
Matrix: Water
Analysis Batch: 730129

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	4.3	mg/L			08/30/23 11:22	1

QC Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 500-730129/2
Matrix: Water
Analysis Batch: 730129

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			250	290		mg/L		116	80 - 120		

Lab Sample ID: MB 500-730463/1
Matrix: Water
Analysis Batch: 730463

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	4.3	mg/L			08/31/23 23:07	1

Lab Sample ID: LCS 500-730463/2
Matrix: Water
Analysis Batch: 730463

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			250	240		mg/L		96	80 - 120		

Lab Sample ID: 500-238579-58 MS
Matrix: Water
Analysis Batch: 730463

Client Sample ID: HEN_16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids	450		250	728		mg/L		111	75 - 125		

Lab Sample ID: 500-238579-58 DU
Matrix: Water
Analysis Batch: 730463

Client Sample ID: HEN_16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	450			430		mg/L				5	5

Lab Sample ID: 500-238579-59 DU
Matrix: Water
Analysis Batch: 730463

Client Sample ID: HEN_17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	420			426		mg/L				0.9	5

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 500-742490/3
Matrix: Water
Analysis Batch: 742490

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.10		0.10	0.056	mg/L			11/15/23 13:14	1

QC Sample Results

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 500-742490/4
Matrix: Water
Analysis Batch: 742490

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	10.0	9.68		mg/L		97	90 - 119

Lab Chronicle

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_48
Date Collected: 08/23/23 10:20
Date Received: 08/24/23 09:38

Lab Sample ID: 500-238579-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			729866	BDE	EET CHI	08/29/23 08:50 - 08/29/23 09:20 [1]
Total Recoverable	Analysis	6020B		1	731002	EH	EET CHI	09/05/23 15:20
Total Recoverable	Prep	3005A			729866	BDE	EET CHI	08/29/23 08:50 - 08/29/23 09:20 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/04/23 23:39
Total/NA	Analysis	300.0		5	729689	W1T	EET CHI	08/29/23 02:59
Total/NA	Analysis	SM 2320B		1	729808	EH	EET CHI	08/28/23 18:00
Total/NA	Analysis	SM 2540C		1	729794	CLB	EET CHI	08/28/23 21:00
Total/NA	Analysis	SM 4500 F C		1	742490	SO	EET CHI	11/15/23 13:25
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/23/23 10:20

Client Sample ID: HEN_05!R
Date Collected: 08/23/23 11:30
Date Received: 08/24/23 09:38

Lab Sample ID: 500-238579-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			729866	BDE	EET CHI	08/29/23 08:50 - 08/29/23 09:20 [1]
Total Recoverable	Analysis	6020B		1	731002	EH	EET CHI	09/05/23 15:23
Total Recoverable	Prep	3005A			729866	BDE	EET CHI	08/29/23 08:50 - 08/29/23 09:20 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/04/23 23:43
Total/NA	Analysis	300.0		1	729689	W1T	EET CHI	08/29/23 03:14
Total/NA	Analysis	300.0		5	729689	W1T	EET CHI	08/29/23 03:29
Total/NA	Analysis	SM 2320B		1	729808	EH	EET CHI	08/28/23 18:09
Total/NA	Analysis	SM 2540C		1	729794	CLB	EET CHI	08/28/23 21:02
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/23/23 11:30

Client Sample ID: HEN_05&DR
Date Collected: 08/23/23 11:45
Date Received: 08/24/23 09:38

Lab Sample ID: 500-238579-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			729866	BDE	EET CHI	08/29/23 08:50 - 08/29/23 09:20 [1]
Total Recoverable	Analysis	6020B		1	731002	EH	EET CHI	09/05/23 15:26
Total Recoverable	Prep	3005A			729866	BDE	EET CHI	08/29/23 08:50 - 08/29/23 09:20 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/04/23 23:47
Total/NA	Analysis	300.0		1	729689	W1T	EET CHI	08/29/23 03:44
Total/NA	Analysis	300.0		5	729689	W1T	EET CHI	08/29/23 04:00
Total/NA	Analysis	SM 2320B		1	729808	EH	EET CHI	08/28/23 18:18
Total/NA	Analysis	SM 2540C		1	729794	CLB	EET CHI	08/28/23 21:05
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/23/23 11:45

Lab Chronicle

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_40#S
Date Collected: 08/23/23 09:05
Date Received: 08/24/23 09:38

Lab Sample ID: 500-238579-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			729866	BDE	EET CHI	08/29/23 08:50 - 08/29/23 09:20 [1]
Total Recoverable	Analysis	6020B		1	731002	EH	EET CHI	09/05/23 15:30
Total Recoverable	Prep	3005A			729866	BDE	EET CHI	08/29/23 08:50 - 08/29/23 09:20 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/04/23 23:50
Total/NA	Analysis	300.0		1	729689	W1T	EET CHI	08/29/23 04:45
Total/NA	Analysis	300.0		5	729689	W1T	EET CHI	08/29/23 05:00
Total/NA	Analysis	SM 2320B		1	729808	EH	EET CHI	08/28/23 18:27
Total/NA	Analysis	SM 2540C		1	729794	CLB	EET CHI	08/28/23 21:08
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/23/23 09:05

Client Sample ID: HEN_07
Date Collected: 08/24/23 14:00
Date Received: 08/25/23 09:32

Lab Sample ID: 500-238579-28
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			730528	BDE	EET CHI	09/01/23 08:58 - 09/01/23 09:28 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/05/23 02:41
Total/NA	Analysis	300.0		1	729898	W1T	EET CHI	08/29/23 21:20
Total/NA	Analysis	300.0		5	729898	W1T	EET CHI	08/29/23 21:35
Total/NA	Analysis	SM 2320B		1	730242	EH	EET CHI	08/30/23 16:36
Total/NA	Analysis	SM 2540C		1	730129	SO	EET CHI	08/30/23 11:27
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/24/23 14:00

Client Sample ID: HEN_08
Date Collected: 08/24/23 15:10
Date Received: 08/25/23 09:32

Lab Sample ID: 500-238579-30
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			730528	BDE	EET CHI	09/01/23 08:58 - 09/01/23 09:28 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/05/23 02:44
Total/NA	Analysis	300.0		1	729898	W1T	EET CHI	08/29/23 21:50
Total/NA	Analysis	300.0		10	729898	W1T	EET CHI	08/29/23 22:36
Total/NA	Analysis	SM 2320B		1	730242	EH	EET CHI	08/30/23 16:45
Total/NA	Analysis	SM 2540C		1	730129	SO	EET CHI	08/30/23 11:30
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/24/23 15:10

Client Sample ID: HEN_08&D
Date Collected: 08/24/23 12:25
Date Received: 08/25/23 09:32

Lab Sample ID: 500-238579-32
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			730528	BDE	EET CHI	09/01/23 08:58 - 09/01/23 09:28 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/05/23 02:48
Total/NA	Analysis	300.0		1	729898	W1T	EET CHI	08/29/23 22:51

Lab Chronicle

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_08&D
Date Collected: 08/24/23 12:25
Date Received: 08/25/23 09:32

Lab Sample ID: 500-238579-32
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		10	729898	W1T	EET CHI	08/29/23 23:06
Total/NA	Analysis	SM 2320B		1	730242	EH	EET CHI	08/30/23 16:56
Total/NA	Analysis	SM 2540C		1	730129	SO	EET CHI	08/30/23 11:33
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/24/23 12:25

Client Sample ID: HEN_08_FD
Date Collected: 08/24/23 15:10
Date Received: 08/25/23 09:32

Lab Sample ID: 500-238579-34
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			730528	BDE	EET CHI	09/01/23 08:58 - 09/01/23 09:28 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/05/23 02:59
Total/NA	Analysis	300.0		1	729898	W1T	EET CHI	08/29/23 23:21
Total/NA	Analysis	300.0		10	729898	W1T	EET CHI	08/29/23 23:37
Total/NA	Analysis	SM 2320B		1	730242	EH	EET CHI	08/30/23 17:06
Total/NA	Analysis	SM 2540C		1	730129	SO	EET CHI	08/30/23 11:36
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/24/23 15:10

Client Sample ID: HEN_16
Date Collected: 08/28/23 08:35
Date Received: 08/28/23 15:00

Lab Sample ID: 500-238579-58
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			730528	BDE	EET CHI	09/01/23 08:58 - 09/01/23 09:28 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/05/23 04:19
Total/NA	Analysis	300.0		1	730144	EH	EET CHI	08/30/23 17:51
Total/NA	Analysis	300.0		5	730144	EH	EET CHI	08/30/23 18:06
Total/NA	Analysis	SM 2320B		1	730652	EH	EET CHI	08/31/23 18:25
Total/NA	Analysis	SM 2540C		1	730463	CLB	EET CHI	08/31/23 23:12
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/28/23 08:35

Client Sample ID: HEN_17
Date Collected: 08/28/23 09:40
Date Received: 08/28/23 15:00

Lab Sample ID: 500-238579-59
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			730537	BDE	EET CHI	09/01/23 09:05 - 09/01/23 09:35 [1]
Total Recoverable	Analysis	6020B		1	731002	EH	EET CHI	09/05/23 19:28
Total Recoverable	Prep	3005A			730537	BDE	EET CHI	09/01/23 09:05 - 09/01/23 09:35 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/04/23 22:08
Total/NA	Analysis	300.0		1	730144	EH	EET CHI	08/30/23 18:21
Total/NA	Analysis	300.0		5	730144	EH	EET CHI	08/30/23 18:37
Total/NA	Analysis	SM 2320B		1	730652	EH	EET CHI	08/31/23 18:35

Lab Chronicle

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Client Sample ID: HEN_17
Date Collected: 08/28/23 09:40
Date Received: 08/28/23 15:00

Lab Sample ID: 500-238579-59
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	730463	CLB	EET CHI	08/31/23 23:19
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/28/23 09:40

Client Sample ID: HEN_17-FD
Date Collected: 08/28/23 09:40
Date Received: 08/28/23 15:00

Lab Sample ID: 500-238579-60
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			730537	BDE	EET CHI	09/01/23 09:05 - 09/01/23 09:35 [1]
Total Recoverable	Analysis	6020B		1	731002	EH	EET CHI	09/05/23 19:35
Total Recoverable	Prep	3005A			730537	BDE	EET CHI	09/01/23 09:05 - 09/01/23 09:35 [1]
Total Recoverable	Analysis	6020B		1	735519	BJH	EET CHI	10/04/23 22:16
Total/NA	Analysis	300.0		1	730144	EH	EET CHI	08/30/23 19:22
Total/NA	Analysis	300.0		5	730144	EH	EET CHI	08/30/23 19:37
Total/NA	Analysis	SM 2320B		1	730652	EH	EET CHI	08/31/23 18:44
Total/NA	Analysis	SM 2540C		1	730463	CLB	EET CHI	08/31/23 23:25
Total/NA	Analysis	Field Sampling		1	731893	DN	EET CHI	08/28/23 09:40

[1] This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Vistra Energy Corp
Project/Site: HEN-23Q3

Job ID: 500-238579-11
SDG: HEN_257_801

Laboratory: Eurofins Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Illinois	NELAP	IL00035	04-29-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Field Sampling		Water	Depth to Water (ft from MP)
Field Sampling		Water	Field pH
Field Sampling		Water	Field Temperature
Field Sampling		Water	Oxidation Reduction Potential
Field Sampling		Water	Oxygen, Dissolved
Field Sampling		Water	Specific Conductance
Field Sampling		Water	Turbidity
SM 2320B		Water	Bicarbonate Alkalinity as CaCO3
SM 2320B		Water	Carbonate Alkalinity as CaCO3

500-238579

CHAIN-OF-CUSTODY / Analytical Request Document

500-238579 COC

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Page 1 of 1

Section A Required Client Information

Company:	Vistra Corp/A3
Address:	
Email To:	Brian.Voelker@VistraCorp.com
Phone	(217) 753-8911
Fax:	
Requested Due Date/TAT	10 day

Section B Required Project Information

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

Section C Invoice Information

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

REGULATORY AGENCY

NPDES | GROUND WATER | DRINKING WATER
UST | RCRA | OTHER

Site Location STATE: IL

Section D Required Client Information

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

Valid Matrix Codes

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D
1	HEN_48			8/23/23	1020												X													SHORT HOLD-NO2
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														
13																														
14																														
15																														
16																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
HEN-23Q3 Rev 0	E.J. Ellan	8/23/23	1700	M.Q. Ellan EETA	8/24/23	0839	Y
	E.J. Ellan	8/24/23	0938	Stephanie Hernandez EETA	8/24/23	0938	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: CHERYL TROMBLY

SIGNATURE of SAMPLER

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

Temp in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Y	Y	Y

Temp = 0.7 -> 0.4

500-238579

CHAIN-OF-CUSTODY / Analytical Request Document

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Page 1 of 1

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information	
Company:	Vistra Corp/A3	Report To	Brian Voelker	Attention	Jason Stuckey
Address	3030 Warrenville Rd Ste 418	Copy To	Jason Stuckey	Company Name:	Vistra Corp
	Lisle IL 60532			Address	see Section A
Email To:	Brian.Voelker@VistraCorp.com	Purchase Order No.		Quote Reference	
Phone:	(217) 753-8911 Fax:	Project Name:		Project Manager:	
Requested Due Date/TAT	10 day	Project Number:	50021987	Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

Valid Matrix Codes

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D
10																Requested Analysis Filtered (Y/N)														
1	HEN_05!R			8/23/23	1130												X				X										
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														
13																														
14																														
15																														
16																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
HEN-23Q3 Rev 0		8/23/23	1700	J.J. Ellian EETA	8/24/23	0939	
	J.J. Ellian EETA	8/24/23	0939	Stephanie Hernandez EETA	8/24/23	0939	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: CHRIS CRENSHAW

SIGNATURE of SAMPLER

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

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Y	Y	Y

Temp = 0.7 → 0.4

CHAIN-OF-CUSTODY / Analytical Request Document

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510-238579

Page 1 of 1

Section A Required Client Information

Company:	Vistra Corp/A3
Address	3030 Warrenville Rd Ste 418
	Lisle IL 60532
Email To	Brian.Voelker@VistraCorp.com
Phone:	(217) 753-8911 Fax.
Requested Due Date/TAT	10 day

Section B Required Project Information

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.	
Project Name:	
Project Number:	50021987

Section C Invoice Information

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

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

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

Valid Matrix Codes

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D
1	HEN_05&DR			8/23/23	1145												X				X										
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														
13																														
14																														
15																														
16																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
HEN-23Q3 Rev 0		8/23/23	1700	EETA	8/24/23	0839
	EETA	8/24/23	0938	EETA	8/24/23	0939

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: CHRIS TREMBLAY
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY): 8/23/23

SAMPLE CONDITIONS			
Temp in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Y	Y	Y

Temp = 07-20.4

1 2 3 4 5 6 7 8 9 10 11 12 13 14

CHAIN-OF-CUSTODY / Analytical Request Document

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500-238579

Page 1 of 1

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information	
Company	Vistra Corp/A3	Report To	Brian Voelker	Attention	Jason Stuckey
Address		Copy To	Jason Stuckey	Company Name	Vistra Corp
				Address	see Section A
Email To	Brian.Voelker@VistraCorp.com	Purchase Order No		Quote Reference	
Phone	(217) 753-8911 Fax	Project Name		Project Manager	
Requested Due Date/TAT	10 day	Project Number	2285	Profile #	

REGULATORY AGENCY		
NPDES	GROUND WATER	DRINKING WATER
US	RCRA	OTHER
Site Location STATE.	IL	

Section D Required Client Information

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

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	W
WATER	W
WASTE WATER	
PRODUCT	
SOIL/SOLID	
OIL	
WIPE	
AIR	AR
OTHER	OT
TISSUE	

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D
12 1	HEN_40#S			8/23/23	0905												X				X										SHORT HOLD-NO2
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															
13																															
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15																															
16																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
HEN-23Q3 Rev 0	[signature]	8/23/23	1700	R.J. Ellis EETA	8/24/23	0839		Y	Y	Y
	R.J. Ellis EETA	8/24/23	0928	Stephanie Hernandez EETA	8/24/23	0938	0.4	ro.1		
							Temp in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chris Thompson

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 8/23/23

500-238579

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page 1 of 1

Section A Required Client Information

Company:	Vistra Corp/A3
Address	3030 Warrenville Rd Ste 418
	Lisle IL 60532
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax
Requested Due Date/TAT	10 day

Section B Required Project Information

Report To	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No	
Project Name	
Project Number:	50021987

Section C Invoice Information

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

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

Valid Matrix Codes

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-804	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D.
1	HEN_07			8/24/23	1400												X	X	X			X	X		X		X	X			SHORT HOLDS-NO2
2	Trip Blank																													Added by EETA 8/25/23 SH
3																														
4																														
5																														
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16																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
HEN-23Q3 Rev 0	Allison Beckett	8/24/23	1700	J. Ellis EETA	8/25/23	0825		Y	Y	Y
	J. Ellis EETA	8/25/23	0932	Stephanie Hernandez EETA	8/25/23	0932				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Allison Beckett

SIGNATURE of SAMPLER: Allison Beckett

DATE Signed (MM/DD/YY): 8/24/23

Temp in C: 32+2.8

Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

500-238579

CHAIN-OF-CUSTODY / Analytical Request Document

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Page 1 of 1

Section A Required Client Information

Company:	Vistra Corp/A3
Address	3030 Warrenville Rd Ste 418
	Lisle IL 60532
Email To:	Brian.Voelker@VistraCorp.com
Phone:	(217) 753-8911 Fax.
Requested Due Date/TAT	10 day

Section B Required Project Information

Report To	Brian Voelker
Copy To.	Jason Stuckey
Purchase Order No.	
Project Name:	
Project Number:	50021987

Section C Invoice Information

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

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

Valid Matrix Codes

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

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D
1	HEN_08			8/24/23	1510												X	X	X		X	X	X		X		X	X			SHORT HOLDS NO2
2	Trip Blank																														Added by EEA 8/25/23 GH
3																															
4																															
5																															
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
HEN-23Q3 Rev 0	Allison Beckett	8/24/23	1700	R. J. Ellis EETA	8/25/23	0825
	R. J. Ellis EETA	8/25/23	0932	Stephanie Hernandez EETA	8/25/23	0932

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Allison Beckett

SIGNATURE of SAMPLER: Allison Beckett DATE Signed (MM/DD/YY): 8/24/23

SAMPLE CONDITIONS			
Temp in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Y	Y	Y

2A+2D

500-238579

CHAIN-OF-CUSTODY / Analytical Request Document

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Page 1 of 1

Section A Required Client Information

Company:	Vistra Corp/A3
Address	
Email To:	Brian.Voelker@VistraCorp.com
Phone	(217) 753-8911 Fax
Requested Due Date/TAT	10 day

Section B Required Project Information

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

Section C Invoice Information

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

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

Valid Matrix Codes

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

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D
1	HEN_08&D			8/24/23	1225												X	X	X		X	X	X		X		X	X			SHORT HOLD-NO2
2	Trip Blank																														Added by EETA 8/25/23 SH
3																															
4																															
5																															
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
HEN-23Q3 Rev 0	Allison Beckett	8/24/23	1700	Stephanie Ellis EETA	8/25/23	0825		Y	Y	Y
	Stephanie Ellis EETA	8/25/23	0932	Stephanie Hernandez EETA	8/25/23	0932				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Allison Beckett

SIGNATURE of SAMPLER: Allison Beckett

DATE Signed (MM/DD/YY): 8/24/23

Temp in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
13+1.0			

500-238579

CHAIN-OF-CUSTODY / Analytical Request Document

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Page 1 of 1

Section A Required Client Information

Company:	Vistra Corp/A3
Address:	3030 Warrenville Rd Ste 418
	Lisle IL 60532
Email To:	Brian.Voelker@VistraCorp.com
Phone:	(217) 753-8911 Fax:
Requested Due Date/TAT	10 day

Section B Required Project Information

Report To	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.	
Project Name.	
Project Number:	50021987

Section C Invoice Information

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

REGULATORY AGENCY

NPDES | GROUND WATER | DRINKING WATER
UST | RCRA | OTHER

Site Location STATE: IL

Section D Required Client Information

Valid Matrix Codes

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

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D
1	HEN_08_FD			8/24/23	1515												X	X	X		X	X	X		X		X	X			SHORT HOLDS -NO2
2	Trip Blank																														Added by EETA 8/25/23 SH
3																															
4																															
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
HEN-23Q3 Rev 0	Allison Bechtel EETA		1700	Stephanie Hernandez EETA	8/25/23	0825		Y	Y	Y
	Stephanie Hernandez EETA	8/25/23	0932	Stephanie Hernandez EETA	8/25/23	0932				

8/25/23

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Allison Bechtel

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 8/24/23

Temp in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.4+2.0			

500-238579

CHAIN-OF-CUSTODY / Analytical Request Document

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Page 1 of 1

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information	
Company:	Vistra Corp/A3	Report To:	Brian Voelker	Attention	Jason Stuckey
Address	3030 Warrenville Rd Ste 418	Copy To:	Jason Stuckey	Company Name:	Vistra Corp
	Lisle IL 60532			Address	see Section A
Email To:	Brian.Voelker@VistraCorp.com	Purchase Order No.		Quote Reference	
Phone:	(217) 753-8911 Fax	Project Name:		Project Manager	
Requested Due Date/TAT	10 day	Project Number:	50021987	Profile #:	

REGULATORY AGENCY			
NPDES	GROUND WATER	DRINKING WATER	
UST	RCRA	OTHER	
Site Location STATE:	IL		

Section D Required Client Information

Valid Matrix Codes

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

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D
1	HEN_16			8/28/23	0835												X		X				X				X				SHORT HOLDS-NO2
2																														
3																														
4																														
5																														
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13																														
14																														
15																														
16																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
HEN-23Q3 Rev 0	Allison Beckett	8/28/23	1500	EETA	8/28/23	1500	

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER	Allison Beckett		Temp in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
SIGNATURE of SAMPLER	Beckett	DATE Signed (MM/DD/YY): 8/28/23	2.1→1.7			

500-238579

CHAIN-OF-CUSTODY / Analytical Request Document

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Page 1 of 1

Section A Required Client Information	Section B Required Project Information	Section C Invoice Information
Company: Vistra Corp/A3	Report To: Brian Voelker	Attention: Jason Stuckey
Address:	Copy To: Jason Stuckey	Company Name: Vistra Corp
	Purchase Order No.	Address: see Section A
Email To: Brian.Voelker@VistraCorp.com	Project Name:	Quote Reference
Phone: (217) 753-8911 Fax:	Project Number: 2285	Project Manager
Requested Due Date/TAT: 10 day		Profile #:

REGULATORY AGENCY

NPDES | **GROUND WATER** | DRINKING WATER

UST | RCRA | OTHER

Site Location STATE: IL

Section D Required Client Information

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

Valid Matrix Codes

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: HEN_257_801	HEN_257_802	HEN_257_803	HEN_257_804	HEN_811_801	HEN_845_802-805	HEN_845_803	HEN_845_804	HEN_CLOSURE_802-805	HEN_CLOSURE_804	HEN_SUP_000	HEN_WPCP_East	HEN_WPCP_West	Residual Chlorine (Y/N)	Project No./ Lab I D
1	HEN_17			8/29/23	0940												X		X				X				X				SHORT HOLDS-NO2
2	HEN-17DUP			↓	↓												X		X				X				X				
3																															
4																															
5																															
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59
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
HEN-23Q3 Rev 0	Allison Beckett	8/28/23	1500	Kaur EETA	8/28/23	1500	

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER: Allison Beckett	DATE Signed (MM/DD/YY): 8/28/23	Temp in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
SIGNATURE of SAMPLER:					

24 → 20

Login Sample Receipt Checklist

Client: Vistra Energy Corp

Job Number: 500-238579-11
SDG Number: HEN_257_801

Login Number: 238579
List Number: 1
Creator: Scott, Sherri L

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.6,0.7,0.3,1.2,0.8,0.4,0.1,2.9,1.7,3.7,1.0,2.8,0.2, 2.0,2.9,0.1,1.63.0,1.3,0.5,2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

SAR-3: Episodic Depth to Groundwater Measurements
All DTWs on SAR-3 must be collected within 24 hours.
Plant: HEN
Event: HEN-23Q3 Rev 0

Well	Unique ID	Date	Time	Measured Depth to Water (ft bmp)	Comments	Initials
02	HEN_02	8/21/23	1200	41.84		CT
04R	HEN_04R	8/21/23	1035	37.08		CT
05R	HEN_05!R	8/21/23	1105	38.69		CT
05DR	HEN_05&DR	8/21/23	1115	38.73		CT
06	HEN_06	8/21/23	1140	20.8		CT
10	HEN_10	8/21/23	0955	48.28		CT
11	HEN_11	8/21/23	0950	48.33		CT
15	HEN_15	8/21/23	1030	47.89		CT
19S	HEN_19#S	8/21/23	1045	37.2		CT
19D	HEN_19&D	8/21/23	1040	37.34		CT
25	HEN_25	8/22/23	0945	14.02 ~~[illegible]~~	~~[illegible]~~	CT
26	HEN_26	8/22/23	0940	13.26		CT
30	HEN_30	8/22/23	1000	4.85		CT
31	HEN_31	8/22/23	0955	4.85		CT
33	HEN_33	8/22/23	1018	2.8'		CT
36	HEN_36	8/22/23	0930	13.58		CT
40S	HEN_40#S	8/21/23	1050	37.92		CT
45S	HEN_45#S	8/21/23	1125	18.98		CT
48	HEN_48	8/21/23	1055	N/A	* COULD NOT MEASURE DUE TO BLOCK	CT
XPW01	HEN_XPW01_pore	8/21/23	1005	9.45		CT
XPW02	HEN_XPW02_pore	8/21/23	1010	14.14		CT
XPW03	HEN_XPW03_pore	8/21/23	1020	4.86		CT
~~XSG01~~	~~HEN_XSG01~~					
~~SG02~~	~~HEN_YSG_ILRIVER~~					

U:6/21/23 GKJ

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @ 1140
Well Number HEN-06

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			↓

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	31.09 ft		

	Yes	No	NA
General Condition			
18. Concrete pad installed?		X	
19 . Concrete pad			
Slope away form casing?			X
Not deteriorated?			↓
Not heaved or below surrounding grade?			
20. No surface seal settling?			↓
21. Well clearly visible and labeled?	X		

Comments:

DTW: 20.80 ft pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @ 10~~:30~~45
Well Number HEN-195

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose		↓		
2. Inner casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	↓			
6. Is there a lock present?				
7. Bumper posts in good condition?	↓			
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?			↓	
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?			↓	
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		↓		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?			↓	
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	39.92 ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		↓		
Not heaved or below surrounding grade?				
20. No surface seal settling?		↓		
21. Well clearly visible and labeled?	X			

Comments:

DTW: 37.2ft pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @ 1040
Well Number HEN-19D

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	62.55 ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:
DTW: 37.34 pump in well

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site Hennipen, IL
Inspection Date 8/21/23 @ 1035
Well Number HEN-MW

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				

	Yes	No	NA
3. Are there weep holes in outer casing?		X	
4. Weep holes able to drain?			
5. Is there a lockable cap present?			
6. Is there a lock present?			
7. Bumper posts in good condition?			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			

If present, how much sediment?	~ ft
16. Installed as total depth.	ft
17. Measured total depth of well.	42.78 ft

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?	X		
Not deteriorated?	X		
Not heaved or below surrounding grade?	X		
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

PAD IS CRACKED & MAY NEED REPAIRS 37.08 DTW

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23
Well Number HEN-15

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?	~~Yes~~		X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	50.3 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?		↓	
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

Contains pump! DTW: 47.19ft
Top of pump: 50.3ft

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @ 0950
Well Number 11

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			X
10. No water in the flushmount?		X	X
11. Is the well cap lockable?			X
12. Is there a lock present?			X

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	106.3 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

DTW: 48.33ft

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site Hennepin IL
Inspection Date 8/22/23 @ 0830
Well Number HEN-22 & D

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			↓

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	app ft		
General Condition			
18. Concrete pad installed?		X	
19 . Concrete pad			X
Slope away form casing?			
Not deteriorated?			
Not heaved or below surrounding grade?			↓
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Field Personnel: Allison Beckett
Start Date: 8/22/23 Time: 0800
Finish Date: Time: 1015

WELL INFORMATION

Well ID: HEN-22D
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	±10% Temp. (°C)	±0.1 pH (SU)	±0.1 SEC or Cond. (µs/cm)	Dissolved Oxygen ±0.3 (mg/L)	±5% or ±1 Turbidity (NTU)	±10 ORP (mV)	Visual Clarity
0	0819				19.1	7.56	0.712	3.04	3.87	-12.6	clear
	0824				17.9	7.35	0.722	1.66	6.12	-68.0	
	0829				17.8	7.29	07.28	1.07	6.02	-66.0	
	0834				17.7	7.29	0.729	0.85	10.3	-72.0	
	0839	2.0			18.2	7.29	0.730	0.84	42.41	-75.7	
	0844				18.6	7.30	0.730	0.87	12.9	-79.6	
30	0849				19.0	7.30	0.731	0.85	21.43	-81.7	
	0854				18.0	7.30	0729	0.105	27.6	-84.1	
40	0859				17.7	7.30	0.731	0.83	26.2	-83.0	
45	0904	3.5			18.0	7.30	0.731	0.91	24.8	-82.1	

NOTES (continued)

Samples taken @0910

Ferrous iron: Under range @0920

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

P 1 of 1

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/22/23 @ 1200
Well Number HEN-23

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				

	Yes	No	NA
3. Are there weep holes in outer casing?		X	
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?	↓		
7. Bumper posts in good condition?			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	— ft		

	Yes	No	NA
General Condition			
18. Concrete pad installed?		X	
19 . Concrete pad			X
Slope away form casing?			↓
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: in app

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/22/23 Time: 1040
Field Personnel: Allison Beckett
Finish Date: Time: 1210

WELL INFORMATION

Well ID: HEC-23
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1041				15.8	7.39	0.836	2.91	3.61	-94.6	clear
	1046				15.7	7.40	0.836	1.32	3.75	-113.9	
	1051				15.4	7.42	0.838	0.49	3.79	-129.0	
	1056	1.5			15.5	7.37	0.837	0.35	3.80	-128.2	
	1101				15.4	7.37	0.835	0.26	5.81	-128.7	
	1106				15.2	7.39	0.835	0.21	4.69	-126.8	
	1111				15.4	7.39	0.833	0.20	7.9	-125.8	
	1116	3.0			15.0	7.40	0.832	0.18	9.1	-124.3	

NOTES (continued)

Samples taken @ 1120
Ferrous iron: Under range @ 1145

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

P 1 of 1

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/22/23 @ 1308
Well Number HEN-21R

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing		X		
Not corroded				
Not dented				
Not cracked				
Not loose				
2. Inner casing		X		
Not corroded				
Not dented				
Not cracked				
Not loose				
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				
Flushmount Monitoring Wells				
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells				
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft			
General Condition				
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?				
21. Well clearly visible and labeled?	X			

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/22/23 Time: 1300
Field Personnel: Allison Beckett
Finish Date: Time: 1430

WELL INFORMATION

Well ID: HEN-21R
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (Military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0	1311				17.8	7.56	0.758	1.17	59.8	-129.4	Clear
	1316				17.3	7.54	0.764	1.22	58.5	-139.8	↓
	1321				17.2	7.54	0.705	1.06	41.69	-138.9	Brownish
	1326				17.1	7.53	0.768	1.16	33.94	-134.1	
	1331	2.5			17.9	7.52	0.765	0.95	34.3	-137.2	
	1336				17.1	7.53	0.763	0.930	32.3	-134.9	
30	1341	3.0			16.6	7.51	0.742	0.21	34.8	-136.3	

NOTES (continued)

Samples taken @ 1345

ferrous iron: 0.916 ppm

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

p 1 of 1

Monitoring Well Evaluation Checklist

Site Hennepin IL
Inspection Date 8/22/23 0915
Well Number HEN-51

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft	← app		
General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		?		
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?				
21. Well clearly visible and labeled?	X			

Comments:

DTW on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: Hennepin, IL
Client: Rambol
Project Number:
Task #:
Start Date: 8/22/23 Time: 1500
Field Personnel: Allison Beckett
Finish Date: Time:

WELL INFORMATION

Well ID: HEN-51
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1506				18.9	7.45	0.725	5.56	10.51	-121.3	Clear
	511				17.3	7.30	0.734	2.38	12.19	-88.3	
	516				16.8	7.32	0.736	1.26	11.17	-105.3	
	521	1.0			17.1	7.34	0.737	0.92	31.84	-115.5	
	526				17.1	7.35	0.735	0.73	38.26	-122.1	
	531				16.6	7.35	0.737	0.63	200.2	-124.5	
30	536	2.0			17.3	7.36	0.738	0.38	22.5	-126.7	
	541				17.2	7.37	0.734	0.33	24.2	-127.4	
	546				17.1	7.37	0.733	0.30	25.7	-127.7	
	551	3.0			17.3	7.37	0.730	0.27	26.2	-128.6	

NOTES (continued)

Samples taken @ 1556

Ferrous iron: 1.744 ppm @ 1618

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

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Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @1580
Well Number HEC-22

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing		X	X	
Not corroded				
Not dented				
Not cracked				
Not loose				
2. Inner casing		X		
Not corroded				
Not dented				
Not cracked				
Not loose				
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				
Flushmount Monitoring Wells				
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells				
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft	← on app		
General Condition				
18. Concrete pad installed?		X		
19 . Concrete pad				
Slope away form casing?			X	
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?				
21. Well clearly visible and labeled?	X			

Comments:

DTW = on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/25/23 Time: 08[illegible]15
Field Personnel: Allison Beckett
Finish Date: 8/25/23 Time: 09[illegible]20

WELL INFORMATION

Well ID: HEN-22
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	0821				14.2	7.68	0.456	1.47	4.00	113.9	Clear
	0826				16.1	7.68	0.653	0.27	4.10	92.6	
	0831	2.5			16.1	7.69	0.653	0.18	4.14	87.2	
	0836				16.1	7.68	0.653	0.14	4.20	78.8	
	0841	5			16.1	7.68	0.653	0.13	4.24	77.6	
	0846	5.5			16.1	7.67	0.653	0.12	4.31	77.8	

NOTES (continued)

Samples taken @ 0850

Ferrous iron sample @ 0920 : Under range

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

Monitoring Well Evaluation Checklist

Site _____
Inspection Date 4/22/23
Well Number HEN 32

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose				
2. Inner casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA	Comments
8. Can the lid be secured tightly?	\			
9. Does the lid have a gasket that seals?		\		
10. No water in the flushmount?			\	
11. Is the well cap lockable?				
12. Is there a lock present?				

All Monitoring Wells

	Yes	No	NA	Comments
Downhole Condition		X		
12. Water level measuring point clearly marked?		↓		
13. No obstructions in well?				
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad		X		
Slope away form casing?		↓		
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?				
21. Well clearly visible and labeled?	X			

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: HENNEPIN
Client:
Project Number: 2023 0711
Task #:
Start Date: 8/22/23 Time: 1035
Field Personnel: C. TREMBLAY
Finish Date: 8/22/23 Time: 1135

WELL INFORMATION

Well ID: HEN-32
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	10% <10 Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1040	1			3%	+1	3%	10%	~~FAIL~~	+10	CLEAR
SAMPLE	1048				14.0	7.10	0.718	0.45	41.69	173.6	
	1053				13.9	7.11	0.716	0.21	20-60	165.2	
	1058				13.8	7.10	0.715	0.12	13.02	160.1	
	1103	3			13.8	7.10	0.715	0.09	8.77	156.9	
	1108				13.8	7.10	0.716	0.09	7.30	153.9	
	1113	3.25			13.8	7.09	0.715	0.08	5.33	151.7	
	~~1118~~										

NOTES (continued)

SAMPLER 1115

FI WORKING

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

Monitoring Well Evaluation Checklist

Site HENNEPIN
Inspection Date 8/22/23
Well Number 33 @ 1018

Major wells repairs* required to maintain well integrity?

Yes	No	NA

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?			X	
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?		X		
7. Bumper posts in good condition?	~~X~~	~~X~~	~~X~~ X	
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?				
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?				ft
16. Installed as total depth.				ft
17. Measured total depth of well.				36.12 ft
General Condition	Yes	No	NA	
18. Concrete pad installed?			X	
19 . Concrete pad				
Slope away form casing?				
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?		X		
21. Well clearly visible and labeled?		X		OVERGROWN WEEDS

Comments:

DTW 7.81
pump in well

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site
Inspection Date 8/22/23 @1600
Well Number 30

Major wells repairs* required to maintain well integrity?

Yes	No	NA

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				

	Yes	No	NA
3. Are there weep holes in outer casing?			X
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?	X		
7. Bumper posts in good condition?	X		

Flushmount Monitoring Wells

	~~Yes~~	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			X
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	18.6 ft		

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

DTW 4.85
MNS pump

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site
Inspection Date 2/22/2023 0955
Well Number 3D

Major wells repairs* required to maintain well integrity?

Yes	No	NA

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?			X	
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			X
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	8 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

DTW 4.85

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site HENNEPIN
Inspection Date 8/22 0945
Well Number HEN 25

Major wells repairs* required to maintain well integrity?	Yes	No	NA

Stick-up Monitoring Wells

1. Outer protective Casing	Yes	No	NA	Comments
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		

2. Inner casing	Yes	No	NA	
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		

	Yes	No	NA	
3. Are there weep holes in outer casing?			X	
4. Weep holes able to drain?	(scribbled out)		X	
5. Is there a lockable cap present?	X	(scribbled out)		
6. Is there a lock present?		X		
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA	
8. Can the lid be secured tightly?	(line drawn through section)			
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				

All Monitoring Wells

Downhole Condition	Yes	No	NA	
			X	
12. Water level measuring point clearly marked?		X		
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?		X		
If present, how much sediment?	ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	15.71 ft	w/o pump 25.71		

General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		X		
Not heaved or below surrounding grade?		X		
20. No surface seal settling?		X		
21. Well clearly visible and labeled?	X			

Comments:
WELL HAS PUMP   * WHEN SET UP TO SAMPLE NOTICED BRASS
DTW 14.02   FITTING HAD CRACK

* Major well repair are those that require a subcontractor or separate mobilization to complete

DTW W/O PUMP 13.5

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/22/23 Time: 1335

Field Personnel: C TREMBLY Finish Date: 8/22/23 Time: 1455

WELL INFORMATION

Well ID: 25

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1342		13.3*								CLOUDY
PURGE	1348	0.25	13.51						~~65.57~~		CLEAR
SAMPLE	1350		13.51	Ø	17.0	7.25	0.519	1.52	65.57	171.1	
	1355				16.6	7.25	0.519	1.46	42.11	171.7	
	1400				16.6	7.24	0.517	1.46	26.88	172.4	
	1405		13.51	Ø	16.6	7.24	0.516	1.48	17.97	173.8	
	1410				16.8	7.23	0.516	1.51	13.11	174.6	
	1415	3			16.6	7.23	0.516	1.52	9.47	175.2	
	1420				16.5	7.22	0.514	1.56	8.29	175.9	
	1425	4	13.51	Ø	16.6	7.22	0.514	1.59	6.43	176.5	
	1430										

NOTES (continued)

*GEOTECH PUMP
F2 - INDURING
SAMPLE @ 1430

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

Monitoring Well Evaluation Checklist

Site HENNEPIN
Inspection Date 9/22/23 0940
Well Number HEN 26

Major wells repairs* required to maintain well integrity?

Yes	No	NA

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X	~~X~~		
6. Is there a lock present?			X	
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			~~X~~
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?	~~X~~	X	
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	29.1 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad		X	
Slope away form casing?			
Not deteriorated?			
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

Well ~~H~~ HAS pump
DTW 13.26'

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/22/23 Time: 1455

Field Personnel: TREVOR LAY Finish Date: _____ Time: _____

WELL INFORMATION

Well ID: 26

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PURGE	1500	0.1	13.8								CLEAR
SAMPLE	1506		13.8		17.3	7.09	.784	0.51	2.31	186.1	
	1511				17.2	7.09	.784	0.18	2.37	183.6	
	1516	1.5			17.1	7.09	0.784	0.16	2.40	181.8	
	1521				17.0	7.09	0.785	0.04	2.41	179.9	
	1526				17.0	7.09	0.784	0.02	2.44	178.6	
	1531	3.0	13.9	- 0.1	16.9	7.09	0.784	0.02	2.50	177.0	

NOTES (continued)

FT UNDERRUN

SAMPLE @ 1535

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/23/23 @ 1350
Well Number HEN-47

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client:
Project Number:
Task #:
Start Date: 8/23/23 Time: 1155
Field Personnel: Allison Beckett
Finish Date: 8/23/23 Time: 1607

WELL INFORMATION

Well ID: HEN-47
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1501				22.9	4.96	0.404	6.05	3.85	113.7	clear
	1506				21.6	7.03	0.640	2.36	3.18	148.2	
	1511	1.0			21.6	7.03	0.640	2.05	3.12	152.0	
	1516				21.6	7.03	0.639	1.79	3.02	154.6	
	1521				21.5	7.03	0.641	1.68	3.01	156.2	
	1526	2.5			21.5	7.04	0.639	1.52	3.20	155.3	

NOTES (continued)

Samples taken @ 1530

Ferrous iron @ 1600 : Under range

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

Monitoring Well Evaluation Checklist

Site Hennepin IL
Inspection Date 8/23/23 @1105
Well Number HEN-12

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	X
13. No obstructions in well?		↓	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
General Condition			
18. Concrete pad installed?		X	
19 . Concrete pad			
Slope away form casing?			↑
Not deteriorated?			↓
Not heaved or below surrounding grade?			↓
20. No surface seal settling?			↓
21. Well clearly visible and labeled?	X		

Comments:

DTW: 0.00

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/23/23 Time: 0930
Field Personnel: Allison Bellwett
Finish Date: 8/23/23 Time: 1040

WELL INFORMATION

Well ID: HEN-12
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
		1038			21.3	7.81	0.551	9.73	3.92	149.6	clear
		1043			19.7	7.39	0.559	2.45	3.25	159.4	
		1048	1.5		19.6	7.35	0.559	2.01	3.10	157.1	
		1053			19.6	7.33	0.559	1.94	3.10	155.7	
		1058	2.5		19.5	7.31	0.559	1.91	3.11	155.1	
		1103			19.5	7.30	0.559	1.89	3.05	154.8	
		1108	4.0		19.5	7.30	0.558	1.88	3.0	154.1	

NOTES (continued)

Samples taken @ 1010

Ferrous iron @ 1019 : under range

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/23/23 @0825
Well Number HEN-416

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?			
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	— ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?			
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: 3 Ramboll
Project Number:
Task #:
Start Date: 8/28/23
Time: 0910
Field Personnel: Allison Beckett
Finish Date:
Time: 0930

WELL INFORMATION

Well ID: HEN-46
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0	0819				20.9	7.40	0.559	3.37	6.50	127.4	clear
	0824				20.8	7.35	0.560	2.44	4.01	142.5	↓
	0829				20.8	7.35	0.560	2.34	5.82	144.1	
	0834	1.5			20.8	7.34	0.560	2.19	9.84	144.5	
	0839				20.8	7.34	0.558	2.06	14.58	144.3	
	0844				20.8	7.33	0.558	1.99	17.95	143.7	
30	0849	3.0			20.8	7.33	0.559	1.91	18.25	143.2	
					20.9	7.33	0.559	1.85	18.98	142.2	

NOTES (continued)

Samples taken @ 0855

Ferrous iron: Under range @ 0910

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/23/23 @ 1334
Well Number HEN-54

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			

If present, how much sediment?	ft
16. Installed as total depth.	ft
17. Measured total depth of well.	ft

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Rumboll
Project Number: _____ Task #: _____
Start Date: 8/23/23 Time: 1300
Field Personnel: Allison Beckett Finish Date: _____ Time: 1455

WELL INFORMATION

Well ID: HEN-54
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
13	1314				22.7	7.36	0.576 S	6.16	5.99	113.9	clear
13	1319				23.0	7.32	0.574	3.58	24.10	128.2	
13	1324	1.0			22.7	7.31	0.577	3.016	23.14	133.1	
13	1329				22.4	7.31	0.576	2.71	19.6	136.4	
13	1334				22.3	7.31	0.577	2.49	18.41	139.0	
13	1339				22.4	7.30	0.577	2.40	14.50	140.2	
	1344				22.3	7.31	0.577	2.39	14.88	140.1	
	1349	2.5			22.6	7.30	0.576	2.31	13.82	141.0	

NOTES (continued)

Samples taken @ 1350

Ferrous iron sample @ 1450: 5.37

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

Monitoring Well Evaluation Checklist

Site Hennepin IL
Inspection Date 9/23/23 @ 1110
Well Number HEN-13

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded	X			Oxidized & rusty
Not dented		X		
Not cracked		↓		
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			

If present, how much sediment?	— ft
16. Installed as total depth.	ft
17. Measured total depth of well.	— ft

General Condition	Yes	No	NA
18. Concrete pad installed?		X	
19 . Concrete pad			
Slope away form casing?			X
Not deteriorated?			↓
Not heaved or below surrounding grade?			
20. No surface seal settling?			↓
21. Well clearly visible and labeled?	X		

Comments:

DTW - on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/23/23 Time: 1055
Field Personnel: Allison Bickett
Finish Date: Time: 1255

WELL INFORMATION

Well ID: HEN-13
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0	1057				21.5	7.33	0.552	11.36	3.19	152.0	Clear
	1102				21.6	7.37	0.502	3.67	3.18	152.7	↓
	1107	1.0			21.6	7.38	0.503	3.43	3.19	151.1	
	1112				21.6	7.38	0.503	2.33	3.20	149.9	
	1117				21.6	7.39	0.503	2.23	3.21	149.9	
25	1122	2.0			21.4	7.39	0.503	2.10	3.05	150.2	↓

NOTES (continued)

samples taken @ 1125

Ferrous iron @ 1125 : Underrange

dupe @ 1125

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

Monitoring Well Evaluation Checklist

Site
Inspection Date 8123123
Well Number 18D

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	✓	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		↓	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?			
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
	ft		
General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad		X	
Slope away form casing?		↓	
Not deteriorated?		↓	
Not heaved or below surrounding grade?		↓	
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: 2023-024 Task #: _____ Start Date: 8/23/23 Time: 1318

Field Personnel: TREMBLAY Finish Date: _____ Time: 1435

WELL INFORMATION

Well ID: 16D

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE											
PURGE	1330	0.1									CLEAR
	1333				21.3	7.22	0.692	2.84	15.81	169.2	
	1338				21.3	7.17	0.688	0.78	6.81	79.1	
	1343	1.5			21.2	7.17	0.684	0.33	10.95	72.2	
	1348				21.2	7.17	0.684	0.18	11.18	71.7	
	1353				21.1	7.18	0.684	0.17	10.44	68.3	
	1358	2			21.2	7.18	0.685	0.17	10.26	68.2	

NOTES (continued)

SAMPLED @ 1405

FI - UNDER

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @ 1115
Well Number HEN - 05DR

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded				
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded				
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?				
5. Is there a lockable cap present?				
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			
13. No obstructions in well?			
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	68.07 ft		
General Condition			
18. Concrete pad installed?			
19 . Concrete pad			
Slope away form casing?			
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?			

Comments:

DTW: 38.73 pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: HENNEPIN
Client:
Project Number: 2023 0711
Task #:
Start Date: 8/23/23 Time: 1155
Field Personnel: C TREMBLAY
Finish Date: 8/23/23 Time: 1305

WELL INFORMATION

Well ID: 05 DR
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1155	[illegible]	38.73	Ø							
PURGE	1205	[illegible]	38.73	Ø							CLEAR
	1210	0.75	38.73	Ø	21.2	7.41	0.632	0.77	3.81	169.5	
	1215		38.73	Ø	20.6	7.41	0.631	0.28	2.54	162.7	
	1220		38.73	Ø	20.6	7.42	0.631	0.20	2.67	165.1	
	1225	1.25	38.73		20.8	7.41	0.631	0.18	2.23	163.5	
	1230		38.73		20.8	7.41	0.631	0.16	2.35	161.7	
	1235		38.73		20.8	7.41	0.631	0.15	2.51	160.2	
	1240		38.73		20.9	7.41	0.631	0.15	2.12	158.8	

NOTES (continued)

SAMPLE @ - 1145
FI - UNDERWAY

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

Monitoring Well Evaluation Checklist

Site Hennepin, I2
Inspection Date 8/21/23 @1105
Well Number ~~HEN-05~~ HEN-05R

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	46.05 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?		↓	
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

DTW: 38.~~69~~ pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: Hennepp2W
Client:
Project Number: 2023-0711
Task #:
Start Date: 8/23/23
Time: 1036
Field Personnel: C. TREMBLAY
Finish Date:
Time: 1450

WELL INFORMATION

Well ID: 05R
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1036		38.69								
PURGE	1042	0.1	38.69	⊘			~~0.646~~	~~1.60~~	~~27.51~~	~~118.9~~	CLEAR
SAMPLE	1048	0.5	38.69	⊘	20.6	7.61	0.646	1.60	27.51	118.9	↓
	1053		38.69	⊘	20.6	7.61	0.644	0.36	18.70	136.8	
	1058		38.69	⊘	20.5	7.61	0.643	0.23	12.41	141.0	
	1103	1.25	38.69	⊘	20.8	7.61	0.643	0.19	8.77	142.8	
	1108		38.69	⊘	20.6	7.61	0.644	0.17	7.00	143.7	
	1113		38.69	⊘	20.8	7.61	0.643	0.15	5.15	144.0	
	1118	2.5	38.69	⊘	20.6	7.61	0.645	0.14	4.41	144.2	
	1123				20.3	7.62	0.644	0.14	3.55	144.2	

NOTES (continued)

SAMPLE@ - 1130
FI - 0.806 ppm

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

Monitoring Well Evaluation Checklist

Site Hennepin IL
Inspection Date 8/21/23 @ 1055
Well Number HEN-48

Major wells repairs* required to maintain well integrity?

Yes	No	NA
X		

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented	X			SMALL DENT
Not cracked		X		
Not loose	X			WELL IS LOOSE
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked	X			INNER CASE CRACKED
Not loose	X			

	Yes	No	NA
3. Are there weep holes in outer casing?		X	
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?	X		
7. Bumper posts in good condition?	X		

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?	X		
9. Does the lid have a gasket that seals?			X
10. No water in the flushmount?			X
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?	X			CRICKET WEB
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?			X	
If present, how much sediment?				ft
16. Installed as total depth.				ft
17. Measured total depth of well.				ft

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?	X		
Not deteriorated?		X	
Not heaved or below surrounding grade?	X		
20. No surface seal settling?	X		
21. Well clearly visible and labeled?	X		

Comments:

COULD NOT TAKE WATER LEVEL READING due to blockage

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: HENNEPIN
Client:
Project Number: 2023 024
Task #:
Start Date: 8/23/23 Time: 0931
Field Personnel: TRW
Finish Date: Time: 1030

WELL INFORMATION

Well ID: 48
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
~~PURGE~~											
PURGE	0937	0.11			~~20.9~~	~~7.63~~	~~0.601~~	~~1.93~~	~~5.23~~	~~163.4~~	CLEAR
SAMPLE	0943	0.75			20.9	7.63	0.601	1.93	5.23	163.4	
	0948				20.8	7.62	0.590	0.50	4.37	160.2	
	0953				20.7	7.62	0.589	0.24	3.28	157.6	
	0958				20.5	7.62	0.589	0.18	2.71	154.3	
	1003	2.25			20.7	7.62	0.589	0.15	2.22	152.0	
	1008				20.7	7.62	0.589	0.13	2.30	150.3	
	1013				20.7	7.62	0.589	0.12	2.09	148.7	
	1018	3			20.8	7.62	0.589	0.11	2.01	147.4	

NOTES (continued)

* WELL HAS OBSTRUCTION INSIDE CASING. COULD NOT MEASURE WATER

SAMPLE @ - 1020

FI - UNDRNG

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @ 1050
Well Number HEN-405

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	39.92 ft		

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:
37.92'
DTW: ~~[illegible]~~ ft pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: HENNEPIN 2 — Client:
Project Number: 2023 0711 — Task #: — Start Date: 8/23/23 — Time: 0820
Field Personnel: C TRUMBLY — Finish Date: 8/23/23 — Time: 0978

WELL INFORMATION

Well ID: 405
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	0832		37.92	0							
PURGE	0836	0.1	37.92	0							CLEAR
SAMPLE	0841		37.92	0	19.0	7.89	0.581	2.20	4.25	149.6	
	0846	1.5	37.92	0	18.8	7.89	0.579	0.41	3.29	143.4	
	0851		37.92	0	18.7	7.88	0.579	0.44	2.58	139.1	
	0856		37.92	0	18.7	7.88	0.579	0.37	2.16	135.7	
	0901	2.75	37.92	0	18.8	7.88	0.579	0.37	2.13	133.5	

NOTES (continued)

SAMPLE @ 0905

FT - MNDPNG

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

Monitoring Well Evaluation Checklist

Site HENNEPIN
Inspection Date 9/24/23
Well Number MW-35

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?		X	
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
	ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/24 Time: 0930

Field Personnel: TREMBLAY Finish Date: _____ Time: 1038

WELL INFORMATION

Well ID: HEN 35

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PURGE	~~0940~~	0.1			± 3%	± 1	3%	10%	10%	+10	CLEAR
SAMPLE	0946				16.5	7.10	0.926	8.28	14.30	159.9	
	0951				16.2	7.04	0.918	6.78	15.97	169.8	
	0956	1.0			16.3	7.03	1.369	2.16	7.72	163.8	
	1001				16.2	7.03	1.378	1.87	2.67	162.0	
	1006	2.0			16.2	7.03	1.358	1.47	2.81	161.7	
	~~1011~~										

NOTES (continued)

F1 - ~~DUPE~~ UNDR

SAMPLE @ 1010

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

Monitoring Well Evaluation Checklist

Site ~~HEN~~ Hennepin, IL
Inspection Date 8/24/23
Well Number HEN-52

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/24/23 Time: 0905
Field Personnel: Allison Beckett
Finish Date: Time: 1020

WELL INFORMATION

Well ID: HEN-S2
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0	0909	0			21.5	7.10	0.1135	7.57	5.56	147.1	Clear
	0914				23.6	7.01	0.1005	2.04	5.95	152.3	↓
	0919	1.0			23.8	7.06	0.1609	1.34	4.68	149.7	
	0924				23.9	7.05	0.1612	1.21	4.27	147.2	
	0929	2.0			23.9	7.04	0.1613	1.03	4.25	146.5	
25	0934				24.0	7.04	0.1614	1.96	4.08	145.8	

NOTES (continued)

Samples taken @0940

Ferrous iron @1011: Under range

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

Monitoring Well Evaluation Checklist

Site HENNEPIN, IL
Inspection Date 8/24/23 @ 1400
Well Number HEN-8D

Major wells repairs* required to maintain well integrity?	Yes	No	NA

Stick-up Monitoring Wells

1. Outer protective Casing	Yes	No	NA	Comments
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		

2. Inner casing	Yes	No	NA	
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		

	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?			↓	
10. No water in the flushmount?			↓	
11. Is the well cap lockable?			↓	
12. Is there a lock present?			↓	

All Monitoring Wells

Downhole Condition	Yes	No	NA	
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		↓		
15. No sediment in bottom of well?		↓		
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft			

General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		↓		
Not heaved or below surrounding grade?		↓		
20. No surface seal settling?		↓		
21. Well clearly visible and labeled?	X			

Comments:
DTW ion app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING/WATER MONITORING

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/24/23
Time: 1140
Field Personnel: Allison Beckett
Finish Date:
Time: 1311

WELL INFORMATION

Well ID: HEN-88D
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
G	1154				18.7	7.03	1.330	0.45	4.29	182.5	clear
	1159				17.7	6.104	1.426	[redacted]	4.88	193.7	
	1204				17.7	6.58	1.433	0.98	5.34	194.0	
	1209	1.0			17.4	6.58	1.436	0.76	4.60	193.0	
	1214				17.5	6.58	1.432	0.75	4.57	192.4	
2S	1219	2.0			17.3	6.59	1.435	0.63	4.32	192.0	

NOTES (continued)

Samples taken @ 1225

Ferrous iron sample @ 1232: Underrange

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 3/24/23 1355
Well Number HEN-07

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
General Condition			
18. Concrete pad installed?		X	
19 . Concrete pad			
Slope away form casing?			X
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: On app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client:
Project Number:
Task #:
Start Date: 8/24/23 Time: 1320
Field Personnel: Allison Beckett
Finish Date: 8/24/23 Time: 1430

WELL INFORMATION

Well ID: HEN-07
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1332				14.4	6.98	0.727	5.73	5.16	144.3	clear
	1337				14.0	6.97	0.698	4.25	4.45	174.5	
	1342	2.0			13.9	6.96	0.701	4.20	4.09	176.6	
	1347				13.9	6.94	0.700	4.16	3.85	178.7	
	1352	3.0			13.8	6.93	0.699	4.16	3.57	179.6	
	1357				13.8	6.91	0.697	4.15	3.55	179.9	↓

NOTES (continued)

Samples taken @1400

Ferrous iron sample @1430: Under range

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/24/23 @ 1452
Well Number HEN-03

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		X		
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		X		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			X

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	— ft		
General Condition			
18. Concrete pad installed?		X	
19 . Concrete pad			
Slope away form casing?			X
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: on APP

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Rambol
Project Number:
Task #:
Start Date: 8/21/24 Time: 1435
Field Personnel: Allison Bell
Finish Date: 8/21/24 Time: 1620

WELL INFORMATION

Well ID: 08
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1443				14.7	6.62	1.228	1.54	3.85	194.1	clear
	1449				14.6	6.58	1.239	1.30	3.61	194.1	↓
	1453	2.5			14.7	6.69	1.239	1.22	3.53	188.9	
	1458				14.6	6.69	1.243	1.19	3.50	188.1	
	1503				14.6	6.72	1.244	1.17	3.49	188.6	
	1508				14.7	6.72	1.241	1.16	3.49	188.6	↓

NOTES (continued)

Samples taken @ 1510

Ferrous iron sampled @ 1530: under range

dupe @ 1510

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

Monitoring Well Evaluation Checklist

Site
Inspection Date 8/24/23
Well Number 27

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		↓	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 9/24 Time: 0820

Field Personnel: TRUMBLAY Finish Date: _____ Time: 0921

WELL INFORMATION

Well ID: HEN 27

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
~~0824~~											
PURGE	0824	0.1									CLEAR
SAMPLE	0828				12.9	7.21	0.819	0.50	13.75	0.1	
	0833	1			13.0	7.22	0.817	0.09	23.15	-20.3	
	0838				13.5	7.24	0.813	0.04	46.33	-29.8	
	0843				12.8	7.32	0.816	0.04	46.72	-31.5	
	0848	2.75			12.4	7.33	0.816	0.06	47.09	-32.9	
	0853	3.0			12.5	7.33	0.816	0.07	48.82	-33.7	
	0854										

NOTES (continued)

FOUNDER

SAMPLED 0900

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @ 1200
Well Number HEN-02

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?				
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	47.10 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: 41.84ft pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/24/2023 Time: 1025
Field Personnel: Allison Beckett
Finish Date: 8/24/2023 Time: 1120

WELL INFORMATION

Well ID: HEN-02
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1032		41.17		15.4	7.12	0.1679	5.70	5.80	156.5	Clear
	1037		41.17		14.2	6.81	0.1687	0.63	5.08	172.7	↓
	1042	2.0	41.17		14.0	6.78	0.1685	0.38	5.12	174.3	
	1047		41.16		14.1	6.81	0.1684	0.31	4.34	172.3	
	1052	3.0	41.15		14.0	6.83	0.1684	0.27	3.99	170.8	
	1057				14.0	6.83	0.1686	0.27	4.17	170.1	
	1102	4.0			14.0	6.83	0.1685	0.24	3.85	169.1	

NOTES (continued)

Samples taken @ 1105

NO FERROUS IRON SAMPLE

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 9/21/23 @ 1010
Well Number HEN-XPW02-Pore

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	~ ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	19 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: 14.39 ft

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/24/23 Time: 1252

Field Personnel: TREMBLAY Finish Date: _____ Time: 1450

WELL INFORMATION

Well ID: XPW02

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1256	4	14.03								
PURGE	1304	0.1	14.19	-0.16							CLEAR
SAMPLE	1308	1.0	14.58	-0.39	19.4	12.03	3.071	0.91	89.87	-116.0	
	1313		14.92	-0.36	19.2	12.13	3.111	0.21	59.77	-155.7	
	1318		15.0	-0.18	19.4	12.14	3.109	0.14	40.43	-165.2	
	1323	2.5	15.1	-0.1	19.3	12.16	3.129	0.10	28.61	-168.5	
	1328		15.13	-0.03	19.8	12.16	3.146	0.12	29.94	-157.5	
	1333		15.15	-0.02	19.7	12.17	3.163	0.12	22.84	-152.3	
	1338	3.25	15.15	0	19.7	12.17	3.191	0.12	23.05	-148.4	

NOTES (continued)

FI - 0.109

SAMPLE - 1345

EB - 1345

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @ 1005
Well Number ~~HenxPW01~~ - pore

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		↓		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?			↓	
10. No water in the flushmount?			↓	
11. Is the well cap lockable?			↓	
12. Is there a lock present?			↓	
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?		X		
If present, how much sediment?	[redacted] ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	17.13 ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?				
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		↓		
Not heaved or below surrounding grade?		↓		
20. No surface seal settling?		↓		
21. Well clearly visible and labeled?	X			

Comments:

DTW: 9.45 ft Bottom of casing: 17.13 ft

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/24/23 Time: 1125

Field Personnel: CKemsley Finish Date: _____ Time: 1250

WELL INFORMATION

Well ID: XPW01

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☑ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1125		9.45								
PURGE	1130	0.1	9.45	⊘							CLEAR
SAMPLE	1135	0.75	9.45	⊘	19.5	11.30	0.783	0.37	9.22	-241.6	
	1140		9.45	⊘	19.5	11.31	0.795	0.22	10.51	-242.4	
	1145	1.0	9.45	⊘	18.8	11.33	0.801	0.17	13.54	-244.1	
	1150		9.45	⊘	19.0	11.33	0.804	0.11	17.05	-248.5	
	1155		9.45	⊘	19.2	11.34	0.808	0.11	21.53	-259.5	
	1200	2.25	9.45	⊘	17.6	11.39	0.815	0.11	54.09	-271.9	
	1205		9.45	⊘	17.7	11.39	0.817	0.10	57.11	-278.6	
	1210	3.5	9.45	⊘	17.7	11.39	0.818	0.10	55.97	-279.1	

NOTES (continued)

SAMPLE @ 1215
FB - WATER
EQUIPMENT BLANK @ 1215

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

Monitoring Well Evaluation Checklist

Site ~~Hennepin, IL~~
Inspection Date 8/21/23 @ 1020
Well Number ~~HEN-XPW~~03-Pore

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	~ ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	19.11 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?		↓	
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

DTW: ~~9.86~~ 9.85 ft.

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/22 & 8/23 Time: 1455

Field Personnel: [illegible] Finish Date: _____ Time: _____

WELL INFORMATION

Well ID: XPW03

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1457		4.84								
	1500	1.0	5.16	-0.3	~~16.7~~	~~11.71~~	~~1.141~~	~~0.82~~	~~5.~~		
	1506		5.16	⊘	16.7	11.71	1.141	0.82	5.92	-3.2	
	1511		5.16	⊘	16.6	11.79	1.144	0.11	13.62	-22.1	
	1516	2	5.16	⊘	16.7	11.79	1.146	0.11	9.31	-30.8	
	1521		5.16	⊘	16.8	11.78	1.149	0.10	9.28	-37.3	
	1526	2.5	5.16	⊘	16.7	11.79	1.149	0.11	9.97	-41.9	
	1531										
	1536										

NOTES (continued)

FT UNDR

SAMPLE - 1530

EB - 1530

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

Monitoring Well Evaluation Checklist

Site Hennepin
Inspection Date 8/21/23 @0955
Well Number 10

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			X
10. No water in the flushmount?			X
11. Is the well cap lockable?			X
12. Is there a lock present?			X

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	48.65 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

DTW: 48.28 ft Bottom of Casing/top of pump 48.65

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/24/23 Time: 0810
Field Personnel: Allison Beckett
Finish Date: 8/24/23 Time: 6900

WELL INFORMATION

Well ID: HEN-10
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0	0810		48.15		22.8	7.15	0.619	1.52	4.08	138.6	clear
	0821		48.12		23.1	7.06	0.622	0.73	4.50	144.6	↓
	0826	2.0	48.12		23.1	7.05	0.624	0.67	7.00	144.2	
	0831		48.12		23.1	7.04	0.625	0.55	10.15	142.8	
	0836	3.0	48.11		23.2	7.04	0.625	0.53	4.50	141.8	
2.5	0841	3.5	48.11		23.2	7.04	0.625	0.52	3.90	140.9	↓

NOTES (continued)

Samples taken @ 0845

NO FERROUS IRON SAMPLE

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @ 0930
Well Number 50

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		✓		
Not dented		✓		
Not cracked		✓		
Not loose		✓		
2. Inner casing				
Not corroded		✓		
Not dented		✓		
Not cracked		✓		
Not loose		✓		
3. Are there weep holes in outer casing?		✓		
4. Weep holes able to drain?		✓		
5. Is there a lockable cap present?		✓		
6. Is there a lock present?		✓		
7. Bumper posts in good condition?		✓		
Flushmount Monitoring Wells				
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?			X	
10. No water in the flushmount?			X	
11. Is the well cap lockable?			X	
12. Is there a lock present?			X	
All Monitoring Wells				
Downhole Condition			X	
12. Water level measuring point clearly marked?		X		
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?		X		
If present, how much sediment?	ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	ft			
General Condition				
18. Concrete pad installed?	✓			
19 . Concrete pad	✓			
Slope away form casing?		✓		
Not deteriorated?		✓		
Not heaved or below surrounding grade?		✓		
20. No surface seal settling?	✓			
21. Well clearly visible and labeled?	✓			

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/25/23 Time: 1055
Field Personnel: Alison Brickett
Finish Date: 8/25/23 Time: 1200

WELL INFORMATION

Well ID: HEN-50
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
10	1058				16.8	7.53	0.064	0.01	364.79	81.2	clear
11	1103				16.7	7.56	0.063	0.59	384.0	112.5	↓
11	1109	2.0			16.8	7.49	0.064	0.17	4.33	109.3	
11	1113				16.9	7.49	0.065	0.14	4.31	98.5	
11	1118	4.0			16.7	7.48	0.065	0.12	4.06	87.2	
11	1123				16.7	7.47	0.065	0.12	3.98	88.0	

NOTES (continued)

Samples taken @ 1125

Ferrous iron sample @ 1140: Underrange

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

Monitoring Well Evaluation Checklist

Site
Inspection Date 8/25/23
Well Number HEN 34

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?		X	
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
	ft		
General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/25/23 Time: 1053

Field Personnel: TREMBLAY Finish Date: 8/25/23 Time: 1145

WELL INFORMATION

Well ID: HCN 34

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PURGE	~~1055~~ 1100	0.1			~~13.2~~ 13.7	~~7.21~~ 7.21	~~0.948~~ 0.948	2.06	~~14.02~~ 14.02	~~116.2~~ -116.2	~~CLEAR~~ CLEAR
	1105				12.8	7.09	0.966	0.25	7.80	-108.6	
	1110	2.5			12.8	7.08	0.969	0.21	6.54	-110.4	
	1115				12.7	7.08	0.971	0.22	5.51	-111.2	
	1120				12.8	7.08	0.972	0.20	4.81	-110.7	
	1125										
	1130										

NOTES (continued)

FI - UNDERAN

SAMPLE @ 1125

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

Monitoring Well Evaluation Checklist

Site
Inspection Date 8/25/23
Well Number HEN 49

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X	N/A	
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA	Comments
8. Can the lid be secured tightly?				
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				

All Monitoring Wells

	Yes	No	NA	Comments
Downhole Condition				
12. Water level measuring point clearly marked?		X		
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?		X		
If present, how much sediment?		X		
16. Installed as total depth.	ft			
17. Measured total depth of well.	ft			
	ft			

	Yes	No	NA	Comments
General Condition				
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		X		
Not heaved or below surrounding grade?		X		
20. No surface seal settling?		X		
21. Well clearly visible and labeled?	X			

Comments:

BATTERY WAS REPLACED + WOULD NOT CONNECT. WELL WAS GAUGED MANUALLY

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/25/23 Time: 0925
Field Personnel: Allison Blewett
Finish Date: Time: 1055

WELL INFORMATION

Well ID: HEN-49
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
09	1032		19.65		15.5	7.21	0.700	1.40	72.1	-1.5	Cloudy
09	1037		19.65		15.3	7.13	0.698	0.22	92.38	38.0	Brown/murky
09	1042	2.0	19.65		15.4	7.12	0.1098	0.17	110.79	48.6	
09	1047		19.64		15.4	7.12	0.1098	0.15	122.4	57.7	
09	1052		19.65		15.4	7.12	0.617	0.13	121.9	58.8	
09	1057	5.0	19.64		15.4	7.12	0.1098	0.12	122.9	59.1	
10	1102		19.65		15.3	7.12	0.098	0.11	123.6	58.2	

NOTES (continued)

Sample staken @ 1105

Ferrous iron sample @ 1030: Underrange

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

Monitoring Well Evaluation Checklist

Site Hennepin 2
Inspection Date 8/23/23 0815
Well Number #EN-10

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose				
2. Inner casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		↓		
15. No sediment in bottom of well?				
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft			
General Condition				
18. Concrete pad installed?	X	X		
19 . Concrete pad				
Slope away form casing?			X	
Not deteriorated?			↓	
Not heaved or below surrounding grade?				
20. No surface seal settling?			X	
21. Well clearly visible and labeled?	X			

Comments:

DTW: 53.90, dead batteries/transducer is fried

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/28/23 Time: 0800
Field Personnel: Allison Beckett
Finish Date: Time: 0915

WELL INFORMATION

Well ID: HEN-16
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	0808		53.90		19.9	7.47	0.550	8.13	4.40	114.5	clear
	0813		53.90		22.5	7.23	0.553	1.41	3.88	131.4	
	0818		53.90		22.7	7.23	0.554	1.21	3.92	131.1	
	0823	1.0	53.90		22.8	7.23	0.556	0.53	3.85	126.8	
	0828		53.90		22.8	7.23	0.556	0.41	3.89	123.5	
	0833	2.0	53.90		22.8	7.23	0.556	0.37	3.99	122.7	

NOTES (continued)

Samples taken @ 0835

Ferrous iron sample @0850 : Under range

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/28/23 @ 0915
Well Number ~~HEN-17~~

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			↓

All Monitoring Wells

	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		↓		
15. No sediment in bottom of well?		↓		
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad	—	—	—	—
Slope away form casing?		X		
Not deteriorated?	X			cracked
Not heaved or below surrounding grade?	X			cracked
20. No surface seal settling?		X		
21. Well clearly visible and labeled?	X			

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/28/23 Time: 0905
Field Personnel: Allison Burkett
Finish Date: Time: 1030

WELL INFORMATION

Well ID: HEN-17
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	0911				22.4	7.15	0.565	5.91	5.06	137.9	clear
	0916				22.7	7.35	0.514	4.13	3.97	140.7	"
	0921				22.5	7.35	0.508	10.06	4.08	144.3	
	0926	1.0			22.5	7.35	0.508	10.00	3.96	146.5	
	0931				22.4	7.34	0.507	5.88	3.99	147.6	
	0936	2.0			22.4	7.34	0.506	5.76	4.02	148.2	↓

NOTES (continued)

Samples taken @ 0940

Ferrous iron sample @ 0945: under range

dupe @ 0940

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

Monitoring Well Evaluation Checklist

Site
Inspection Date 8/28
Well Number 03R

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?	X			
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?		X	
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
	ft		

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/28 Time: 0906

Field Personnel: TREMBLAY Finish Date: 8/28 Time: 1121

WELL INFORMATION

Well ID: 037

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PURGE	0915	0.1							~~10.85~~	~~115~~	CLEAR
SAMPLE	0920				16.2	7.22	0.655	0.81	10.85	~~[illegible]~~ 141.1	
	0925	1.0			18.2	7.21	0.653	0.32	5.46	137.8	
	0930				16.2	7.21	0.653	0.22	3.81	132.9	
	0935				18.3	7.21	0.653	0.22	2.99	129.4	
	0940	2.25			16.3	7.20	0.652	0.21	2.54	126.9	
	0945										
	0950										
	0955										

NOTES (continued)

FT - UNDER SAMPLER ONLY

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

Monitoring Well Evaluation Checklist

Site
Inspection Date 8/28/23
Well Number 18S

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA	Comments
8. Can the lid be secured tightly?				
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				

All Monitoring Wells

	Yes	No	NA	Comments
Downhole Condition				
12. Water level measuring point clearly marked?		X		
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?		X		
16. Installed as total depth.		X		
17. Measured total depth of well.		X		
If present, how much sediment?	ft			
	ft			
	ft			

	Yes	No	NA	Comments
General Condition				
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		X		
Not heaved or below surrounding grade?		X		
20. No surface seal settling?		X		
21. Well clearly visible and labeled?	X			

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/28/23 Time: 0800

Field Personnel: TRAINEE Finish Date: 8/28/23 Time: 0905

WELL INFORMATION

Well ID: 185

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☒ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PURGE	0810	0.25									CLEAR
	0811				16.8	7.52	0.666	2.30	5.45	104.0	
	0816				16.7	7.39	0.661	0.42	3.20	103.2	
	0821				16.8	7.39	0.661	0.26	2.61	98.1	
	0826	2.25			16.8	7.38	0.661	0.22	2.49	95.5	
	0831	2.5			16.8	7.38	0.661	0.20	2.46	94.1	
	0836										
	0841										
	0846										

NOTES (continued)

FI-UNDR

0835

SAMPLE

ABBREVIATIONS

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @1125
Well Number HEN-455

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing		X		
Not corroded		↓	↓	
Not dented				
Not cracked				
Not loose		↓	↓	
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?			↓	
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?			↓	
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		↓		
15. No sediment in bottom of well?		↓		
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	30.19 ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		↓		
Not heaved or below surrounding grade?		↓		
20. No surface seal settling?		↓		
21. Well clearly visible and labeled?	X			

Comments:

DTW: 18.98 pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Rambol
Project Number:
Task #:
Start Date: 8/28/23 Time: 1040
Field Personnel: Allison Beckett
Finish Date: Time: 1140

WELL INFORMATION

Well ID: HEN-455
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1044		18.98		19.3	7.32	0.706	3.27	9.13	57.9	clear
	1049		18.97		19.1	7.17	0.641	0.25	148.24	108.9	Brown/murky
	1054	2.5	18.98		19.1	7.17	0.640	0.22	130.16	111.7	↓
	1059		18.98		19.1	7.16	0.640	0.19	89.9	116.1	
	1104		18.98		19.1	7.16	0.640	0.18	87.30	118.6	
	1109	5.0	18.98		19.1	7.16	0.640	0.17	54.30	119.2	
	1114		18.98		19.1	7.16	0.640	0.17	55.06	120.2	

NOTES (continued)

Samples taken @ 1115

Ferrous iron sample @1130: underrange

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

SAR-4: Depth to Groundwater Measurements - On-site Transducer Downloads
All DTWs on SAR-4 form may be collected at anytime during the sampling event.
Plant: HEN
Event: HEN-23Q3 Rev 0

Well	Unique ID	Date	Time	Measured Depth to Water (ft bmp)	On-site Transducer Data					Comments	Initials
					Data Logger Serial No.	Does Data Logger Serial No. Match?	WL Reading on Transducer (ft)	Data down-loaded?	Batt (H/M/L)		
03R	HEN_03R	8/28/2023	9:06	See transducer reading	21615140	y	448.07	y	h		CT
07	HEN_07	8/24/2023	13:20	See transducer reading	21615139	y	450.45	y	h		AB
08	HEN_08	8/24/2023	14:35	See transducer reading	21615138	y	448.33	y	h		AB
08D	HEN_08&D	8/24/2023	11:40	See transducer reading	21615598	y	448.09	y	h		AB
12	HEN_12	8/23/2023	9:30	See transducer reading	21615520	y	448.17	y	h		AB
13	HEN_13	8/23/2023	10:55	See transducer reading	21615515	y	448.22	y	h		AB
16	HEN_16	8/28/2023	8:00	53.9	21615137	y	N/A	n	h	Replaced battery, issues connecting to hobo link, manually gauged well.	AB
17	HEN_17	8/28/2023	9:05	See transducer reading	21615500	y	449.15	y	h		AB
18S	HEN_18#S	8/28/2023	8:00	See transducer reading	21615482	y	448.12	y	h		CT
18D	HEN_18&D	8/23/2023	13:18	See transducer reading	21615609	y	448.08	y	h		CT
21R	HEN_21R	8/22/2023	13:00	See transducer reading	21615613	y	447.73	y	h		AB
22	HEN_22	8/25/2023	8:15	See transducer reading	21615497	y	447.26	y	h		AB
22D	HEN_22&D	8/22/2023	8:00	See transducer reading	21564134	y	447.57	y	h		AB
23	HEN_23	8/22/2023	10:40	See transducer reading	21615600	y	447.92	y	h		AB
27	HEN_27	8/24/2023	8:20	See transducer reading	21615576	y	447.77	y	h		CT
32	HEN_32	8/22/2023	10:35	See transducer reading	21615487	y	447.64	y	h		CT

SAR-4: Depth to Groundwater Measurements - On-site Transducer Downloads
All DTWs on SAR-4 form may be collected at anytime during the sampling event.
Plant: HEN
Event: HEN-23Q3 Rev 0

Well	Unique ID	Date	Time	Measured Depth to Water (ft bmp)	On-site Transducer Data					Comments	Initials
					Data Logger Serial No.	Does Data Logger Serial No. Match?	WL Reading on Transducer (ft)	Data down-loaded?	Batt (H/M/L)		
34	HEN_34	8/25/2023	10:53	See transducer reading	21615509	y	440.58	y	h	Replaced battery 8/25/23	CT
35	HEN_35	8/24/2023	9:30	See transducer reading	21615510	y	447.64	y	h		CT
46	HEN_46	8/23/2023	8:10	See transducer reading	21615491	y	448.28	y	h		AB
47	HEN_47	8/23/2023	14:55	See transducer reading	21615505	y	447.94	y	h		AB
49	HEN_49	8/25/2023	9:25	19.65	21615490	y	N/A	n	h	Replaced battery, issues connecting to hobo link, manually gauged well.	AB
50	HEN_50	8/25/2023	10:55	See transducer reading	21615489	y	-0.03	y	h		AB
51	HEN_51	8/22/2023	15:00	See transducer reading	21615608	y	447.74	y	h		AB
52	HEN_52	8/24/2023	9:05	See transducer reading	21615145	y	448.12	y	h		AB
54	HEN_54	8/23/2023	13:00	See transducer reading	21615143	y	448.03	y	h		AB
55	HEN_55	8/23/2023	12:55	See transducer reading	21615612	y	corrupted file	y	h	Data was downloaded, data did not save correctly/ corrupt	AB

U: 6/21/23 GKJ

Monitoring Well Evaluation Checklist

Site	Hennepin, IL
Inspection Date	8/21/23 @ 1140
Well Number	HEN-06

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose		↓		
2. Inner casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose		↓		
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	Q
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	31.09ft		

	Yes	No	NA
General Condition			
18. Concrete pad installed?		X	
19 . Concrete pad			
Slope away form casing?			X
Not deteriorated?			↓
Not heaved or below surrounding grade?			↓
20. No surface seal settling?			↓
21. Well clearly visible and labeled?	X		

Comments:

DTW: 20.80 ft pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	
Inspection Date	8/21/23 @ 10[illegible]45		
Well Number	HEN-195		

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	↓			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		↓	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	39.92 ft		

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?		↓	
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

DTW: 37.2ft pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	9/21/23 @ 1340			X	
Well Number	HEN-19D				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	62.55 ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: 37.34 pump in well

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site	Hennipen, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @ 1035			X	
Well Number	HEN-04R				

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?				
5. Is there a lockable cap present?				
6. Is there a lock present?				
7. Bumper posts in good condition?				
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	42.78 ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?	X			
Not deteriorated?	X			
Not heaved or below surrounding grade?	X			
20. No surface seal settling?		X		
21. Well clearly visible and labeled?	X			

Comments:

PAD IS CRACKED & MAY NEED REPAIRS 37.08 DTW

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Inspection Checklist

Site Hennepin, IL
Inspection Date 8/21/23
Well Number HEN-15

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?	~~X~~		X	
9. Does the lid have a gasket that seals?			↓	
10. No water in the flushmount?			↓	
11. Is the well cap lockable?			↓	
12. Is there a lock present?			↓	

All Monitoring Wells	Yes	No	NA	
Downhole Condition	—	—	—	—
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		↓		
15. No sediment in bottom of well?		↓		
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	50.3 ft			

General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad	—	—	—	—
Slope away form casing?		X		
Not deteriorated?		↓		
Not heaved or below surrounding grade?		↓		
20. No surface seal settling?		↓		
21. Well clearly visible and labeled?	X			

Comments:
contains pump! DTW: 47.19ft
Top of pump: 50.3ft

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Inspection Checklist

			Yes	No	NA
Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?		X	
Inspection Date	8/21/23 @ 0950				
Well Number	11				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			X
10. No water in the flushmount?			X
11. Is the well cap lockable?			X
12. Is there a lock present?			X

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	16.63 ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

DTW: 48.33ft

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site	Hennepin IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/22/23 @ 0830			X	
Well Number	HEN-22 & D				

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?			↓	
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?		↓		
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	app ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?		X		
19 . Concrete pad			X	
Slope away form casing?				
Not deteriorated?				
Not heaved or below surrounding grade?			↓	
20. No surface seal settling?				
21. Well clearly visible and labeled?	X			

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/22/23 Time: 0800
Field Personnel: Allison Bickett
Finish Date: Time: 1015

WELL INFORMATION

Well ID: HEN-22D
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	±10% Temp. (°C)	±0.1 pH (SU)	±0.05 SEC or Cond. (µs/cm)	±0.3 Dissolved Oxygen (mg/L)	±5% or ±1 Turbidity (NTU)	±1.0 ORP (mV)	Visual Clarity
0	0819				19.1	7.56	0.712	3.04	3.87	-12.6	clear
	0824				17.9	7.35	0.722	1.66	6.12	-68.0	
	0829				17.8	7.29	07.28	1.07	10.02	-66.0	
	0834				17.7	7.29	0.729	0.85	11.3	-72.0	
	0839	2.0			18.2	7.29	0.730	0.84	42.41	-75.7	
	0844				18.6	7.30	0.730	0.87	12.9	-79.6	
30	0849				19.0	7.30	0.731	0.85	26.43	-81.7	
	0854				18.0	7.30	0.729	0.105	27.6	-84.1	
40	0859				17.7	7.30	0.731	0.83	26.2	-83.0	
45	0904	3.5			18.0	7.30	0.731	0.91	24.8	-82.1	

NOTES (continued)

Samples taken @0910

Ferrous iron: Under range @0920

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

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Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/22/23 @ 1200
Well Number HEN-23

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		✓		
Not cracked		✓		
Not loose		✓		

	Yes	No	NA	
2. Inner casing				
Not corroded		X		
Not dented		✓		
Not cracked		✓		
Not loose		✓		

	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	✓			
7. Bumper posts in good condition?	✓			

Flushmount Monitoring Wells

	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?			✓	
10. No water in the flushmount?			✓	
11. Is the well cap lockable?			✓	
12. Is there a lock present?			✓	

All Monitoring Wells

Downhole Condition	Yes	No	NA	
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		✓		
15. No sediment in bottom of well?		✓		
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft			

General Condition	Yes	No	NA	
18. Concrete pad installed?		X		
19 . Concrete pad			X	
Slope away form casing?			✓	
Not deteriorated?			✓	
Not heaved or below surrounding grade?			✓	
20. No surface seal settling?			✓	
21. Well clearly visible and labeled?	X			

Comments:
DTW: in app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/22/23 Time: 1040
Field Personnel: Allison Beckett
Finish Date: Time: 1210

WELL INFORMATION

Well ID: HEC-23
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1041				15.8	7.39	0.8316	2.91	3.61	-94.6	clear
	1046				15.7	7.40	0.8316	1.32	3.75	-113.9	
	1051				15.4	7.42	0.838	0.49	3.79	-129.0	
	1056	1.5			15.5	7.37	0.837	0.35	3.80	-128.2	
	1101				15.4	7.37	0.835	0.26	5.81	-128.7	
	1106				15.2	7.39	0.835	0.21	4.69	-126.8	
	1111				15.4	7.39	0.833	0.20	7.9	-125.8	
	1116	3.0			15.0	7.40	0.832	0.18	9.1	-124.3	

NOTES (continued)

Samples taken @ 1120
Ferrous iron: Under range @ 1145

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

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Monitoring Well Evaluation Checklist

			Major wells repairs* required to maintain well integrity?	Yes	No	NA
Site	Hennepin, FL				X	
Inspection Date	8/22/23 @ 1308					
Well Number	HEN-21R					

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose		↓		
2. Inner casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	↓			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition	—	—	—
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		↓	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?		↓	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	— ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad	~		
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?			
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/22/23 Time: 1300
Field Personnel: Allison Beckett
Finish Date: Time: 1430

WELL INFORMATION

Well ID: HEN-21R
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (Military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0	1311				17.8	7.56	0.768	1.17	59.8	-129.4	Clear
	1316				17.3	7.54	0.764	1.22	58.5	-139.8	↓
	1321				17.2	7.54	0.765	1.06	41.69	-138.9	Brownish
	1326				17.1	7.53	0.768	1.11	33.94	-134.1	
	1331	2.5			17.9	7.52	0.765	0.95	34.3	-137.2	
	1336				17.1	7.53	0.763	0.930	32.3	-134.9	
30	1341	3.0			16.6	7.51	0.742	0.21	34.8	-136.3	

NOTES (continued)

Samples taken @ 1345

ferrous iron: 0.916 ppm

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

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Monitoring Well Evaluation Checklist

Site	Hennepin IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/22/23 0915			X	
Well Number	HEN-51				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft			← app
General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?				
21. Well clearly visible and labeled?	X			

Comments:

DTW on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL — Client: Rambol

Project Number: — Task #: — Start Date: 8/22/23 — Time: 1500

Field Personnel: Allison Beckett — Finish Date: — Time:

WELL INFORMATION

Well ID: HEN-51

Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0	1506				18.9	7.45	0.725	5.56	10.51	-21.3	Clear
	511				17.3	7.30	0.734	2.38	12.19	-88.3	
	516				16.8	7.32	0.736	1.26	11.17	-105.3	
	521	1.0			17.1	7.34	0.737	0.92	31.84	-115.5	
	526				17.1	7.35	0.735	0.73	88.21	-122.1	
	531				16.6	7.35	0.737	0.63	200.2	-124.5	
30	536	2.0			17.3	7.36	0.738	0.38	22.5	-126.7	
	541				17.2	7.37	0.734	0.33	24.2	-127.4	
	546				17.1	7.37	0.733	0.30	25.7	-127.7	
	551	3.0			17.3	7.37	0.730	0.27	26.2	-128.6	

NOTES (continued)

Samples taken @ 1556

Ferrous iron: 1.744 ppm @ 1618

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

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Monitoring Well Inspection Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/13 @1580			X	
Well Number	HEC-22				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing		X	X	
Not corroded				
Not dented				
Not cracked				
Not loose				

	Yes	No	NA	
2. Inner casing		X		
Not corroded				
Not dented				
Not cracked				
Not loose				

	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				

All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft	← on app		

General Condition	Yes	No	NA	
18. Concrete pad installed?		X		
19 . Concrete pad				
Slope away form casing?			X	
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?				
21. Well clearly visible and labeled?	X			

Comments:

DTW = on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number: _____ Task #: _____
Start Date: 8/25/23 Time: 08[illegible]15
Field Personnel: Allison Beckett
Finish Date: _____ Time: 09[illegible]20

WELL INFORMATION

Well ID: HEN-22
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	0821				16.2	7.68	0.656	1.47	4.00	113.9	Clear
	0826				16.1	7.68	0.653	0.27	4.10	92.6	
	0831	2.5			16.1	7.69	0.653	0.18	4.14	87.2	
	0836				16.1	7.68	0.653	0.14	4.20	79.8	
	0841	5			16.1	7.68	0.653	0.13	4.24	77.6	
	0846	5.5			16.1	7.67	0.653	0.12	4.31	77.8	

NOTES (continued)

Samples taken @0850

Ferrous iron sample @0920: Underrange

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

Monitoring Well Evaluation Checklist

Site		Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	6/22/23			X	
Well Number	HEN 32				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		↓	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad		X	
Slope away form casing?		↓	
Not deteriorated?		↓	
Not heaved or below surrounding grade?		↓	
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: HENNEPIN
Client:
Project Number: 2023 0711
Task #:
Start Date: 8/22/23 Time: 1035
Field Personnel: C. TREMBLAY
Finish Date: 8/22/23 Time: 1135

WELL INFORMATION

Well ID: HEN-32
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1040	1			3%	+1	3%	10%	~~150~~	+10	CLEAR
SAMPLE	1048				14.0	7.10	0.718	0.45	41.69	173.6	
	1053				13.9	7.11	0.716	0.21	20.60	165.2	
	1058				13.8	7.10	0.715	0.12	13.02	160.1	
	1103	3			13.8	7.10	0.715	0.09	8.77	156.9	
	1108				13.8	7.10	0.716	0.09	7.30	153.9	
	1113	3.25			13.8	7.09	0.715	0.08	5.33	151.7	
	~~1118~~										

101. <10

NOTES (continued)

SAMPLED 1115

FI UNDERRUN

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

Monitoring Well Inspection Checklist

			Yes	No	NA
Site	HENNEPIN	Major wells repairs* required to maintain well integrity?			
Inspection Date	8/22/23				
Well Number	33 @ 1018				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose				
2. Inner casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose				

	Yes	No	NA
3. Are there weep holes in outer casing?			X
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?		X	
7. Bumper posts in good condition?	~~X~~	~~X~~	X

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is the well cap present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			X
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		↓	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			
If present, how much sediment?		↓	
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
	36.12 ft		

General Condition	Yes	No	NA	
18. Concrete pad installed?			X	
19 . Concrete pad			↓	
Slope away form casing?				
Not deteriorated?				
Not heaved or below surrounding grade?			✓	
20. No surface seal settling?		X		
21. Well clearly visible and labeled?		X		OVERGROWN WEEDS

Comments:

DTW 7-8'
pump in Well

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Condition Checklist

Site
Inspection Date 8/22/23 @1600
Well Number 3D

Major wells repairs* required to maintain well integrity?	Yes	No	NA

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
3. Are there weep holes in outer casing?			X	
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells	~~Yes~~	No	NA	
8. Can the lid be secured tightly?				
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				

All Monitoring Wells	Yes	No	NA	
Downhole Condition			X	
12. Water level measuring point clearly marked?		X		
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?		X		
If present, how much sediment?	ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	18.6 ft			

General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		X		
Not heaved or below surrounding grade?		X		
20. No surface seal settling?		X		
21. Well clearly visible and labeled?	X			

Comments:
DTW 4.85
Has pump

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation Checklist

Site
Inspection Date 2/22/2023 0955
Well Number 30

Major wells repairs* required to maintain well integrity?

Yes	No	NA

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		

	Yes	No	NA
3. Are there weep holes in outer casing?			X
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?	X		
7. Bumper posts in good condition?	X		

Flushmount Monitoring Wells

	~~Yes~~	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	

If present, how much sediment?	ft
16. Installed as total depth.	ft
17. Measured total depth of well.	8 ft

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

DTW 4.85

* Major well repair are those that require a subcontractor or separate mobilization to complete

Monitoring Well Evaluation

			Major wells repairs* required to maintain well integrity?	Yes	No	NA
Site	HENNEPEN					
Inspection Date	8/22	0945				
Well Number	HEN 25					

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		

	Yes	No	NA
3. Are there weep holes in outer casing?			X
4. Weep holes able to drain?	~~X~~		X
5. Is there a lockable cap present?	X	~~X~~	
6. Is there a lock present?		X	
7. Bumper posts in good condition?	X		

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?	~~Yes~~		
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA	
Downhole Condition			X	
12. Water level measuring point clearly marked?		X		
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?		X		
If present, how much sediment?		ft		
16. Installed as total depth.		ft		
17. Measured total depth of well.	15.71	ft		w/o pump 25.71

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

WELL HAS PUMP ~~X~~ WHEN SET UP TO SAMPLE NEEDED BRASS
DTW 14.02 FITTING HAD CRACK

* Major well repair are those that require a subcontractor or separate mobilization to complete

DTW W/O PUMP 13.5

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/22/23 Time: 1335

Field Personnel: C. TROMBLEY Finish Date: 8/22/23 Time: 1455

WELL INFORMATION

Well ID: 25

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1342		13.51								CLOUDY
PURGE	1348	0.25	13.51								CLEAR
SAMPLE	1350		13.51	Ø	17.0	7.25	0.519	1.52	65.57	171.1	
	1355				16.6	7.25	0.519	1.46	42.11	171.7	
	1400				16.6	7.24	0.517	1.46	26.88	172.4	
	1405		13.51	Ø	16.6	7.24	0.516	1.48	17.97	173.8	
	1410				16.5	7.23	0.516	1.51	13.11	174.6	
	1415	3			16.6	7.23	0.516	1.52	9.47	175.2	
	1420				16.5	7.22	0.514	1.56	8.29	175.9	
	1425	4	13.51	Ø	16.6	7.22	0.514	1.59	6.43	176.5	
	1430										

NOTES (continued)

*GEOTECH PUMP
F2 - UNDERRUN
SAMPLE @ 1430

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

Monitoring Well Evaluation Checklist

Site HENNEPIN
Inspection Date 8-22-23 0940
Well Number HEN 26

Major wells repairs* required to maintain well integrity?

Yes	No	NA

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				

	Yes	No	NA
3. Are there weep holes in outer casing?		X	
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?			X
7. Bumper posts in good condition?	X		

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?		X	
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
	29.1 ft		

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

Well has pump
DTW 13.26

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/22/23 Time: 1455

Field Personnel: TREVOR LAY Finish Date: _____ Time: _____

WELL INFORMATION

Well ID: 26

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PURGE	1500	0.1	13.8								CLEAR
SAMPLE	1506		13.8		17.3	7.09	.784	0.51	2.31	186.1	
	1511				17.2	7.09	.784	0.18	2.37	183.6	
	1516	1.5			17.1	7.09	0.784	0.10	2.40	181.8	
	1521				17.0	7.09	0.785	0.04	2.41	179.9	
	1526				17.0	7.09	0.784	0.02	2.44	178.6	
	1531	3.0	13.9	-0.1	16.9	7.09	0.784	0.02	2.50	177.0	

NOTES (continued)

FT UNDERRUN

SAMPLE @ 1535

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/23/23 @ 1250
Well Number HEN-47

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			X
10. No water in the flushmount?			X
11. Is the well cap lockable?			X
12. Is there a lock present?			X

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	— ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:
DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client:
Project Number:
Task #:
Start Date: 8/23/23 Time: 1155
Field Personnel: Allison Beckett
Finish Date: 8/23/23 Time: 1607

WELL INFORMATION

Well ID: HEN-47
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1501				22.9	4.96	0.404	6.05	3.85	113.7	clear
	1506				21.6	7.03	0.640	2.36	3.18	148.2	
	1511	1.0			21.6	7.03	0.640	2.05	3.12	152.0	
	1516				21.6	7.03	0.639	1.79	3.02	154.6	
	1521				21.5	7.03	0.641	1.68	3.01	156.2	
	1526	2.5			21.5	7.04	0.639	1.52	3.20	155.3	

NOTES (continued)

Samples taken @ 1530

Ferrous iron @ 1600 : Under range

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

Monitoring Well Evaluation Checklist

Site	Hennepin PP	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/23/23 @ 1105			X	
Well Number	HEN-12				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells	Yes	No	NA
Downhole Condition	~	~	~
12. Water level measuring point clearly marked?		X	X
13. No obstructions in well?		↓	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	~ ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	~ ft		

General Condition	Yes	No	NA
18. Concrete pad installed?		X	
19 . Concrete pad	~	~	~
Slope away form casing?			↑
Not deteriorated?			↓
Not heaved or below surrounding grade?			↓
20. No surface seal settling?			↓
21. Well clearly visible and labeled?	X		

Comments:

DTW: 0.00

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/23/23 Time: 0930
Field Personnel: Allison Bennett
Finish Date: 8/23/23 Time: 1040

WELL INFORMATION

Well ID: HEN-12
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
		1038			21.3	7.81	0.551	9.73	3.92	149.6	clear
		1043			19.7	7.39	0.559	2.45	3.25	159.4	
		1048	1.5		19.6	7.35	0.559	2.01	3.10	157.1	
		1053			19.6	7.33	0.559	1.94	3.10	155.7	
		1058	2.5		19.5	7.31	0.559	1.91	3.11	155.1	
		1103			19.5	7.30	0.559	1.89	3.05	154.8	
30		1108	4.0		19.5	7.30	0.558	1.88	3.0	154.1	

NOTES (continued)

Samples taken @ 1010

Ferrous iron @ 1019: under range

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/23/23 @ 0825
Well Number HEN-416

Major wells repairs* required to maintain well integrity?	Yes	No	NA
		X	

Stick-up Monitoring Wells

1. Outer protective Casing	Yes	No	NA	Comments
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		

2. Inner casing	Yes	No	NA	
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose				

	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells

	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?			↓	
10. No water in the flushmount?			↓	
11. Is the well cap lockable?			↓	
12. Is there a lock present?			↓	

All Monitoring Wells

Downhole Condition	Yes	No	NA	
	——	——	——	——
12. Water level measuring point clearly marked?		[illegible]	X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		↓		
15. No sediment in bottom of well?		↓		
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft			

General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad	——	——	——	——
Slope away form casing?		X		
Not deteriorated?		↓		
Not heaved or below surrounding grade?		↓		
20. No surface seal settling?		↓		
21. Well clearly visible and labeled?	X			

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/23/23 Time: 0810
Field Personnel: Allison Beckett
Finish Date: 8/23/23 Time: 0930

WELL INFORMATION

Well ID: HEN-46
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

	Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0		0819				20.9	7.40	0.559	3.37	6.58	127.4	Clear
		0824				20.8	7.35	0.560	2.44	4.01	142.5	↓
		0829				20.8	7.35	0.560	2.34	5.82	144.1	
		0834	1.5			20.8	7.34	0.560	2.19	9.84	144.5	
		0839				20.9	7.34	0.558	2.06	14.58	144.3	
		0844				20.8	7.33	0.558	1.99	17.95	143.7	
30		0849	3.0			20.8	7.33	0.559	1.91	18.25	143.2	
						20.9	7.33	0.559	1.85	18.98	142.2	

NOTES (continued)

Samples taken @ 0855

Ferrous iron: Underrange @ 0910

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/23/23 @ 1334			X	
Well Number	HEN-54				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	— ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/23/23 Time: 1300
Field Personnel: Allison Beckett
Finish Date: 8/23/23 Time: 1455

WELL INFORMATION

Well ID: HEN-54
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
13	1314				24.7	7.36	0.576 S	6.16	5.99	113.9	clear
13	1319				23.0	7.32	0.574	3.58	24.10	128.2	
13	1324	1.0			22.7	7.31	0.577	3.016	23.14	133.1	
13	1329				22.4	7.31	0.576	2.71	19.6	131.4	
13	1334				22.3	7.31	0.577	2.49	18.41	139.0	
13	1339				22.4	7.30	0577	2.40	14.50	140.2	
	1344				22.3	7.31	0.577	2.39	14.88	140.1	
35	1349	2.5			22.6	7.30	0.576	2.31	13.82	141.0	

NOTES (continued)

Samples taken @ 1350

Ferrous iron sample @ 1450: 5.371

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

Monitoring Well Evaluation Form

			Yes	No	NA
Site	Hennepin IL	Major wells repairs* required to maintain well integrity?		X	
Inspection Date	9/23/23 @ 1110				
Well Number	HEN-13				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded	X			Oxidized & Rusty
Not dented		X		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	— ft		

General Condition	Yes	No	NA
18. Concrete pad installed?		X	
19 . Concrete pad			
Slope away form casing?			X
Not deteriorated?			↓
Not heaved or below surrounding grade?			↓
20. No surface seal settling?			↓
21. Well clearly visible and labeled?	X		

Comments:

DTW - On app

* Major well repair are those that require a subcontractor or separate mobilization to complete

APPENDIX A.
ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT, LANDFILL
HEN-257-801

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/23/23 Time: 1055
Field Personnel: Allison Beckett
Finish Date: 8/23/23 Time: 1255

WELL INFORMATION

Well ID: HEN-13
Casing ID: 2 inches

EVENT TYPE

- [ ] Well Development
- [x] Low-Flow / Low Stress Sampling
- [ ] Well Volume Approach Sampling
- [ ] Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

	Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0		1057				21.5	7.33	0.552	4.36	3.19	152.0	Clear
		1102				21.6	7.37	0.562	3.67	3.18	152.7	↓
		1107	1.0			21.6	7.38	0.563	3.43	3.19	151.1	
		1112				21.6	7.38	0.563	2.33	3.20	149.9	
		1117				21.6	7.39	0.563	2.23	3.21	149.9	
25		1122	2.0			21.4	7.39	0.563	2.10	3.05	150.2	

NOTES (continued)

Samples taken @ 1125

Ferrous iron @ 1145: underrange

dupe @ 1125

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

Monitoring Well Evaluation Checklist

Site		Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/23/23			✓	
Well Number	187				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		

	Yes	No	NA
3. Are there weep holes in outer casing?		X	
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?	X		
7. Bumper posts in good condition?	X		

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?		X		
13. No obstructions in well?		↓		
14. No plant roots or vegetation in well?		↓		
15. No sediment in bottom of well?		↓		
If present, how much sediment?		↓		
16. Installed as total depth.				ft
17. Measured total depth of well.				ft
				ft

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad		X	
Slope away form casing?		↓	
Not deteriorated?		↓	
Not heaved or below surrounding grade?		↓	
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: 2023-024 Task #: _____ Start Date: 8/23/23 Time: 1318

Field Personnel: TREMBLAY Finish Date: 8/23/23 Time: 1435

WELL INFORMATION

Well ID: 18D

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☒ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE											
PURGE	1330	0.1									CLEAR
	1333				21.3	7.22	0.692	2.84	15.81	169.2	
	1338				21.3	7.17	0.688	0.78	6.81	79.1	
	1343	1.5			21.2	7.17	0.684	0.33	10.95	72.2	
	1348				21.2	7.17	0.684	0.18	11.18	71.7	
	1353				21.1	7.18	0.684	0.17	10.44	68.3	
	1358	2			21.2	7.18	0.685	0.17	10.26	68.2	

NOTES (continued)

SAMPLED @ 1405

FI - UNDER

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @ 1115			X	
Well Number	HEN - 05DR				

				Comments
Stick-up Monitoring Wells	Yes	No	NA	
1. Outer protective Casing				
Not corroded				
Not dented				
Not cracked				
Not loose				
2. Inner casing	Yes	No	NA	
Not corroded				
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?				
4. Weep holes able to drain?				
5. Is there a lockable cap present?				
6. Is there a lock present?				
7. Bumper posts in good condition?				
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?				
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?				
13. No obstructions in well?				
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	68.10 ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?				
19 . Concrete pad				
Slope away form casing?				
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?				
21. Well clearly visible and labeled?				

Comments:

DTW: 39.73 pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: HENNEPIN
Client:
Project Number: 2023 0711
Task #:
Start Date: 8/23/23 Time: 1155
Field Personnel: C TREMBLAY
Finish Date: 8/23/23 Time: 1305

WELL INFORMATION

Well ID: 05 DC
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1155	[illegible]	38.73	Ø							
PURGE	1205	[illegible]	38.73	Ø							CLEAR
	1210	0.75	38.73	Ø	21.2	7.41	0.632	0.77	2.81	169.5	
	1215		38.73	Ø	20.6	7.41	0.631	0.28	2.54	167.7	
	1220		38.73	Ø	20.6	7.42	0.631	0.20	2.67	165.1	
	1225	1.25	38.73		20.8	7.41	0.631	0.18	2.23	163.5	
	1230		38.73		20.8	7.41	0.631	0.16	2.35	161.7	
	1235		38.73		20.8	7.41	0.631	0.15	2.51	160.2	
	1240		38.73		20.9	7.41	0.631	0.15	2.12	158.8	

NOTES (continued)

SAMPLE @ - 1145
FI - UNDRNG

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

Monitoring Well Evaluation Checklist

Site Hennepin, IL
Inspection Date 8/21/23 @1105
Well Number HEN-05R

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				

	Yes	No	NA
3. Are there weep holes in outer casing?		X	
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?			
7. Bumper posts in good condition?			

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			

If present, how much sediment?	— ft
16. Installed as total depth.	ft
17. Measured total depth of well.	46.05 ft

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: 38.00 pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: HENNEPP2V
Client:
Project Number: 2023-0701
Task #:
Start Date: 8/23/23 Time: 1036
Field Personnel: C. TREMBLAY
Finish Date: 8/23/23 Time: 1450

WELL INFORMATION

Well ID: 05R
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	3% Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen 10% (mg/L)	Turbidity (NTU)	±10 ORP (mV)	Visual Clarity
PRE	1036		38.69								
PURGE	1042	0.1	38.69	⊘			~~0.646~~	~~1.60~~	~~27.51~~	~~118.9~~	CLEAR
SAMPLE	1048	0.5	38.69	⊘	20.6	7.61	0.646	1.60	27.51	118.9	↓
	1053		38.69	⊘	20.6	7.61	0.644	0.36	18.70	136.8	
	1058		38.69	⊘	20.5	7.61	0.643	0.23	12.41	141.0	
	1103	1.25	38.69	⊘	20.8	7.61	0.643	0.19	8.77	142.8	
	1108		38.69	⊘	20.6	7.61	0.644	0.17	7.00	143.7	
	1113		38.69	⊘	20.8	7.61	0.643	0.15	5.15	144.0	
	1118	2.5	38.69	⊘	20.6	7.61	0.645	0.14	4.41	144.2	
	1123				20.3	7.62	0.644	0.14	3.55	144.2	

NOTES (continued)

SAMPLE@ - 1130
FI - 0.806 ppm

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @ 1055		X		
Well Number	HEN-48				

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented	X	~~X~~		SMALL DENT
Not cracked		X		
Not loose	X			WELL IS LOOSE
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked	X			INNER CASE CRACKED
Not loose	X			
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?	X			
9. Does the lid have a gasket that seals?			X	
10. No water in the flushmount?			X	
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?	X			CRACKED WELL
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?			X	
If present, how much sediment?	ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?	X			
Not deteriorated?		X		
Not heaved or below surrounding grade?	X			
20. No surface seal settling?	X			
21. Well clearly visible and labeled?	X			

Comments:

COULD NOT TAKE WATER LEVEL READING DUE TO BLOCKAGE

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD LOGS

PROJECT INFORMATION

Site: HENNEPIN
Client:
Project Number: 2023 024
Task #:
Start Date: 8/23/23
Time: 0931
Field Personnel: TRM SW
Finish Date:
Time: 1030

WELL INFORMATION

Well ID: 48
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
[illegible]											
PURGE	0937	0.1			~~20.9~~	~~7.63~~	~~0.601~~	~~1.93~~	~~5.23~~	~~163.4~~	CLEAR
SAMPLE	0943	0.75			20.9	7.63	0.601	1.93	5.23	163.4	↓
	0948				20.8	7.62	0.590	0.50	4.37	160.2	
	0953				20.7	7.62	0.589	0.24	3.28	157.0	
	0958				20.5	7.62	0.589	0.18	2.71	154.3	
	1003	2.25			20.7	7.62	0.589	0.15	2.22	152.0	
	1008				20.7	7.62	0.589	0.13	2.30	150.3	
	1013				20.7	7.62	0.589	0.12	2.09	148.7	
	1018	3			20.8	7.62	0.589	0.11	2.01	147.4	

NOTES (continued)

* WELL HAS OBSTRUCTION INSIDE CASING. COULD NOT MEASURE WATER
SAMPLE @ - 1020
FI - UNDRNG

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @ 1050			X	
Well Number	HEN-405				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		Y		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?			↓	
10. No water in the flushmount?			↓	
11. Is the well cap lockable?			↓	
12. Is there a lock present?			↓	

All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?		X	X	
13. No obstructions in well?	✓	X		
14. No plant roots or vegetation in well?		↓		
15. No sediment in bottom of well?		↓		
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	30.92 ft			
General Condition				
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		↓		
Not heaved or below surrounding grade?		↓		
20. No surface seal settling?		↓		
21. Well clearly visible and labeled?	X			

Comments:

37.92'
DTW: ~~30.92 ft~~ pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: HENNCP2 | Client:
Project Number: 2023 0711 | Task #: | Start Date: 8/23/23 | Time: 0820
Field Personnel: C TREMBLAY | Finish Date: 8/23/23 | Time: 0978

WELL INFORMATION

Well ID: 405
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	0832		37.92	0							
PURGE	0836	0.1	37.42	0							CLEAR
SAMPLE	0841		37.92	0	19.0	7.89	0.581	2.20	4.25	149.6	
	0846	1.5	37.92	0	18.8	7.89	0.579	0.41	3.29	143.4	
	0851		37.92	0	18.7	7.88	0.579	0.44	2.58	139.1	
	0856		37.92	0	18.7	7.88	0.579	0.37	2.16	135.7	
	0901	2.75	37.92	0	18.8	7.88	0.579	0.37	2.13	133.5	

NOTES (continued)

SAMPLE @ 0905

FT - WADING

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

Monitoring Well Evaluation Checklist

Site	HENNEPIN	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/24/23			X	
Well Number	HGN 35				

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?		X		
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?		X		
If present, how much sediment?		X		
16. Installed as total depth.	ft			
17. Measured total depth of well.	ft			
	ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		X		
Not heaved or below surrounding grade?		X		
20. No surface seal settling?		X		
21. Well clearly visible and labeled?	X			

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: ____ Client: ____
Project Number: ____ Task #: ____ Start Date: 8/24 Time: 0930
Field Personnel: TREMBLAY Finish Date: 8/24 Time: 1038

WELL INFORMATION

Well ID: HEN 35
Casing ID: ____ inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PURGE	0940	0.1			± 3%	± 1	3%	10%	10%	±10	CLEAR
SAMPLE	0946				16.5	7.10	0.926	8.28	14.30	159.9	
	0951				16.2	7.04	0.918	6.78	15.97	169.8	
	0956	1.0			16.3	7.03	1.369	2.16	7.72	163.8	
	1001				16.2	7.03	1.378	1.87	2.67	162.0	
	1006	2.0			16.2	7.03	1.358	1.47	2.81	161.7	
	~~1011~~										

NOTES (continued)

F1 - ~~UNDR~~ UNDR
SAMPLE @ 1010

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

Monitoring Well Evaluation Form

Site	~~Hooper~~ Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/24/23			X	
Well Number	HEN-52				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			
If present, how much sediment?	~ ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	~ ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/24/23 Time: 0905
Field Personnel: Allison Beckett
Finish Date: 8/24/23 Time: 1020

WELL INFORMATION

Well ID: HEN-S2
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0	0909	0			21.5	7.10	0.635	7.57	5.56	147.9	Clear
	0914				23.6	7.01	0.605	2.02	5.95	152.3	↓
	0919	1.0			23.8	7.06	0.609	1.39	4.68	149.7	
	0924				23.9	7.05	0.612	1.21	4.27	147.2	
	0929	2.0			23.9	7.04	0.613	1.03	4.25	146.5	
25	0934				24.0	7.04	0.614	1.96	4.08	145.8	

NOTES (continued)

Samples taken @0940

Ferrous iron @1011 : Under range

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

Monitoring Well Evaluation Checklist

Site	HENNEPIN, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/24/23 @ 1400				
Well Number	HEN-8D				

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				
Flushmount Monitoring Wells				
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells				
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	~ ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	~ ft			
General Condition				
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?				
21. Well clearly visible and labeled?	X			

Comments:

DTW on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/24/23 Time: 1140
Field Personnel: Allison Beckett
Finish Date: Time: 1311

WELL INFORMATION

Well ID: HEN-8VD
Casing ID: 2 inches

EVENT TYPE

- [ ] Well Development
- [ ] Well Volume Approach Sampling
- [x] Low-Flow / Low Stress Sampling
- [ ] Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

	Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0		1154				18.7	7.03	1.336	6.45	4.29	182.5	Clear
		1159				17.7	6.64	1.426	2.06	6.88	193.7	
		1204				17.7	6.58	1.433	0.98	5.34	194.0	↓
		1209	1.0			17.4	6.58	1.436	0.76	4.60	193.0	
		1214				17.5	6.58	1.432	0.75	4.57	192.4	
25		1219	2.0			17.3	6.59	1.435	0.63	4.32	192.0	

NOTES (continued)

Samples taken @ 1225

Ferrous iron sample @ 1232: underrange

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

Monitoring Well Field Observation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	3/24/23 1355			X	
Well Number	HEN-07				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				

	Yes	No	NA
3. Are there weep holes in outer casing?		X	
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?			
7. Bumper posts in good condition?			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?			
15. No sediment in bottom of well?			

If present, how much sediment?	ft
16. Installed as total depth.	ft
17. Measured total depth of well.	ft

General Condition	Yes	No	NA
18. Concrete pad installed?		X	
19 . Concrete pad			
Slope away form casing?			X
Not deteriorated?			
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: 0ft appr

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client:
Project Number:
Task #:
Start Date: 8/24/23 Time: 1320
Field Personnel: Allison Beckett
Finish Date: Time: 1430

WELL INFORMATION

Well ID: HEN-07
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1332				14.4	6.98	0.727	5.73	5.16	166.3	clear
	1337				14.0	6.97	0.698	4.25	4.45	174.5	
	1342	2.0			13.9	6.96	0.701	4.20	4.09	176.6	
	1347				13.9	6.94	0.700	4.16	3.85	178.7	
	1352	3.0			13.8	6.93	0.699	4.16	3.57	179.6	
	1357				13.8	6.91	0.697	4.15	3.55	179.9	

NOTES (continued)

Samples taken @1400

Ferrous iron sample @1430: Under range

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/24/23 @ 1452			X	
Well Number	HEN-03				

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				
Flushmount Monitoring Wells	Yes	No	NA	
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?				
All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft			
General Condition	Yes	No	NA	
18. Concrete pad installed?		X		
19 . Concrete pad				
Slope away form casing?			X	
Not deteriorated?				
Not heaved or below surrounding grade?				
20. No surface seal settling?				
21. Well clearly visible and labeled?	X			

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Rambol
Project Number:
Task #:
Start Date: 8/21/24 Time: 1435
Field Personnel: Allison Bell
Finish Date: 8/21/24 Time: 1620

WELL INFORMATION

Well ID: 08
Casing ID: inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1443				14[illegible].7	6.62	1.228	1.54	3.85	197.1	clear
	1449				14.6	6.58	1.239	1.30	3.61	194.1	↓
	1453	2.5			14.7	6.69	[illegible]1.239	1.22	3.53	188.9	
	1458				14.6	6.69	1.243	1.19	3.50	188.1	
	1503				14.6	6.72	1.244	1.17	3.49	188.6	
	1508				14.7	6.72	1.241	1.16	3.49	188.6	↓

NOTES (continued)

Samples taken @ 1510

Ferrous iron sampled @ 1530: under range

dupe @ 1510

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

Monitoring Well Evaluation Checklist

Site		Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/24/23			X	
Well Number	27				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose				
2. Inner casing		X		
Not corroded		↓		
Not dented				
Not cracked				
Not loose				

	Yes	No	NA
3. Are there weep holes in outer casing?		X	
4. Weep holes able to drain?			X
5. Is there a lockable cap present?	X		
6. Is there a lock present?	X		
7. Bumper posts in good condition?	X		

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA	
Downhole Condition		X		
12. Water level measuring point clearly marked?		↓		
13. No obstructions in well?				
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?				
If present, how much sediment?				ft
16. Installed as total depth.				ft
17. Measured total depth of well.				ft

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/24 Time: 0820

Field Personnel: TREMBLAY Finish Date: _____ Time: 0921

WELL INFORMATION

Well ID: HEN 27

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
~~0824~~											
PURGE	0824	0.1									CLEAR
SAMPLE	0828				12.9	7.21	0.819	0.50	13.75	0.1	
	0833	1			13.0	7.22	0.817	0.09	23.15	-20.3	
	0838				13.5	7.24	0.813	0.04	45.33	-29.8	
	0843				12.8	7.32	0.816	0.04	46.72	-31.5	
	0848	2.5			12.4	7.33	0.816	0.06	47.09	-32.9	
	0853	3.0			12.5	7.33	0.816	0.07	48.89	-33.7	
	0854										

NOTES (continued)

FOUNDER

SAMPLED 0900

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @ 1200			X	
Well Number	HEN-02				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	47.10 ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	N/A
Not deteriorated?		↓	
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: 41.84ft pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number: ______ Task #: ______
Start Date: 8/24/2023 Time: 1025
Field Personnel: Allison Beckett
Finish Date: 8/24/2023 Time: 1120

WELL INFORMATION

Well ID: HEN-02
Casing ID: 2 inches

EVENT TYPE

- [ ] Well Development
- [ ] Well Volume Approach Sampling
- [x] Low-Flow / Low Stress Sampling
- [ ] Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1032		41.17		15.4	7.12	0.679	5.70	5.80	156.5	Clear
	1037		41.17		14.2	6.81	0.687	0.63	5.08	172.7	↓
	1042	2.0	41.17		14.0	6.78	0.685	0.38	5.12	174.3	↓
	1047		41.16		14.1	6.81	0.686	0.31	4.36	172.3	↓
	1052	3.0	41.15		14.0	6.83	0.684	0.27	3.99	170.8	↓
	1057				14.0	6.83	0.686	0.27	4.17	170.1	↓
	1102	4.0			14.0	6.83	0.685	0.24	3.85	169.1	↓

NOTES (continued)

Samples taken @ 1105

NO FERROUS IRON SAMPLE

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	9/21/23 @ 1010			X	
Well Number	HEN-XPW02-Pore				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition	~		~
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?			
If present, how much sediment?	~ ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	19 ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad	~		~
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: 14.39 ft.

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/24/23 Time: 1252

Field Personnel: TREMBLAY Finish Date: _____ Time: 1450

WELL INFORMATION

Well ID: XPW02

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1256	4	14.03								
PURGE	1304	0.1	14.19	-0.16							CLEAR
SAMPLE	1308	1.0	14.58	-0.39	19.4	12.03	3.071	0.91	89.87	-116.0	
	1313		14.92	-0.36	19.2	12.13	3.111	0.21	59.77	-155.7	
	1318		15.0	-0.18	19.4	12.14	3.109	0.14	40.43	-165.2	
	1323	2.5	15.1	-0.1	19.3	12.16	3.129	0.10	28.61	-168.5	
	1328		15.13	-0.03	19.8	12.16	3.146	0.12	23.94	-157.5	
	1333		15.15	-0.02	19.7	12.17	3.163	0.12	22.84	-152.3	
	1338	3.25	15.15	0	19.7	12.17	3.191	0.12	23.05	-148.4	

NOTES (continued)

FI - 0.109

SAMPLE - 1345

EB - 1345

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @ 1005			X	
Well Number	~~HenXPW01~~ - pore				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose				
2. Inner casing				
Not corroded		↓		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			↓
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	[redacted] ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	17.13 ft		

General Condition	Yes	No	NA
18. Concrete pad installed?			
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?			
20. No surface seal settling?			
21. Well clearly visible and labeled?	X		

Comments:

DTW: 9.45 ft Bottom of casing: 17.13 ft

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: ______ Client: ______
Project Number: ______ Task #: ______ Start Date: 8/24/23 Time: 1125
Field Personnel: C. Kempley Finish Date: 8/24/23 Time: 1250

WELL INFORMATION

Well ID: XPW01
Casing ID: ______ inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1125		9.45								
PURGE	1130	0.1	9.45	Ø							CLEAR
SAMPLE	1135	0.75	9.45	Ø	19.5	11.30	0.783	0.37	9.22	-241.6	
	1140		9.45	Ø	19.5	11.31	0.795	0.22	10.51	-242.4	
	1145	1.0	9.45	Ø	18.8	11.33	0.801	0.17	13.54	-244.1	
	1150		9.45	Ø	19.0	11.33	0.804	0.11	17.05	-248.5	
	1155		9.45	Ø	19.2	11.34	0.808	0.11	21.53	-259.5	
	1200	2.25	9.45	Ø	17.6	11.39	0.815	0.11	54.09	-271.9	
	1205		9.45	Ø	17.7	11.39	0.817	0.10	57.11	-278.6	
	1210	3.5	9.45	Ø	17.7	11.39	0.818	0.10	55.97	-279.1	

NOTES (continued)

SAMPLE @ 1215
F1 - UNDER
EQUIPMENT BLANK @ 1215

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @ 1020			X	
Well Number	HEN-XPW03-Pore				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells	Yes	No	NA
Downhole Condition	~	~	~
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	~ ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	19.11 ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad	~	~	~
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?		↓	
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

DTW: 9.86 ft.

* Major well repair are those that require a subcontractor or separate mobilization to complete

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/22 & 8/23 Time: 1455

Field Personnel: [illegible] Finish Date: _____ Time: _____

WELL INFORMATION

Well ID: XPW03

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PRE	1457		~~4.82~~								
	1500	1.0	5.16	-0.3	~~16.7~~	~~11.71~~	~~1.141~~	~~0.82~~	~~5.~~		
	1506		5.16	Ø	16.7	11.71	1.141	0.82	5.92	-3.2	
	1511		5.16	Ø	16.6	11.79	1.144	0.11	13.62	-22.1	
	1516	2	5.16	Ø	16.7	11.79	1.146	0.11	9.31	-30.8	
	1521		5.16	Ø	16.8	11.78	1.149	0.10	9.28	-37.3	
	1526	2.5	5.16	Ø	16.7	11.79	1.149	0.11	9.97	-41.9	
	1531										
	1536										

NOTES (continued)

FT UNDR

SAMPLE — 1530

EB — 1530

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

Monitoring Well Evaluation Checklist

Site	Hennepin	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @0955			X	
Well Number	10				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			X
10. No water in the flushmount?			X
11. Is the well cap lockable?			X
12. Is there a lock present?			X

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	48.65 ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

PTW: 48.28 ft Bottom of casing/top of pump 48.65

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/24/23 Time: 0810
Field Personnel: Allison Beckett
Finish Date: 8/24/23 Time: 6900

WELL INFORMATION

Well ID: HEN-10
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
0	0810		48.15		22.8	7.15	0.1019	1.52	4.08	138.6	clear
	0821		48.12		23.1	7.06	0.1022	0.73	4.50	144.6	↓
	0826	2.0	48.12		23.1	7.05	0.1024	0.57	7.100	144.2	
	0831		48.12		23.1	7.04	0.1025	0.55	10.15	142.8	
	0836	3.0	48.11		23.2	7.04	0.1025	0.53	4.50	141.8	
2.5	0841	3.5	48.11		23.2	7.04	0.1025	0.52	3.90	140.9	↓

NOTES (continued)

Samples taken @ 0845

NO FERROUS IRON SAMPLE

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @ 0930			X	
Well Number	50				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		✓		
Not dented		✓		
Not cracked		✓		
Not loose		✓		
2. Inner casing				
Not corroded		✓		
Not dented		✓		
Not cracked		✓		
Not loose		✓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		✓		
4. Weep holes able to drain?		✓		
5. Is there a lockable cap present?		✓		
6. Is there a lock present?		✓		
7. Bumper posts in good condition?		✓		

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			X
10. No water in the flushmount?			X
11. Is the well cap lockable?			X
12. Is there a lock present?			X

All Monitoring Wells	Yes	No	NA
Downhole Condition			X
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	✓		
19 . Concrete pad	✓		
Slope away form casing?		✓	
Not deteriorated?		✓	
Not heaved or below surrounding grade?		✓	
20. No surface seal settling?	✓		
21. Well clearly visible and labeled?	✓		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/25/23 Time: 1055
Field Personnel: Allison Beckett
Finish Date: 8/25/23 Time: 1200

WELL INFORMATION

Well ID: HEN-50
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (μs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
10	58				16.8	7.53	0.664	0.61	364.79	81.2	clear
11	03				16.7	7.50	0.663	0.59	384.6	112.5	↓
11	08	2.0			16.8	7.49	0.664	0.17	4.33	109.3	
11	13				16.9	7.49	0.665	0.14	4.31	98.5	
11	18	4.0			16.7	7.48	0.665	0.12	4.06	87.2	
11	23				16.7	7.47	0.665	0.12	3.98	88.0	

NOTES (continued)

Samples taken @ 1125
Ferrous iron sample @ 1140: underrange

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

Monitoring Well Evaluation Checklist

Site		Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/25/23			X	
Well Number	HEN 34				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA	
Downhole Condition				
12. Water level measuring point clearly marked?		X		
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?		X		
15. No sediment in bottom of well?		X		
If present, how much sediment?		X		ft
16. Installed as total depth.				ft
17. Measured total depth of well.				ft
General Condition				
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?		X		
Not heaved or below surrounding grade?		X		
20. No surface seal settling?		X		
21. Well clearly visible and labeled?	X			

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER MONITORING

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/25/23 Time: 1053

Field Personnel: TREMBLAY Finish Date: 8/25/23 Time: 1145

WELL INFORMATION

Well ID: HEN 34

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PURGE	~~1055~~	0-1			~~+3.2~~	~~7.21~~	~~0.448~~	~~2.06~~	~~14.02~~	~~116.2~~	CLEAR
	1100				13.7	7.21	0.948	2.06	14.02	-116.2	CLEAR
	1105				12.8	7.09	0.966	0.25	7.80	-108.6	
	1110	2.5			12.8	7.08	0.969	0.21	6.54	-110.4	
	1115				12.7	7.08	0.971	0.22	5.51	-111.2	
	1120				12.8	7.08	0.972	0.20	4.81	-110.7	
	1125										
	1130										

NOTES (continued)

FI - UNDERRUN

SAMPLE @ 1125

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

Monitoring Well Evaluation Checklist

Site		Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/25/23			X	
Well Number	HEN 49				

Stick-up Monitoring Wells	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X	X	
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	X			
7. Bumper posts in good condition?	X			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
If present, how much sediment?		X	
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		
	ft		
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

BATTERY WAS REPLACED + WOULD NOT CONNECT. WELL WAS GAUGED MANUALLY

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/25/23 Time: 0925
Field Personnel: Allison Bickel
Finish Date: 8/25/23 Time: 1055

WELL INFORMATION

Well ID: HEN-49
Casing ID: 2 inches

EVENT TYPE

- [ ] Well Development
- [ ] Well Volume Approach Sampling
- [x] Low-Flow / Low Stress Sampling
- [ ] Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
09	32		19.65		15.5	7.21	0.700	1.40	72.1	-1.5	Clear
09	37		19.65		15.3	7.13	0.698	0.22	92.38	38.0	Brown & murky
09	42	2.0	19.65		15.4	7.12	0.698	0.17	110.79	48.6	↓
09	47		19.64		15.4	7.12	0.698	0.15	122.4	57.7	
09	52		19.65		15.4	7.12	0.697	0.13	121.9	58.8	
09	57	5.0	19.64		15.4	7.12	0.698	0.12	122.9	59.1	
10	02		19.65		15.3	7.12	0.698	0.11	123.6	58.2	

NOTES (continued)

Samples taken @ 1005
Ferrous iron sample @ 1030: underrange

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

Monitoring Well Evaluation Checklist

Site	Hennepin 2	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/23/23 0815			X	
Well Number	#EN-10				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked		↓		
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?	↓			

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			↓
11. Is the well cap lockable?			↓
12. Is there a lock present?			↓

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	— ft		
General Condition			
18. Concrete pad installed?	~~X~~	X	
19 . Concrete pad			
Slope away form casing?			X
Not deteriorated?			↓
Not heaved or below surrounding grade?			↓
20. No surface seal settling?			X
21. Well clearly visible and labeled?	X		

Comments:

DTW: 53.90, dead batteries/Transducer is fried

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/28/23 Time: 0800
Field Personnel: Allison Beckett
Finish Date: 8/28/23 Time: 0915

WELL INFORMATION

Well ID: HEN-16
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	0808		53.90		19.9	7.47	0.550	8.13	4.40	114.5	clear
	0813		53.90		22.5	7.23	0.553	1.41	3.88	131.4	
	0818		53.90		22.7	7.23	0.554	1.21	3.92	131.1	
	0823	1.0	53.90		22.8	7.23	0.556	0.53	3.85	126.8	
	0828		53.90		22.8	7.23	0.556	0.41	3.89	123.5	
	0833	2.0	53.90		22.8	7.23	0.556	0.37	3.99	122.7	↓

NOTES (continued)

Samples taken @ 0835

Ferrous iron sample @0850 : Under range

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/28/23 @ 0915			X	
Well Number	HEN-17				

	Yes	No	NA	Comments
Stick-up Monitoring Wells				
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		✓		
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose		✓		
3. Are there weep holes in outer casing?		✓		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?	✓			
Flushmount Monitoring Wells				
8. Can the lid be secured tightly?			X	
9. Does the lid have a gasket that seals?				
10. No water in the flushmount?				
11. Is the well cap lockable?				
12. Is there a lock present?			✓	
All Monitoring Wells				
Downhole Condition				
12. Water level measuring point clearly marked?			X	
13. No obstructions in well?		X		
14. No plant roots or vegetation in well?				
15. No sediment in bottom of well?		✓		
If present, how much sediment?	— ft			
16. Installed as total depth.	ft			
17. Measured total depth of well.	— ft			
General Condition				
18. Concrete pad installed?	X			
19 . Concrete pad				
Slope away form casing?		X		
Not deteriorated?	X			cracked
Not heaved or below surrounding grade?	X			cracked
20. No surface seal settling?		X		
21. Well clearly visible and labeled?	X			

Comments:

DTW: on app

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/28/23
Time: 0905
Field Personnel: Allison Burkett
Finish Date:
Time: 1030

WELL INFORMATION

Well ID: HEN-17
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	0911				22.6	7.15	0.565	5.91	5.06	137.9	clear
	0916				22.7	7.35	0.514	4.13	3.97	140.7	"
	0921				22.5	7.35	0.508	10.06	4.08	144.3	
	0926	1.0			22.5	7.35	0.508	10.00	3.96	146.5	
	0931				22.4	7.34	0.507	5.88	3.99	147.6	
	0936	2.0			22.4	7.34	0.506	5.76	4.02	148.2	↓

NOTES (continued)

Samples taken @ 0940

Ferrous iron sample @ 0945: under range

QUPE @ 0940

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

Monitoring Well Evaluation Checklist

Site
Inspection Date 8/28
Well Number 03R

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		
2. Inner casing				
Not corroded		X		
Not dented		X		
Not cracked		X		
Not loose		X		

	Yes	No	NA
3. Are there weep holes in outer casing?		X	
4. Weep holes able to drain?	X		
5. Is there a lockable cap present?	X		
6. Is there a lock present?	X		
7. Bumper posts in good condition?	X		

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
		X	
If present, how much sediment?	ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	ft		

	Yes	No	NA
General Condition			
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/28 Time: 0906

Field Personnel: TREMBLAY Finish Date: 8/28 Time: 1121

WELL INFORMATION

Well ID: 03R

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☐ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
PURGE	0915	0.1							~~10.85~~	~~115~~	CLEAR
SAMPLE	0920				16.2	7.22	0.655	0.81	10.85	~~115~~ 114.1	
	0925	1.0			18.2	7.21	0.653	0.32	5.46	137.8	
	0930				16.2	7.21	0.653	0.22	3.81	132.9	
	0935				18.3	7.21	0.653	0.23	2.99	129.4	
	0940	2.25			16.3	7.20	0.652	0.21	2.56	126.9	
	0945										
	0950										
	0955										

NOTES (continued)

FT - UNDER SAMPLE PUMP

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

Monitoring Well Evaluation Checklist

Site
Inspection Date 8/28/23
Well Number 18S

Major wells repairs* required to maintain well integrity?

Yes	No	NA
	X	

Stick-up Monitoring Wells

	Yes	No	NA	Comments
1. Outer protective Casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
2. Inner casing				
Not corroded		X		
Not dented				
Not cracked				
Not loose				
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?				
7. Bumper posts in good condition?				

Flushmount Monitoring Wells

	Yes	No	NA
8. Can the lid be secured tightly?			
9. Does the lid have a gasket that seals?			
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells

	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?		X	
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		X	
15. No sediment in bottom of well?		X	
16. Installed as total depth.		X	
17. Measured total depth of well.		X	

If present, how much sediment?	ft
16. Installed as total depth.	ft
17. Measured total depth of well.	ft

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		X	
Not heaved or below surrounding grade?		X	
20. No surface seal settling?		X	
21. Well clearly visible and labeled?	X		

Comments:

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: _____ Client: _____

Project Number: _____ Task #: _____ Start Date: 8/28/23 Time: 0805

Field Personnel: TRM/SLM Finish Date: 8/28/23 Time: 0905

WELL INFORMATION

Well ID: 185

Casing ID: _____ inches

EVENT TYPE

☐ Well Development ☒ Low-Flow / Low Stress Sampling

☐ Well Volume Approach Sampling ☐ Other (Specify):

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
purge	0810	0.25									CLEAR
	0811				16.8	7.52	0.666	2.30	5.45	104.0	
	0816				16.7	7.39	0.661	0.42	3.20	103.2	
	0821				16.8	7.39	0.661	0.26	2.61	98.1	
	0826	2.25			16.8	7.38	0.661	0.22	2.49	95.5	
	0831	2.5			16.8	7.38	0.661	0.20	2.46	94.1	
	0836										
	0841										
	0846										

NOTES (continued)

FI-UNDR

0835 SMPLE

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

Monitoring Well Evaluation Checklist

Site	Hennepin, IL	Major wells repairs* required to maintain well integrity?	Yes	No	NA
Inspection Date	8/21/23 @1125			X	
Well Number	HEN-455				

Stick-up Monitoring Wells	Yes	No	NA	**Comments**
1. Outer protective Casing				
Not corroded		X		
Not dented		↓	↓	
Not cracked				
Not loose		↓	↓	
2. Inner casing				
Not corroded		X		
Not dented		↓		
Not cracked				
Not loose		↓		
	Yes	No	NA	
3. Are there weep holes in outer casing?		X		
4. Weep holes able to drain?			X	
5. Is there a lockable cap present?	X			
6. Is there a lock present?	↓			
7. Bumper posts in good condition?				

Flushmount Monitoring Wells	Yes	No	NA
8. Can the lid be secured tightly?			X
9. Does the lid have a gasket that seals?			↓
10. No water in the flushmount?			
11. Is the well cap lockable?			
12. Is there a lock present?			

All Monitoring Wells	Yes	No	NA
Downhole Condition			
12. Water level measuring point clearly marked?			X
13. No obstructions in well?		X	
14. No plant roots or vegetation in well?		↓	
15. No sediment in bottom of well?		↓	
If present, how much sediment?	— ft		
16. Installed as total depth.	ft		
17. Measured total depth of well.	30.19 ft		

General Condition	Yes	No	NA
18. Concrete pad installed?	X		
19 . Concrete pad			
Slope away form casing?		X	
Not deteriorated?		↓	
Not heaved or below surrounding grade?		↓	
20. No surface seal settling?		↓	
21. Well clearly visible and labeled?	X		

Comments:

DTW: 18.98 pump installed

* Major well repair are those that require a subcontractor or separate mobilization to complete

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Hennepin, IL
Client: Ramboll
Project Number:
Task #:
Start Date: 8/28/23 Time: 1040
Field Personnel: Allison Beckett
Finish Date: 8/28/23 Time: 1140

WELL INFORMATION

Well ID: HEN-455
Casing ID: 2 inches

EVENT TYPE

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

WATER QUALITY INDICATOR PARAMETERS (continued)

Sampling Stage	Time (military)	Volume Removed (gallons)	Depth to Water (Feet)	Drawdown (Feet)	Temp. (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
	1044		18.98		19.3	7.32	0.706	3.27	9.13	57.9	clear
	1049		18.97		19.1	7.17	0.671	0.25	148.24	108.9	Brown/murky
	1054	2.5	18.98		19.1	7.17	0.640	0.22	130.16	111.7	↓
	1059		18.98		19.1	7.16	0.640	0.19	89.9	116.1	
	1104		18.98		19.1	7.16	0.640	0.18	87.30	118.6	
	1109	5.0	18.98		19.1	7.16	0.640	0.17	54.30	119.2	
	1114		18.98		19.1	7.16	0.640	0.17	55.66	120.2	↓

NOTES (continued)

Samples taken @ 1115

Ferrous iron sample @1130: underrange

ABBREVIATIONS

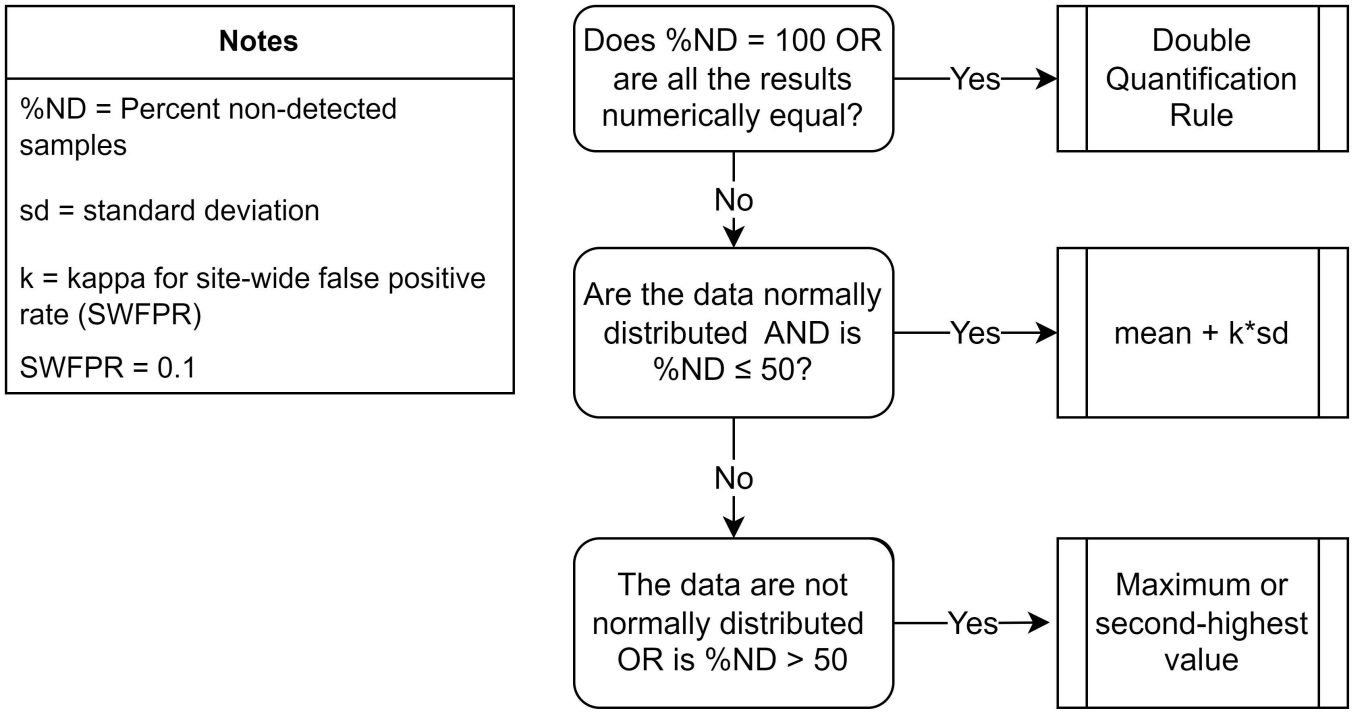
Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

SAR-3: Episodic Depth to Groundwater Measurements
All DTWs on SAR-3 must be collected within 24 hours.
Plant: HEN
Event: HEN-23Q3 Rev 0

Well	Unique ID	Date	Time	Measured Depth to Water (ft bmp)	Comments	Initials
02	HEN_02	8/21/23	1200	41.84		CT
04R	HEN_04R	8/21/23	1035	37.08		CT
05R	HEN_05!R	8/21/23	1105	38.69		CT
05DR	HEN_05&DR	8/21/23	1115	38.73		CT
06	HEN_06	8/21/23	1140	20.8		CT
10	HEN_10	8/21/23	0955	48.28		CT
11	HEN_11	8/21/23	0950	48.33		CT
15	HEN_15	8/21/23	1030	47.89		CT
19S	HEN_19#S	8/21/23	1045	37.2		CT
19D	HEN_19&D	8/21/23	1040	37.34		CT
25	HEN_25	8/22/23	0945	14.02 [illegible]	[illegible]D	CT
26	HEN_26	8/22/23	0940	13.26		CT
30	HEN_30	8/22/23	1000	4.85		CT
31	HEN_31	8/22/23	0955	4.85		CT
33	HEN_33	8/22/23	1018	2.8		CT
36	HEN_36	8/22/23	0930	13.58		CT
40S	HEN_40#S	8/21/23	1050	37.92		CT
45S	HEN_45#S	8/21/23	1125	18.98		CT
48	HEN_48	8/21/23	1055	N/A	* COULD NOT MEASURE DUE TO BLOCK	CT
XPW01	HEN_XPW01_pore	8/21/23	1005	9.45		CT
XPW02	HEN_XPW02_pore	8/21/23	1010	14.14		CT
XPW03	HEN_XPW03_pore	8/21/23	1020	4.86		CT
XSG01	HEN_XSG01					
SG02	HEN_YSG_ILRIVER					

U:6/21/23 GKJ

APPENDIX B
STATISTICAL METHODOLOGY FOR DETERMINATION OF BACKGROUND VALUES



When data are not normally distributed or %ND > 50, the maximum value is used if the background sample size is < 60. Where the background sample size is ≥ 60, the achievable per-constituent false positive rates for the maximum and second-highest background values will be compared, and the background value with the achievable per-constituent false positive rate that is closest to, but does not exceed, the target per-constituent false positive rate of 0.015% is used.

APPENDIX C
BACKGROUND UPDATE SUPPORTING INFORMATION

APPENDIX C1
BACKGROUND UPDATE SUPPORTING INFORMATION
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Parameter	Statistic	Previous	New
Boron, total	Sample Count	24	55
	Percent Non-Detect	0	0
	Date Range	12/08/2015 - 06/09/2017	02/24/2021 - 09/14/2022
	Data Normality	Normal	Log Normal
	Trend	No Trend	No Trend
Calcium, total	Sample Count	24	55
	Percent Non-Detect	0	0
	Date Range	12/08/2015 - 06/09/2017	02/24/2021 - 09/14/2022
	Data Normality	Normal	Non-Normal
	Trend	No Trend	No Trend
Chloride, total	Sample Count	24	55
	Percent Non-Detect	0	0
	Date Range	12/08/2015 - 06/09/2017	02/24/2021 - 09/14/2022
	Data Normality	Normal	Non-Normal
	Trend	No Trend	No Trend
Fluoride, total	Sample Count	24	55
	Percent Non-Detect	58	5
	Date Range	12/08/2015 - 06/09/2017	02/24/2021 - 09/14/2022
	Data Normality	Non-Normal	Non-Normal
	Trend	No Trend	No Trend
Sulfate, total	Sample Count	24	55
	Percent Non-Detect	0	0
	Date Range	12/08/2015 - 06/09/2017	02/24/2021 - 09/14/2022
	Data Normality	Normal	Non-Normal
	Trend	No Trend	No Trend
Total Dissolved Solids	Sample Count	24	52
	Percent Non-Detect	0	0
	Date Range	12/08/2015 - 06/09/2017	02/24/2021 - 09/14/2022
	Data Normality	Normal	Non-Normal
	Trend	No Trend	No Trend
pH (field)	Sample Count	24	55
	Percent Non-Detect	0	0
	Date Range	12/08/2015 - 06/09/2017	02/24/2021 - 09/14/2022
	Data Normality	Non-Normal	Normal
	Trend	No Trend	Downward

Notes:
Two background wells (16 and 17, installed in 1995) were added to the monitoring system in 2023.
Conclusion: New data were used to calculated updated background values.

APPENDIX C2
ANALYTICAL RESULTS USED IN BACKGROUND CALCULATIONS
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
07	02/24/2021	Antimony, total	mg/L	0.001 U
07	03/18/2021	Antimony, total	mg/L	0.001 U
07	04/07/2021	Antimony, total	mg/L	0.001 U
07	05/05/2021	Antimony, total	mg/L	0.002 U
07	06/08/2021	Antimony, total	mg/L	0.001 U
07	06/24/2021	Antimony, total	mg/L	0.001 U
07	07/13/2021	Antimony, total	mg/L	0.001 U
07	08/03/2021	Antimony, total	mg/L	0.001 U
07	09/09/2021	Antimony, total	mg/L	0.001 U
07	12/08/2021	Antimony, total	mg/L	0.001 U
07	03/22/2022	Antimony, total	mg/L	0.001 U
07	06/08/2022	Antimony, total	mg/L	0.0004 U
07	09/14/2022	Antimony, total	mg/L	0.0004 U
07	02/24/2021	Arsenic, total	mg/L	0.001 U
07	03/18/2021	Arsenic, total	mg/L	0.001 U
07	04/07/2021	Arsenic, total	mg/L	0.001 U
07	05/05/2021	Arsenic, total	mg/L	0.001 U
07	06/08/2021	Arsenic, total	mg/L	0.001 U
07	06/24/2021	Arsenic, total	mg/L	0.001 U
07	07/13/2021	Arsenic, total	mg/L	0.001 U
07	08/03/2021	Arsenic, total	mg/L	0.001 U
07	09/09/2021	Arsenic, total	mg/L	0.001 U
07	12/08/2021	Arsenic, total	mg/L	0.001 U
07	03/22/2022	Arsenic, total	mg/L	0.001 U
07	06/08/2022	Arsenic, total	mg/L	0.0004 U
07	09/14/2022	Arsenic, total	mg/L	0.0004 U
07	02/24/2021	Barium, total	mg/L	0.139
07	03/18/2021	Barium, total	mg/L	0.133
07	04/07/2021	Barium, total	mg/L	0.123
07	05/05/2021	Barium, total	mg/L	0.131
07	06/08/2021	Barium, total	mg/L	0.127
07	06/24/2021	Barium, total	mg/L	0.109
07	07/13/2021	Barium, total	mg/L	0.124
07	08/03/2021	Barium, total	mg/L	0.110
07	09/09/2021	Barium, total	mg/L	0.131
07	12/08/2021	Barium, total	mg/L	0.107
07	03/22/2022	Barium, total	mg/L	0.104
07	06/08/2022	Barium, total	mg/L	0.125
07	09/14/2022	Barium, total	mg/L	0.162
07	02/24/2021	Beryllium, total	mg/L	0.001 U
07	03/18/2021	Beryllium, total	mg/L	0.001 U
07	04/07/2021	Beryllium, total	mg/L	0.001 U
07	05/05/2021	Beryllium, total	mg/L	0.001 U
07	06/08/2021	Beryllium, total	mg/L	0.001 U
07	06/24/2021	Beryllium, total	mg/L	0.001 U
07	07/13/2021	Beryllium, total	mg/L	0.001 U

APPENDIX C2
ANALYTICAL RESULTS USED IN BACKGROUND CALCULATIONS
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
07	08/03/2021	Beryllium, total	mg/L	0.001 U
07	09/09/2021	Beryllium, total	mg/L	0.001 U
07	12/08/2021	Beryllium, total	mg/L	0.001 U
07	03/22/2022	Beryllium, total	mg/L	0.001 U
07	06/08/2022	Beryllium, total	mg/L	0.0002 U
07	09/14/2022	Beryllium, total	mg/L	0.0002 U
07	02/24/2021	Cadmium, total	mg/L	0.001 U
07	03/18/2021	Cadmium, total	mg/L	0.001 U
07	04/07/2021	Cadmium, total	mg/L	0.001 U
07	05/05/2021	Cadmium, total	mg/L	0.001 U
07	06/08/2021	Cadmium, total	mg/L	0.001 U
07	06/24/2021	Cadmium, total	mg/L	0.001 U
07	07/13/2021	Cadmium, total	mg/L	0.001 U
07	08/03/2021	Cadmium, total	mg/L	0.001 U
07	09/09/2021	Cadmium, total	mg/L	0.001 U
07	12/08/2021	Cadmium, total	mg/L	0.001 U
07	03/22/2022	Cadmium, total	mg/L	0.001 U
07	06/08/2022	Cadmium, total	mg/L	0.0002 U
07	09/14/2022	Cadmium, total	mg/L	0.0002 U
07	02/24/2021	Chromium, total	mg/L	0.0015 U
07	03/18/2021	Chromium, total	mg/L	0.0015 U
07	04/07/2021	Chromium, total	mg/L	0.0015 U
07	05/05/2021	Chromium, total	mg/L	0.001 U
07	06/08/2021	Chromium, total	mg/L	0.0015 U
07	06/24/2021	Chromium, total	mg/L	0.0015 U
07	07/13/2021	Chromium, total	mg/L	0.0015 U
07	08/03/2021	Chromium, total	mg/L	0.0015 U
07	09/09/2021	Chromium, total	mg/L	0.0015 U
07	12/08/2021	Chromium, total	mg/L	0.0015 U
07	03/22/2022	Chromium, total	mg/L	0.0015 U
07	06/08/2022	Chromium, total	mg/L	0.0008 J
07	09/14/2022	Chromium, total	mg/L	0.0011 J
07	02/24/2021	Cobalt, total	mg/L	0.147
07	03/18/2021	Cobalt, total	mg/L	0.129
07	04/07/2021	Cobalt, total	mg/L	0.0962
07	05/05/2021	Cobalt, total	mg/L	0.105
07	06/08/2021	Cobalt, total	mg/L	0.0542
07	06/24/2021	Cobalt, total	mg/L	0.0479
07	07/13/2021	Cobalt, total	mg/L	0.0307
07	08/03/2021	Cobalt, total	mg/L	0.0257
07	09/09/2021	Cobalt, total	mg/L	0.0164
07	12/08/2021	Cobalt, total	mg/L	0.00530
07	03/22/2022	Cobalt, total	mg/L	0.00180
07	06/08/2022	Cobalt, total	mg/L	0.0121
07	09/14/2022	Cobalt, total	mg/L	0.0676
07	02/24/2021	Fluoride, total	mg/L	0.120

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ANALYTICAL RESULTS USED IN BACKGROUND CALCULATIONS
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HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
07	03/18/2021	Fluoride, total	mg/L	0.110
07	04/07/2021	Fluoride, total	mg/L	0.130
07	05/05/2021	Fluoride, total	mg/L	0.120
07	06/08/2021	Fluoride, total	mg/L	0.120
07	06/24/2021	Fluoride, total	mg/L	0.130
07	07/13/2021	Fluoride, total	mg/L	0.130
07	08/03/2021	Fluoride, total	mg/L	0.130
07	09/09/2021	Fluoride, total	mg/L	0.110
07	12/08/2021	Fluoride, total	mg/L	0.120
07	03/22/2022	Fluoride, total	mg/L	0.120
07	06/08/2022	Fluoride, total	mg/L	0.120
07	09/14/2022	Fluoride, total	mg/L	0.110
07	02/24/2021	Lead, total	mg/L	0.001 U
07	03/18/2021	Lead, total	mg/L	0.001 U
07	04/07/2021	Lead, total	mg/L	0.001 U
07	05/05/2021	Lead, total	mg/L	0.001 U
07	06/08/2021	Lead, total	mg/L	0.001 U
07	06/24/2021	Lead, total	mg/L	0.001 U
07	07/13/2021	Lead, total	mg/L	0.001 U
07	08/03/2021	Lead, total	mg/L	0.001 U
07	09/09/2021	Lead, total	mg/L	0.001 U
07	12/08/2021	Lead, total	mg/L	0.001 U
07	03/22/2022	Lead, total	mg/L	0.001 U
07	06/08/2022	Lead, total	mg/L	0.0006 U
07	09/14/2022	Lead, total	mg/L	0.0006 U
07	02/24/2021	Lithium, total	mg/L	0.0105
07	03/18/2021	Lithium, total	mg/L	0.0107
07	04/07/2021	Lithium, total	mg/L	0.00960
07	05/05/2021	Lithium, total	mg/L	0.0103
07	06/08/2021	Lithium, total	mg/L	0.00970
07	06/24/2021	Lithium, total	mg/L	0.0100
07	07/13/2021	Lithium, total	mg/L	0.00870
07	08/03/2021	Lithium, total	mg/L	0.00910
07	09/09/2021	Lithium, total	mg/L	0.0100
07	12/08/2021	Lithium, total	mg/L	0.00840
07	03/22/2022	Lithium, total	mg/L	0.00980
07	06/08/2022	Lithium, total	mg/L	0.00890
07	09/14/2022	Lithium, total	mg/L	0.0105
07	02/24/2021	Mercury, total	mg/L	0.0002 U
07	03/18/2021	Mercury, total	mg/L	0.0002 U
07	04/07/2021	Mercury, total	mg/L	0.0002 U
07	05/05/2021	Mercury, total	mg/L	0.0002 U
07	06/08/2021	Mercury, total	mg/L	0.0002 U
07	06/24/2021	Mercury, total	mg/L	0.0002 U
07	07/13/2021	Mercury, total	mg/L	0.0002 U
07	08/03/2021	Mercury, total	mg/L	0.0002 U

APPENDIX C2
ANALYTICAL RESULTS USED IN BACKGROUND CALCULATIONS
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
07	09/09/2021	Mercury, total	mg/L	0.0002 U
07	12/08/2021	Mercury, total	mg/L	0.0002 U
07	03/22/2022	Mercury, total	mg/L	0.0002 U
07	06/08/2022	Mercury, total	mg/L	0.0001 U
07	09/14/2022	Mercury, total	mg/L	0.00006 U
07	02/24/2021	Molybdenum, total	mg/L	0.0015 U
07	03/18/2021	Molybdenum, total	mg/L	0.0015 U
07	04/07/2021	Molybdenum, total	mg/L	0.0015 U
07	05/05/2021	Molybdenum, total	mg/L	0.00117
07	06/08/2021	Molybdenum, total	mg/L	0.0015 U
07	06/24/2021	Molybdenum, total	mg/L	0.0015 U
07	07/13/2021	Molybdenum, total	mg/L	0.0015 U
07	08/03/2021	Molybdenum, total	mg/L	0.0015 U
07	09/09/2021	Molybdenum, total	mg/L	0.0015 U
07	12/08/2021	Molybdenum, total	mg/L	0.00160
07	03/22/2022	Molybdenum, total	mg/L	0.0015 U
07	06/08/2022	Molybdenum, total	mg/L	0.0006 U
07	09/14/2022	Molybdenum, total	mg/L	0.0007 J
07	02/24/2021	Radium 226 + Radium 228, total	pCi/L	0.880
07	03/18/2021	Radium 226 + Radium 228, total	pCi/L	1.21
07	04/07/2021	Radium 226 + Radium 228, total	pCi/L	0.895
07	05/05/2021	Radium 226 + Radium 228, total	pCi/L	0.202
07	06/08/2021	Radium 226 + Radium 228, total	pCi/L	1.73
07	06/24/2021	Radium 226 + Radium 228, total	pCi/L	1.72
07	07/13/2021	Radium 226 + Radium 228, total	pCi/L	1.27
07	08/03/2021	Radium 226 + Radium 228, total	pCi/L	0.661
07	09/09/2021	Radium 226 + Radium 228, total	pCi/L	1.14
07	12/08/2021	Radium 226 + Radium 228, total	pCi/L	0.787
07	03/22/2022	Radium 226 + Radium 228, total	pCi/L	0.852
07	06/08/2022	Radium 226 + Radium 228, total	pCi/L	0.983
07	09/14/2022	Radium 226 + Radium 228, total	pCi/L	1.67
07	02/24/2021	Selenium, total	mg/L	0.001 U
07	03/18/2021	Selenium, total	mg/L	0.001 U
07	04/07/2021	Selenium, total	mg/L	0.001 U
07	05/05/2021	Selenium, total	mg/L	0.001 U
07	06/08/2021	Selenium, total	mg/L	0.001 U
07	06/24/2021	Selenium, total	mg/L	0.001 U
07	07/13/2021	Selenium, total	mg/L	0.001 U
07	08/03/2021	Selenium, total	mg/L	0.001 U
07	09/09/2021	Selenium, total	mg/L	0.001 U
07	12/08/2021	Selenium, total	mg/L	0.001 U
07	03/22/2022	Selenium, total	mg/L	0.001 U
07	06/08/2022	Selenium, total	mg/L	0.0006 U
07	09/14/2022	Selenium, total	mg/L	0.0006 U
07	02/24/2021	Thallium, total	mg/L	0.002 U
07	03/18/2021	Thallium, total	mg/L	0.002 U

APPENDIX C2
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HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
07	04/07/2021	Thallium, total	mg/L	0.002 U
07	05/05/2021	Thallium, total	mg/L	0.001 U
07	06/08/2021	Thallium, total	mg/L	0.002 U
07	06/24/2021	Thallium, total	mg/L	0.002 U
07	07/13/2021	Thallium, total	mg/L	0.002 U
07	08/03/2021	Thallium, total	mg/L	0.002 U
07	09/09/2021	Thallium, total	mg/L	0.002 U
07	12/08/2021	Thallium, total	mg/L	0.002 U
07	03/22/2022	Thallium, total	mg/L	0.002 U
07	06/08/2022	Thallium, total	mg/L	0.001 U
07	09/14/2022	Thallium, total	mg/L	0.001 U
08	02/24/2021	Antimony, total	mg/L	0.001 U
08	03/18/2021	Antimony, total	mg/L	0.001 U
08	04/08/2021	Antimony, total	mg/L	0.001 U
08	05/06/2021	Antimony, total	mg/L	0.002 U
08	06/08/2021	Antimony, total	mg/L	0.001 U
08	06/24/2021	Antimony, total	mg/L	0.001 U
08	07/13/2021	Antimony, total	mg/L	0.001 U
08	08/03/2021	Antimony, total	mg/L	0.001 U
08	09/09/2021	Antimony, total	mg/L	0.001 U
08	12/08/2021	Antimony, total	mg/L	0.001 U
08	03/22/2022	Antimony, total	mg/L	0.001 U
08	06/07/2022	Antimony, total	mg/L	0.0004 U
08	09/14/2022	Antimony, total	mg/L	0.0004 U
08	02/24/2021	Arsenic, total	mg/L	0.001 U
08	03/18/2021	Arsenic, total	mg/L	0.001 U
08	04/08/2021	Arsenic, total	mg/L	0.001 U
08	05/06/2021	Arsenic, total	mg/L	0.001 U
08	06/08/2021	Arsenic, total	mg/L	0.001 U
08	06/24/2021	Arsenic, total	mg/L	0.001 U
08	07/13/2021	Arsenic, total	mg/L	0.001 U
08	08/03/2021	Arsenic, total	mg/L	0.001 U
08	09/09/2021	Arsenic, total	mg/L	0.001 U
08	12/08/2021	Arsenic, total	mg/L	0.001 U
08	03/22/2022	Arsenic, total	mg/L	0.001 U
08	06/07/2022	Arsenic, total	mg/L	0.0004 U
08	09/14/2022	Arsenic, total	mg/L	0.0004 U
08	02/24/2021	Barium, total	mg/L	0.0773
08	03/18/2021	Barium, total	mg/L	0.0969
08	04/08/2021	Barium, total	mg/L	0.104
08	05/06/2021	Barium, total	mg/L	0.0963
08	06/08/2021	Barium, total	mg/L	0.0905
08	06/24/2021	Barium, total	mg/L	0.0879
08	07/13/2021	Barium, total	mg/L	0.0909
08	08/03/2021	Barium, total	mg/L	0.0856
08	09/09/2021	Barium, total	mg/L	0.0878

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HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
08	12/08/2021	Barium, total	mg/L	0.0833
08	03/22/2022	Barium, total	mg/L	0.113
08	06/07/2022	Barium, total	mg/L	0.0999
08	09/14/2022	Barium, total	mg/L	0.0864
08	02/24/2021	Beryllium, total	mg/L	0.001 U
08	03/18/2021	Beryllium, total	mg/L	0.001 U
08	04/08/2021	Beryllium, total	mg/L	0.001 U
08	05/06/2021	Beryllium, total	mg/L	0.001 U
08	06/08/2021	Beryllium, total	mg/L	0.001 U
08	06/24/2021	Beryllium, total	mg/L	0.001 U
08	07/13/2021	Beryllium, total	mg/L	0.001 U
08	08/03/2021	Beryllium, total	mg/L	0.001 U
08	09/09/2021	Beryllium, total	mg/L	0.001 U
08	12/08/2021	Beryllium, total	mg/L	0.001 U
08	03/22/2022	Beryllium, total	mg/L	0.001 U
08	06/07/2022	Beryllium, total	mg/L	0.0002 U
08	09/14/2022	Beryllium, total	mg/L	0.0002 U
08	02/24/2021	Cadmium, total	mg/L	0.001 U
08	03/18/2021	Cadmium, total	mg/L	0.001 U
08	04/08/2021	Cadmium, total	mg/L	0.001 U
08	05/06/2021	Cadmium, total	mg/L	0.001 U
08	06/08/2021	Cadmium, total	mg/L	0.001 U
08	06/24/2021	Cadmium, total	mg/L	0.001 U
08	07/13/2021	Cadmium, total	mg/L	0.001 U
08	08/03/2021	Cadmium, total	mg/L	0.001 U
08	09/09/2021	Cadmium, total	mg/L	0.001 U
08	12/08/2021	Cadmium, total	mg/L	0.001 U
08	03/22/2022	Cadmium, total	mg/L	0.001 U
08	06/07/2022	Cadmium, total	mg/L	0.0003 J
08	09/14/2022	Cadmium, total	mg/L	0.0002 J
08	02/24/2021	Chromium, total	mg/L	0.0015 U
08	03/18/2021	Chromium, total	mg/L	0.0015 U
08	04/08/2021	Chromium, total	mg/L	0.0015 U
08	05/06/2021	Chromium, total	mg/L	0.001 U
08	06/08/2021	Chromium, total	mg/L	0.0015 U
08	06/24/2021	Chromium, total	mg/L	0.0015 U
08	07/13/2021	Chromium, total	mg/L	0.0015 U
08	08/03/2021	Chromium, total	mg/L	0.0015 U
08	09/09/2021	Chromium, total	mg/L	0.0015 U
08	12/08/2021	Chromium, total	mg/L	0.0015 U
08	03/22/2022	Chromium, total	mg/L	0.0015 U
08	06/07/2022	Chromium, total	mg/L	0.0007 U
08	09/14/2022	Chromium, total	mg/L	0.0007 U
08	02/24/2021	Cobalt, total	mg/L	0.00340
08	03/18/2021	Cobalt, total	mg/L	0.00450
08	04/08/2021	Cobalt, total	mg/L	0.00630

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LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
08	05/06/2021	Cobalt, total	mg/L	0.00916
08	06/08/2021	Cobalt, total	mg/L	0.00870
08	06/24/2021	Cobalt, total	mg/L	0.0106
08	07/13/2021	Cobalt, total	mg/L	0.0104
08	08/03/2021	Cobalt, total	mg/L	0.00720
08	09/09/2021	Cobalt, total	mg/L	0.00490
08	12/08/2021	Cobalt, total	mg/L	0.00380
08	03/22/2022	Cobalt, total	mg/L	0.00700
08	06/07/2022	Cobalt, total	mg/L	0.00440
08	09/14/2022	Cobalt, total	mg/L	0.00270
08	02/24/2021	Fluoride, total	mg/L	0.110
08	03/18/2021	Fluoride, total	mg/L	0.1 U
08	04/08/2021	Fluoride, total	mg/L	0.100
08	05/06/2021	Fluoride, total	mg/L	0.110
08	06/08/2021	Fluoride, total	mg/L	0.100
08	06/24/2021	Fluoride, total	mg/L	0.110
08	07/13/2021	Fluoride, total	mg/L	0.110
08	08/03/2021	Fluoride, total	mg/L	0.1 U
08	09/09/2021	Fluoride, total	mg/L	0.1 U
08	12/08/2021	Fluoride, total	mg/L	0.110
08	03/22/2022	Fluoride, total	mg/L	0.110
08	06/07/2022	Fluoride, total	mg/L	0.100
08	09/14/2022	Fluoride, total	mg/L	0.100
08	02/24/2021	Lead, total	mg/L	0.001 U
08	03/18/2021	Lead, total	mg/L	0.001 U
08	04/08/2021	Lead, total	mg/L	0.001 U
08	05/06/2021	Lead, total	mg/L	0.001 U
08	06/08/2021	Lead, total	mg/L	0.001 U
08	06/24/2021	Lead, total	mg/L	0.001 U
08	07/13/2021	Lead, total	mg/L	0.001 U
08	08/03/2021	Lead, total	mg/L	0.001 U
08	09/09/2021	Lead, total	mg/L	0.001 U
08	12/08/2021	Lead, total	mg/L	0.001 U
08	03/22/2022	Lead, total	mg/L	0.001 U
08	06/07/2022	Lead, total	mg/L	0.0006 U
08	09/14/2022	Lead, total	mg/L	0.0006 U
08	02/24/2021	Lithium, total	mg/L	0.0119
08	03/18/2021	Lithium, total	mg/L	0.0130
08	04/08/2021	Lithium, total	mg/L	0.0121
08	05/06/2021	Lithium, total	mg/L	0.0112
08	06/08/2021	Lithium, total	mg/L	0.0125
08	06/24/2021	Lithium, total	mg/L	0.0150
08	07/13/2021	Lithium, total	mg/L	0.0130
08	08/03/2021	Lithium, total	mg/L	0.0138
08	09/09/2021	Lithium, total	mg/L	0.0130
08	12/08/2021	Lithium, total	mg/L	0.0110

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LANDFILL
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Well ID	Date	Parameter	Unit	Result
08	03/22/2022	Lithium, total	mg/L	0.0155
08	06/07/2022	Lithium, total	mg/L	0.0137
08	09/14/2022	Lithium, total	mg/L	0.0106
08	02/24/2021	Mercury, total	mg/L	0.0002 U
08	03/18/2021	Mercury, total	mg/L	0.0002 U
08	04/08/2021	Mercury, total	mg/L	0.0002 U
08	05/06/2021	Mercury, total	mg/L	0.0002 U
08	06/08/2021	Mercury, total	mg/L	0.0002 U
08	06/24/2021	Mercury, total	mg/L	0.0002 U
08	07/13/2021	Mercury, total	mg/L	0.0002 U
08	08/03/2021	Mercury, total	mg/L	0.0002 U
08	09/09/2021	Mercury, total	mg/L	0.0002 U
08	12/08/2021	Mercury, total	mg/L	0.0002 U
08	03/22/2022	Mercury, total	mg/L	0.0002 U
08	06/07/2022	Mercury, total	mg/L	0.0001 U
08	09/14/2022	Mercury, total	mg/L	0.00006 U
08	02/24/2021	Molybdenum, total	mg/L	0.0015 U
08	03/18/2021	Molybdenum, total	mg/L	0.0015 U
08	04/08/2021	Molybdenum, total	mg/L	0.0015 U
08	05/06/2021	Molybdenum, total	mg/L	0.00143
08	06/08/2021	Molybdenum, total	mg/L	0.0015 U
08	06/24/2021	Molybdenum, total	mg/L	0.0015 U
08	07/13/2021	Molybdenum, total	mg/L	0.0015 U
08	08/03/2021	Molybdenum, total	mg/L	0.00150
08	09/09/2021	Molybdenum, total	mg/L	0.0015 U
08	12/08/2021	Molybdenum, total	mg/L	0.00170
08	03/22/2022	Molybdenum, total	mg/L	0.00160
08	06/07/2022	Molybdenum, total	mg/L	0.00170 J
08	09/14/2022	Molybdenum, total	mg/L	0.0014 J
08	02/24/2021	Radium 226 + Radium 228, total	pCi/L	0.432
08	03/18/2021	Radium 226 + Radium 228, total	pCi/L	0.540
08	04/08/2021	Radium 226 + Radium 228, total	pCi/L	0.0906
08	05/06/2021	Radium 226 + Radium 228, total	pCi/L	0.289
08	06/08/2021	Radium 226 + Radium 228, total	pCi/L	0.475
08	06/24/2021	Radium 226 + Radium 228, total	pCi/L	0.983
08	07/13/2021	Radium 226 + Radium 228, total	pCi/L	0.192
08	08/03/2021	Radium 226 + Radium 228, total	pCi/L	0.179
08	09/09/2021	Radium 226 + Radium 228, total	pCi/L	0.295
08	12/08/2021	Radium 226 + Radium 228, total	pCi/L	0.0654
08	03/22/2022	Radium 226 + Radium 228, total	pCi/L	1.48
08	06/07/2022	Radium 226 + Radium 228, total	pCi/L	1.17
08	09/14/2022	Radium 226 + Radium 228, total	pCi/L	1.71
08	02/24/2021	Selenium, total	mg/L	0.001 U
08	03/18/2021	Selenium, total	mg/L	0.001 U
08	04/08/2021	Selenium, total	mg/L	0.001 U
08	05/06/2021	Selenium, total	mg/L	0.001 U

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LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
08	06/08/2021	Selenium, total	mg/L	0.001 U
08	06/24/2021	Selenium, total	mg/L	0.001 U
08	07/13/2021	Selenium, total	mg/L	0.001 U
08	08/03/2021	Selenium, total	mg/L	0.001 U
08	09/09/2021	Selenium, total	mg/L	0.001 U
08	12/08/2021	Selenium, total	mg/L	0.001 U
08	03/22/2022	Selenium, total	mg/L	0.001 U
08	06/07/2022	Selenium, total	mg/L	0.0006 U
08	09/14/2022	Selenium, total	mg/L	0.0006 U
08	02/24/2021	Thallium, total	mg/L	0.002 U
08	03/18/2021	Thallium, total	mg/L	0.002 U
08	04/08/2021	Thallium, total	mg/L	0.002 U
08	05/06/2021	Thallium, total	mg/L	0.001 U
08	06/08/2021	Thallium, total	mg/L	0.002 U
08	06/24/2021	Thallium, total	mg/L	0.002 U
08	07/13/2021	Thallium, total	mg/L	0.002 U
08	08/03/2021	Thallium, total	mg/L	0.00340
08	09/09/2021	Thallium, total	mg/L	0.002 U
08	12/08/2021	Thallium, total	mg/L	0.002 U
08	03/22/2022	Thallium, total	mg/L	0.002 U
08	06/07/2022	Thallium, total	mg/L	0.001 U
08	09/14/2022	Thallium, total	mg/L	0.001 U
08D	02/24/2021	Antimony, total	mg/L	0.001 U
08D	03/18/2021	Antimony, total	mg/L	0.001 U
08D	04/08/2021	Antimony, total	mg/L	0.001 U
08D	05/06/2021	Antimony, total	mg/L	0.002 U
08D	06/08/2021	Antimony, total	mg/L	0.001 U
08D	06/24/2021	Antimony, total	mg/L	0.001 U
08D	07/13/2021	Antimony, total	mg/L	0.001 U
08D	08/03/2021	Antimony, total	mg/L	0.001 U
08D	09/09/2021	Antimony, total	mg/L	0.001 U
08D	12/08/2021	Antimony, total	mg/L	0.001 U
08D	03/22/2022	Antimony, total	mg/L	0.001 U
08D	06/07/2022	Antimony, total	mg/L	0.0004 U
08D	09/14/2022	Antimony, total	mg/L	0.0004 U
08D	02/24/2021	Arsenic, total	mg/L	0.001 U
08D	03/18/2021	Arsenic, total	mg/L	0.001 U
08D	04/08/2021	Arsenic, total	mg/L	0.001 U
08D	05/06/2021	Arsenic, total	mg/L	0.001 U
08D	06/08/2021	Arsenic, total	mg/L	0.001 U
08D	06/24/2021	Arsenic, total	mg/L	0.001 U
08D	07/13/2021	Arsenic, total	mg/L	0.001 U
08D	08/03/2021	Arsenic, total	mg/L	0.001 U
08D	09/09/2021	Arsenic, total	mg/L	0.001 U
08D	12/08/2021	Arsenic, total	mg/L	0.001 U
08D	03/22/2022	Arsenic, total	mg/L	0.001 U

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Well ID	Date	Parameter	Unit	Result
08D	06/07/2022	Arsenic, total	mg/L	0.0004 U
08D	09/14/2022	Arsenic, total	mg/L	0.0004 U
08D	02/24/2021	Barium, total	mg/L	0.122
08D	03/18/2021	Barium, total	mg/L	0.128
08D	04/08/2021	Barium, total	mg/L	0.128
08D	05/06/2021	Barium, total	mg/L	0.130
08D	06/08/2021	Barium, total	mg/L	0.116
08D	06/24/2021	Barium, total	mg/L	0.120
08D	07/13/2021	Barium, total	mg/L	0.110
08D	08/03/2021	Barium, total	mg/L	0.113
08D	09/09/2021	Barium, total	mg/L	0.122
08D	12/08/2021	Barium, total	mg/L	0.129
08D	03/22/2022	Barium, total	mg/L	0.136
08D	06/07/2022	Barium, total	mg/L	0.129
08D	09/14/2022	Barium, total	mg/L	0.118
08D	02/24/2021	Beryllium, total	mg/L	0.001 U
08D	03/18/2021	Beryllium, total	mg/L	0.001 U
08D	04/08/2021	Beryllium, total	mg/L	0.001 U
08D	05/06/2021	Beryllium, total	mg/L	0.001 U
08D	06/08/2021	Beryllium, total	mg/L	0.001 U
08D	06/24/2021	Beryllium, total	mg/L	0.001 U
08D	07/13/2021	Beryllium, total	mg/L	0.001 U
08D	08/03/2021	Beryllium, total	mg/L	0.001 U
08D	09/09/2021	Beryllium, total	mg/L	0.001 U
08D	12/08/2021	Beryllium, total	mg/L	0.001 U
08D	03/22/2022	Beryllium, total	mg/L	0.001 U
08D	06/07/2022	Beryllium, total	mg/L	0.0002 U
08D	09/14/2022	Beryllium, total	mg/L	0.0002 U
08D	02/24/2021	Cadmium, total	mg/L	0.001 U
08D	03/18/2021	Cadmium, total	mg/L	0.001 U
08D	04/08/2021	Cadmium, total	mg/L	0.001 U
08D	05/06/2021	Cadmium, total	mg/L	0.001 U
08D	06/08/2021	Cadmium, total	mg/L	0.001 U
08D	06/24/2021	Cadmium, total	mg/L	0.001 U
08D	07/13/2021	Cadmium, total	mg/L	0.001 U
08D	08/03/2021	Cadmium, total	mg/L	0.001 U
08D	09/09/2021	Cadmium, total	mg/L	0.001 U
08D	12/08/2021	Cadmium, total	mg/L	0.001 U
08D	03/22/2022	Cadmium, total	mg/L	0.001 U
08D	06/07/2022	Cadmium, total	mg/L	0.0005 J
08D	09/14/2022	Cadmium, total	mg/L	0.0004 J
08D	02/24/2021	Chromium, total	mg/L	0.0015 U
08D	03/18/2021	Chromium, total	mg/L	0.0015 U
08D	04/08/2021	Chromium, total	mg/L	0.0015 U
08D	05/06/2021	Chromium, total	mg/L	0.001 U
08D	06/08/2021	Chromium, total	mg/L	0.0015 U

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Well ID	Date	Parameter	Unit	Result
08D	06/24/2021	Chromium, total	mg/L	0.0015 U
08D	07/13/2021	Chromium, total	mg/L	0.0015 U
08D	08/03/2021	Chromium, total	mg/L	0.0015 U
08D	09/09/2021	Chromium, total	mg/L	0.0015 U
08D	12/08/2021	Chromium, total	mg/L	0.00160
08D	03/22/2022	Chromium, total	mg/L	0.0015 U
08D	06/07/2022	Chromium, total	mg/L	0.0007 U
08D	09/14/2022	Chromium, total	mg/L	0.0007 U
08D	02/24/2021	Cobalt, total	mg/L	0.00250
08D	03/18/2021	Cobalt, total	mg/L	0.00280
08D	04/08/2021	Cobalt, total	mg/L	0.00280
08D	05/06/2021	Cobalt, total	mg/L	0.00303
08D	06/08/2021	Cobalt, total	mg/L	0.00290
08D	06/24/2021	Cobalt, total	mg/L	0.00370
08D	07/13/2021	Cobalt, total	mg/L	0.00660
08D	08/03/2021	Cobalt, total	mg/L	0.00400
08D	09/09/2021	Cobalt, total	mg/L	0.00320
08D	12/08/2021	Cobalt, total	mg/L	0.00310
08D	03/22/2022	Cobalt, total	mg/L	0.00500
08D	06/07/2022	Cobalt, total	mg/L	0.00330
08D	09/14/2022	Cobalt, total	mg/L	0.00350
08D	02/24/2021	Fluoride, total	mg/L	0.110
08D	03/18/2021	Fluoride, total	mg/L	0.100
08D	04/08/2021	Fluoride, total	mg/L	0.100
08D	05/06/2021	Fluoride, total	mg/L	0.120
08D	06/08/2021	Fluoride, total	mg/L	0.100
08D	06/24/2021	Fluoride, total	mg/L	0.120
08D	07/13/2021	Fluoride, total	mg/L	0.120
08D	08/03/2021	Fluoride, total	mg/L	0.110
08D	09/09/2021	Fluoride, total	mg/L	0.100
08D	12/08/2021	Fluoride, total	mg/L	0.110
08D	03/22/2022	Fluoride, total	mg/L	0.110
08D	06/07/2022	Fluoride, total	mg/L	0.110
08D	09/14/2022	Fluoride, total	mg/L	0.110
08D	02/24/2021	Lead, total	mg/L	0.001 U
08D	03/18/2021	Lead, total	mg/L	0.001 U
08D	04/08/2021	Lead, total	mg/L	0.001 U
08D	05/06/2021	Lead, total	mg/L	0.001 U
08D	06/08/2021	Lead, total	mg/L	0.001 U
08D	06/24/2021	Lead, total	mg/L	0.001 U
08D	07/13/2021	Lead, total	mg/L	0.001 U
08D	08/03/2021	Lead, total	mg/L	0.001 U
08D	09/09/2021	Lead, total	mg/L	0.001 U
08D	12/08/2021	Lead, total	mg/L	0.00100
08D	03/22/2022	Lead, total	mg/L	0.001 U
08D	06/07/2022	Lead, total	mg/L	0.0006 U

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Well ID	Date	Parameter	Unit	Result
08D	09/14/2022	Lead, total	mg/L	0.0006 U
08D	02/24/2021	Lithium, total	mg/L	0.0141
08D	03/18/2021	Lithium, total	mg/L	0.0141
08D	04/08/2021	Lithium, total	mg/L	0.0133
08D	05/06/2021	Lithium, total	mg/L	0.0121
08D	06/08/2021	Lithium, total	mg/L	0.0127
08D	06/24/2021	Lithium, total	mg/L	0.0137
08D	07/13/2021	Lithium, total	mg/L	0.0140
08D	08/03/2021	Lithium, total	mg/L	0.0141
08D	09/09/2021	Lithium, total	mg/L	0.0137
08D	12/08/2021	Lithium, total	mg/L	0.0166
08D	03/22/2022	Lithium, total	mg/L	0.0165
08D	06/07/2022	Lithium, total	mg/L	0.0122
08D	09/14/2022	Lithium, total	mg/L	0.0125
08D	02/24/2021	Mercury, total	mg/L	0.0002 U
08D	03/18/2021	Mercury, total	mg/L	0.0002 U
08D	04/08/2021	Mercury, total	mg/L	0.0002 U
08D	05/06/2021	Mercury, total	mg/L	0.0002 U
08D	06/08/2021	Mercury, total	mg/L	0.0002 U
08D	06/24/2021	Mercury, total	mg/L	0.0002 U
08D	07/13/2021	Mercury, total	mg/L	0.0002 U
08D	08/03/2021	Mercury, total	mg/L	0.0002 U
08D	09/09/2021	Mercury, total	mg/L	0.0002 U
08D	12/08/2021	Mercury, total	mg/L	0.0002 U
08D	03/22/2022	Mercury, total	mg/L	0.0002 U
08D	06/07/2022	Mercury, total	mg/L	0.0001 U
08D	09/14/2022	Mercury, total	mg/L	0.00006 U
08D	02/24/2021	Molybdenum, total	mg/L	0.0015 U
08D	03/18/2021	Molybdenum, total	mg/L	0.0015 U
08D	04/08/2021	Molybdenum, total	mg/L	0.0015 U
08D	05/06/2021	Molybdenum, total	mg/L	0.00132
08D	06/08/2021	Molybdenum, total	mg/L	0.0015 U
08D	06/24/2021	Molybdenum, total	mg/L	0.0015 U
08D	07/13/2021	Molybdenum, total	mg/L	0.0015 U
08D	08/03/2021	Molybdenum, total	mg/L	0.0015 U
08D	09/09/2021	Molybdenum, total	mg/L	0.0015 U
08D	12/08/2021	Molybdenum, total	mg/L	0.0015 U
08D	03/22/2022	Molybdenum, total	mg/L	0.0015 U
08D	06/07/2022	Molybdenum, total	mg/L	0.0012 J
08D	09/14/2022	Molybdenum, total	mg/L	0.0013 J
08D	02/24/2021	Radium 226 + Radium 228, total	pCi/L	0.0758
08D	03/18/2021	Radium 226 + Radium 228, total	pCi/L	1.67
08D	04/08/2021	Radium 226 + Radium 228, total	pCi/L	0.518
08D	05/06/2021	Radium 226 + Radium 228, total	pCi/L	0.0230
08D	06/08/2021	Radium 226 + Radium 228, total	pCi/L	0.560
08D	06/24/2021	Radium 226 + Radium 228, total	pCi/L	1.11

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Well ID	Date	Parameter	Unit	Result
08D	07/13/2021	Radium 226 + Radium 228, total	pCi/L	0.766
08D	08/03/2021	Radium 226 + Radium 228, total	pCi/L	0.220
08D	09/22/2021	Radium 226 + Radium 228, total	pCi/L	1.67
08D	12/08/2021	Radium 226 + Radium 228, total	pCi/L	0.635
08D	03/22/2022	Radium 226 + Radium 228, total	pCi/L	0.480
08D	06/07/2022	Radium 226 + Radium 228, total	pCi/L	0.608
08D	09/14/2022	Radium 226 + Radium 228, total	pCi/L	1.59
08D	02/24/2021	Selenium, total	mg/L	0.001 U
08D	03/18/2021	Selenium, total	mg/L	0.001 U
08D	04/08/2021	Selenium, total	mg/L	0.001 U
08D	05/06/2021	Selenium, total	mg/L	0.001 U
08D	06/08/2021	Selenium, total	mg/L	0.001 U
08D	06/24/2021	Selenium, total	mg/L	0.001 U
08D	07/13/2021	Selenium, total	mg/L	0.001 U
08D	08/03/2021	Selenium, total	mg/L	0.001 U
08D	09/09/2021	Selenium, total	mg/L	0.001 U
08D	12/08/2021	Selenium, total	mg/L	0.001 U
08D	03/22/2022	Selenium, total	mg/L	0.001 U
08D	06/07/2022	Selenium, total	mg/L	0.0006 U
08D	09/14/2022	Selenium, total	mg/L	0.0006 U
08D	02/24/2021	Thallium, total	mg/L	0.002 U
08D	03/18/2021	Thallium, total	mg/L	0.002 U
08D	04/08/2021	Thallium, total	mg/L	0.002 U
08D	05/06/2021	Thallium, total	mg/L	0.001 U
08D	06/08/2021	Thallium, total	mg/L	0.002 U
08D	06/24/2021	Thallium, total	mg/L	0.002 U
08D	07/13/2021	Thallium, total	mg/L	0.002 U
08D	08/03/2021	Thallium, total	mg/L	0.002 U
08D	09/09/2021	Thallium, total	mg/L	0.002 U
08D	12/08/2021	Thallium, total	mg/L	0.002 U
08D	03/22/2022	Thallium, total	mg/L	0.002 U
08D	06/07/2022	Thallium, total	mg/L	0.001 U
08D	09/14/2022	Thallium, total	mg/L	0.001 U
16	02/24/2021	Antimony, total	mg/L	0.001 U
16	03/18/2021	Antimony, total	mg/L	0.001 U
16	04/08/2021	Antimony, total	mg/L	0.001 U
16	05/06/2021	Antimony, total	mg/L	0.002 U
16	06/08/2021	Antimony, total	mg/L	0.001 U
16	06/23/2021	Antimony, total	mg/L	0.001 U
16	07/13/2021	Antimony, total	mg/L	0.001 U
16	08/03/2021	Antimony, total	mg/L	0.001 U
16	09/09/2021	Antimony, total	mg/L	0.001 U
16	03/22/2022	Antimony, total	mg/L	0.001 U
16	02/24/2021	Arsenic, total	mg/L	0.001 U
16	03/18/2021	Arsenic, total	mg/L	0.001 U
16	04/08/2021	Arsenic, total	mg/L	0.001 U

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LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
16	05/06/2021	Arsenic, total	mg/L	0.001 U
16	06/08/2021	Arsenic, total	mg/L	0.001 U
16	06/23/2021	Arsenic, total	mg/L	0.001 U
16	07/13/2021	Arsenic, total	mg/L	0.001 U
16	08/03/2021	Arsenic, total	mg/L	0.001 U
16	09/09/2021	Arsenic, total	mg/L	0.001 U
16	03/22/2022	Arsenic, total	mg/L	0.001 U
16	02/24/2021	Barium, total	mg/L	0.0779
16	03/18/2021	Barium, total	mg/L	0.0857
16	04/08/2021	Barium, total	mg/L	0.0769
16	05/06/2021	Barium, total	mg/L	0.0646
16	06/08/2021	Barium, total	mg/L	0.0642
16	06/23/2021	Barium, total	mg/L	0.0690
16	07/13/2021	Barium, total	mg/L	0.0636
16	08/03/2021	Barium, total	mg/L	0.0713
16	09/09/2021	Barium, total	mg/L	0.0818
16	03/22/2022	Barium, total	mg/L	0.0808
16	02/24/2021	Beryllium, total	mg/L	0.001 U
16	03/18/2021	Beryllium, total	mg/L	0.001 U
16	04/08/2021	Beryllium, total	mg/L	0.001 U
16	05/06/2021	Beryllium, total	mg/L	0.001 U
16	06/08/2021	Beryllium, total	mg/L	0.001 U
16	06/23/2021	Beryllium, total	mg/L	0.001 U
16	07/13/2021	Beryllium, total	mg/L	0.001 U
16	08/03/2021	Beryllium, total	mg/L	0.001 U
16	03/22/2022	Beryllium, total	mg/L	0.001 U
16	02/24/2021	Cadmium, total	mg/L	0.001 U
16	03/18/2021	Cadmium, total	mg/L	0.001 U
16	04/08/2021	Cadmium, total	mg/L	0.001 U
16	05/06/2021	Cadmium, total	mg/L	0.001 U
16	06/08/2021	Cadmium, total	mg/L	0.001 U
16	06/23/2021	Cadmium, total	mg/L	0.001 U
16	07/13/2021	Cadmium, total	mg/L	0.001 U
16	08/03/2021	Cadmium, total	mg/L	0.001 U
16	09/09/2021	Cadmium, total	mg/L	0.001 U
16	03/22/2022	Cadmium, total	mg/L	0.001 U
16	02/24/2021	Chromium, total	mg/L	0.0015 U
16	03/18/2021	Chromium, total	mg/L	0.0015 U
16	04/08/2021	Chromium, total	mg/L	0.0015 U
16	05/06/2021	Chromium, total	mg/L	0.001 U
16	06/08/2021	Chromium, total	mg/L	0.0015 U
16	06/23/2021	Chromium, total	mg/L	0.0015 U
16	07/13/2021	Chromium, total	mg/L	0.0015 U
16	08/03/2021	Chromium, total	mg/L	0.0015 U
16	09/09/2021	Chromium, total	mg/L	0.0015 U
16	03/22/2022	Chromium, total	mg/L	0.0015 U

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LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
16	02/24/2021	Cobalt, total	mg/L	0.001 U
16	03/18/2021	Cobalt, total	mg/L	0.001 U
16	04/08/2021	Cobalt, total	mg/L	0.001 U
16	05/06/2021	Cobalt, total	mg/L	0.001 U
16	06/08/2021	Cobalt, total	mg/L	0.001 U
16	06/23/2021	Cobalt, total	mg/L	0.001 U
16	07/13/2021	Cobalt, total	mg/L	0.001 U
16	08/03/2021	Cobalt, total	mg/L	0.001 U
16	09/09/2021	Cobalt, total	mg/L	0.001 U
16	03/22/2022	Cobalt, total	mg/L	0.00100
16	02/24/2021	Fluoride, total	mg/L	0.270
16	03/18/2021	Fluoride, total	mg/L	0.240
16	04/08/2021	Fluoride, total	mg/L	0.240
16	05/06/2021	Fluoride, total	mg/L	0.290
16	06/08/2021	Fluoride, total	mg/L	0.280
16	06/23/2021	Fluoride, total	mg/L	0.270
16	07/13/2021	Fluoride, total	mg/L	0.280
16	08/03/2021	Fluoride, total	mg/L	0.240
16	09/09/2021	Fluoride, total	mg/L	0.250
16	03/22/2022	Fluoride, total	mg/L	0.260
16	09/14/2022	Fluoride, total	mg/L	0.230
16	02/24/2021	Lead, total	mg/L	0.001 U
16	03/18/2021	Lead, total	mg/L	0.001 U
16	04/08/2021	Lead, total	mg/L	0.001 U
16	05/06/2021	Lead, total	mg/L	0.001 U
16	06/08/2021	Lead, total	mg/L	0.001 U
16	06/23/2021	Lead, total	mg/L	0.001 U
16	07/13/2021	Lead, total	mg/L	0.001 U
16	08/03/2021	Lead, total	mg/L	0.001 U
16	09/09/2021	Lead, total	mg/L	0.001 U
16	03/22/2022	Lead, total	mg/L	0.001 U
16	02/24/2021	Lithium, total	mg/L	0.00695
16	03/18/2021	Lithium, total	mg/L	0.00830
16	04/08/2021	Lithium, total	mg/L	0.00780
16	05/06/2021	Lithium, total	mg/L	0.00651
16	06/08/2021	Lithium, total	mg/L	0.00670
16	06/23/2021	Lithium, total	mg/L	0.00690
16	07/13/2021	Lithium, total	mg/L	0.00640
16	08/03/2021	Lithium, total	mg/L	0.00710
16	09/09/2021	Lithium, total	mg/L	0.00820
16	03/22/2022	Lithium, total	mg/L	0.0100
16	02/24/2021	Mercury, total	mg/L	0.0002 U
16	03/18/2021	Mercury, total	mg/L	0.0002 U
16	04/08/2021	Mercury, total	mg/L	0.0002 U
16	05/06/2021	Mercury, total	mg/L	0.0002 U
16	06/08/2021	Mercury, total	mg/L	0.0002 U

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LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
16	06/23/2021	Mercury, total	mg/L	0.0002 U
16	07/13/2021	Mercury, total	mg/L	0.0002 U
16	08/03/2021	Mercury, total	mg/L	0.0002 U
16	03/22/2022	Mercury, total	mg/L	0.0002 U
16	02/24/2021	Molybdenum, total	mg/L	0.00620
16	03/18/2021	Molybdenum, total	mg/L	0.00590
16	04/08/2021	Molybdenum, total	mg/L	0.00640
16	05/06/2021	Molybdenum, total	mg/L	0.0108
16	06/08/2021	Molybdenum, total	mg/L	0.0106
16	06/23/2021	Molybdenum, total	mg/L	0.00950
16	07/13/2021	Molybdenum, total	mg/L	0.00980
16	08/03/2021	Molybdenum, total	mg/L	0.00750
16	09/09/2021	Molybdenum, total	mg/L	0.00710
16	03/22/2022	Molybdenum, total	mg/L	0.00680
16	02/24/2021	Radium 226 + Radium 228, total	pCi/L	0.798
16	03/18/2021	Radium 226 + Radium 228, total	pCi/L	0.376
16	04/08/2021	Radium 226 + Radium 228, total	pCi/L	1.73
16	05/06/2021	Radium 226 + Radium 228, total	pCi/L	0.216
16	06/08/2021	Radium 226 + Radium 228, total	pCi/L	0.00746
16	06/23/2021	Radium 226 + Radium 228, total	pCi/L	0.643
16	07/13/2021	Radium 226 + Radium 228, total	pCi/L	0.628
16	08/03/2021	Radium 226 + Radium 228, total	pCi/L	0.167
16	09/09/2021	Radium 226 + Radium 228, total	pCi/L	0.226
16	02/24/2021	Selenium, total	mg/L	0.001 U
16	03/18/2021	Selenium, total	mg/L	0.001 U
16	04/08/2021	Selenium, total	mg/L	0.001 U
16	05/06/2021	Selenium, total	mg/L	0.001 U
16	06/08/2021	Selenium, total	mg/L	0.001 U
16	06/23/2021	Selenium, total	mg/L	0.001 U
16	07/13/2021	Selenium, total	mg/L	0.001 U
16	08/03/2021	Selenium, total	mg/L	0.001 U
16	09/09/2021	Selenium, total	mg/L	0.001 U
16	03/22/2022	Selenium, total	mg/L	0.001 U
16	02/24/2021	Thallium, total	mg/L	0.002 U
16	03/18/2021	Thallium, total	mg/L	0.002 U
16	04/08/2021	Thallium, total	mg/L	0.002 U
16	05/06/2021	Thallium, total	mg/L	0.001 U
16	06/08/2021	Thallium, total	mg/L	0.002 U
16	06/23/2021	Thallium, total	mg/L	0.002 U
16	07/13/2021	Thallium, total	mg/L	0.002 U
16	08/03/2021	Thallium, total	mg/L	0.002 U
16	03/22/2022	Thallium, total	mg/L	0.002 U
17	02/24/2021	Antimony, total	mg/L	0.001 U
17	03/18/2021	Antimony, total	mg/L	0.001 U
17	04/08/2021	Antimony, total	mg/L	0.001 U
17	05/06/2021	Antimony, total	mg/L	0.002 U

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LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
17	06/08/2021	Antimony, total	mg/L	0.001 U
17	06/23/2021	Antimony, total	mg/L	0.001 U
17	07/13/2021	Antimony, total	mg/L	0.001 U
17	08/03/2021	Antimony, total	mg/L	0.001 U
17	09/09/2021	Antimony, total	mg/L	0.001 U
17	03/22/2022	Antimony, total	mg/L	0.001 U
17	02/24/2021	Arsenic, total	mg/L	0.001 U
17	03/18/2021	Arsenic, total	mg/L	0.001 U
17	04/08/2021	Arsenic, total	mg/L	0.001 U
17	05/06/2021	Arsenic, total	mg/L	0.001 U
17	06/08/2021	Arsenic, total	mg/L	0.001 U
17	06/23/2021	Arsenic, total	mg/L	0.001 U
17	07/13/2021	Arsenic, total	mg/L	0.001 U
17	08/03/2021	Arsenic, total	mg/L	0.001 U
17	09/09/2021	Arsenic, total	mg/L	0.001 U
17	03/22/2022	Arsenic, total	mg/L	0.001 U
17	02/24/2021	Barium, total	mg/L	0.0931
17	03/18/2021	Barium, total	mg/L	0.0896
17	04/08/2021	Barium, total	mg/L	0.0572
17	05/06/2021	Barium, total	mg/L	0.0629
17	06/08/2021	Barium, total	mg/L	0.0533
17	06/23/2021	Barium, total	mg/L	0.0556
17	07/13/2021	Barium, total	mg/L	0.0531
17	08/03/2021	Barium, total	mg/L	0.0504
17	09/09/2021	Barium, total	mg/L	0.0533
17	03/22/2022	Barium, total	mg/L	0.125
17	02/24/2021	Beryllium, total	mg/L	0.001 U
17	03/18/2021	Beryllium, total	mg/L	0.001 U
17	04/08/2021	Beryllium, total	mg/L	0.001 U
17	05/06/2021	Beryllium, total	mg/L	0.001 U
17	06/08/2021	Beryllium, total	mg/L	0.001 U
17	06/23/2021	Beryllium, total	mg/L	0.001 U
17	07/13/2021	Beryllium, total	mg/L	0.001 U
17	08/03/2021	Beryllium, total	mg/L	0.001 U
17	03/22/2022	Beryllium, total	mg/L	0.001 U
17	02/24/2021	Cadmium, total	mg/L	0.001 U
17	03/18/2021	Cadmium, total	mg/L	0.001 U
17	04/08/2021	Cadmium, total	mg/L	0.001 U
17	05/06/2021	Cadmium, total	mg/L	0.001 U
17	06/08/2021	Cadmium, total	mg/L	0.001 U
17	06/23/2021	Cadmium, total	mg/L	0.001 U
17	07/13/2021	Cadmium, total	mg/L	0.001 U
17	08/03/2021	Cadmium, total	mg/L	0.001 U
17	09/09/2021	Cadmium, total	mg/L	0.001 U
17	03/22/2022	Cadmium, total	mg/L	0.001 U
17	02/24/2021	Chromium, total	mg/L	0.0015 U

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LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
17	03/18/2021	Chromium, total	mg/L	0.0015 U
17	04/08/2021	Chromium, total	mg/L	0.0015 U
17	05/06/2021	Chromium, total	mg/L	0.001 U
17	06/08/2021	Chromium, total	mg/L	0.0015 U
17	06/23/2021	Chromium, total	mg/L	0.0015 U
17	07/13/2021	Chromium, total	mg/L	0.0015 U
17	08/03/2021	Chromium, total	mg/L	0.0015 U
17	09/09/2021	Chromium, total	mg/L	0.0015 U
17	03/22/2022	Chromium, total	mg/L	0.0015 U
17	02/24/2021	Cobalt, total	mg/L	0.001 U
17	03/18/2021	Cobalt, total	mg/L	0.001 U
17	04/08/2021	Cobalt, total	mg/L	0.001 U
17	05/06/2021	Cobalt, total	mg/L	0.001 U
17	06/08/2021	Cobalt, total	mg/L	0.001 U
17	06/23/2021	Cobalt, total	mg/L	0.001 U
17	07/13/2021	Cobalt, total	mg/L	0.001 U
17	08/03/2021	Cobalt, total	mg/L	0.001 U
17	09/09/2021	Cobalt, total	mg/L	0.001 U
17	03/22/2022	Cobalt, total	mg/L	0.001 U
17	02/24/2021	Fluoride, total	mg/L	0.220
17	03/18/2021	Fluoride, total	mg/L	0.180
17	04/08/2021	Fluoride, total	mg/L	0.230
17	05/06/2021	Fluoride, total	mg/L	0.320
17	06/08/2021	Fluoride, total	mg/L	0.290
17	06/23/2021	Fluoride, total	mg/L	0.290
17	07/13/2021	Fluoride, total	mg/L	0.290
17	08/03/2021	Fluoride, total	mg/L	0.250
17	09/09/2021	Fluoride, total	mg/L	0.240
17	03/22/2022	Fluoride, total	mg/L	0.180
17	09/14/2022	Fluoride, total	mg/L	0.220
17	02/24/2021	Lead, total	mg/L	0.001 U
17	03/18/2021	Lead, total	mg/L	0.001 U
17	04/08/2021	Lead, total	mg/L	0.001 U
17	05/06/2021	Lead, total	mg/L	0.001 U
17	06/08/2021	Lead, total	mg/L	0.001 U
17	06/23/2021	Lead, total	mg/L	0.001 U
17	07/13/2021	Lead, total	mg/L	0.001 U
17	08/03/2021	Lead, total	mg/L	0.001 U
17	09/09/2021	Lead, total	mg/L	0.001 U
17	03/22/2022	Lead, total	mg/L	0.001 U
17	02/24/2021	Lithium, total	mg/L	0.00699
17	03/18/2021	Lithium, total	mg/L	0.00830
17	04/08/2021	Lithium, total	mg/L	0.00520
17	05/06/2021	Lithium, total	mg/L	0.005 U
17	06/08/2021	Lithium, total	mg/L	0.00580
17	06/23/2021	Lithium, total	mg/L	0.00610

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HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
17	07/13/2021	Lithium, total	mg/L	0.00660
17	08/03/2021	Lithium, total	mg/L	0.00620
17	09/09/2021	Lithium, total	mg/L	0.00620
17	03/22/2022	Lithium, total	mg/L	0.0101
17	02/24/2021	Mercury, total	mg/L	0.0002 U
17	03/18/2021	Mercury, total	mg/L	0.0002 U
17	04/08/2021	Mercury, total	mg/L	0.0002 U
17	05/06/2021	Mercury, total	mg/L	0.0002 U
17	06/08/2021	Mercury, total	mg/L	0.0002 U
17	06/23/2021	Mercury, total	mg/L	0.0002 U
17	07/13/2021	Mercury, total	mg/L	0.0002 U
17	08/03/2021	Mercury, total	mg/L	0.0002 U
17	03/22/2022	Mercury, total	mg/L	0.0002 U
17	02/24/2021	Molybdenum, total	mg/L	0.00560
17	03/18/2021	Molybdenum, total	mg/L	0.00400
17	04/08/2021	Molybdenum, total	mg/L	0.00530
17	05/06/2021	Molybdenum, total	mg/L	0.00761
17	06/08/2021	Molybdenum, total	mg/L	0.00770
17	06/23/2021	Molybdenum, total	mg/L	0.00760
17	07/13/2021	Molybdenum, total	mg/L	0.00750
17	08/03/2021	Molybdenum, total	mg/L	0.00650
17	09/09/2021	Molybdenum, total	mg/L	0.00600
17	03/22/2022	Molybdenum, total	mg/L	0.00340
17	02/24/2021	Radium 226 + Radium 228, total	pCi/L	0.382
17	03/18/2021	Radium 226 + Radium 228, total	pCi/L	0.116
17	04/08/2021	Radium 226 + Radium 228, total	pCi/L	0.103
17	05/06/2021	Radium 226 + Radium 228, total	pCi/L	0.257
17	06/08/2021	Radium 226 + Radium 228, total	pCi/L	0.408
17	06/23/2021	Radium 226 + Radium 228, total	pCi/L	0.511
17	07/13/2021	Radium 226 + Radium 228, total	pCi/L	0.0926
17	08/03/2021	Radium 226 + Radium 228, total	pCi/L	0.0882
17	09/09/2021	Radium 226 + Radium 228, total	pCi/L	0.511
17	02/24/2021	Selenium, total	mg/L	0.001 U
17	03/18/2021	Selenium, total	mg/L	0.001 U
17	04/08/2021	Selenium, total	mg/L	0.001 U
17	05/06/2021	Selenium, total	mg/L	0.001 U
17	06/08/2021	Selenium, total	mg/L	0.001 U
17	06/23/2021	Selenium, total	mg/L	0.001 U
17	07/13/2021	Selenium, total	mg/L	0.001 U
17	08/03/2021	Selenium, total	mg/L	0.001 U
17	09/09/2021	Selenium, total	mg/L	0.001 U
17	03/22/2022	Selenium, total	mg/L	0.001 U
17	02/24/2021	Thallium, total	mg/L	0.002 U
17	03/18/2021	Thallium, total	mg/L	0.002 U
17	04/08/2021	Thallium, total	mg/L	0.002 U
17	05/06/2021	Thallium, total	mg/L	0.001 U

APPENDIX C2
ANALYTICAL RESULTS USED IN BACKGROUND CALCULATIONS
2023 40 C.F.R. § 257 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
LANDFILL
HENNEPIN, IL

Well ID	Date	Parameter	Unit	Result
17	06/08/2021	Thallium, total	mg/L	0.002 U
17	06/23/2021	Thallium, total	mg/L	0.002 U
17	07/13/2021	Thallium, total	mg/L	0.002 U
17	08/03/2021	Thallium, total	mg/L	0.002 U
17	03/22/2022	Thallium, total	mg/L	0.002 U

Notes:
mg/L = milligrams per liter
pCi/L = picoCuries per liter
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate.

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APPENDIX D
ALTERNATIVE SOURCE DEMONSTRATIONS

Prepared for
Dynegy Midwest Generation, LLC

Date
May 1, 2023

Project No.
1940103649-008

40 C.F.R. § 257.94(e)(2): ALTERNATE SOURCE DEMONSTRATION

LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS
CCR UNIT 801

RAMBOLL Bright ideas. Sustainable change.

CERTIFICATIONS

I, Brian G. Hennings, a professional geologist in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used other than for its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.

Brian G. Hennings
Professional Geologist
196-001482
Illinois
Ramboll Americas Engineering Solutions, Inc.
Date: May 1, 2023

I, Eric J. Tlachac, a qualified professional engineer in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used other than for its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.

Eric J. Tlachac
Qualified Professional Engineer
062-063091
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Ramboll Americas Engineering Solutions, Inc.
Date: May 1, 2023

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TABLES (IN TEXT)

Table A	Construction Events Affecting AP2 and AP4

FIGURES (IN TEXT)

Figure A	Box-Whisker Plot Showing Distribution of Total Boron
Figure B	Box-Whisker Plot Showing Total Fluoride Concentrations

FIGURES (ATTACHED)

Figure 1	Monitoring Well Location Map
Figure 2	Potentiometric Surface Map – September 13-14, 2022

APPENDICES

Appendix A	Groundwater Elevation Contour Maps
Appendix B	Bottom Ash Leachate Data

ACRONYMS AND ABBREVIATIONS

40 C.F.R.	Title 40 of the Code of Federal Regulations
AP2	Ash Pond No. 2
AP4	Ash Pond No. 4
ASD	Alternate Source Demonstration
CCR	coal combustion residuals
CCR Rule	40 C.F.R. § 257 Subpart D
CEC	Civil & Environmental Consultants, Inc.
cm/s	centimeters per second
D11	Detection Monitoring Round 11
HDPE	high-density polyethylene
Hennepin East	includes Landfill, AP2, AP4, and East Ash Pond
HPP	Hennepin Power Plant
IEPA	Illinois Environmental Protection Agency
LOE(s)	line(s) of evidence
mg/L	milligrams per liter
NAVD88	North American Vertical Datum of 1988
No.	Number
NPDES	National Pollutant Discharge Elimination System
NRT	Natural Resource Technology, Inc.
NRT/OBG	Natural Resource Technology, an OBG Company
OBG	O'Brien & Gere Engineers, Inc.
OWAP	Old West Ash Pond
oz/sy	ounce per square yard
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SSI	statistically significant increase

1. INTRODUCTION

Title 40 of the Code of Federal Regulations (40 C.F.R.) § 257.94(e)(2) allows the owner or operator of a coal combustion residuals (CCR) unit 90 days from the date of determination of statistically significant increases (SSI) over background for groundwater constituents listed in Appendix III of 40 C.F.R. § 257 to complete a written demonstration that a source other than the CCR unit being monitored caused the SSI(s) (Alternate Source Demonstration [ASD]), or that the SSI(s) resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

This ASD has been prepared on behalf of Dynegy Midwest Generation, LLC, by Ramboll Americas Engineering Solutions, Inc. (Ramboll), to provide pertinent information pursuant to 40 C.F.R. § 257.94(e)(2) for the Hennepin Power Plant (HPP) Landfill, located near Hennepin, Illinois.

The most recent Detection Monitoring sampling event (Detection Monitoring Round 11 [D11]) samples were collected on September 14, 2022, and analytical data were received on October 31, 2022. In accordance with 40 C.F.R. § 257.93(h)(2), statistical analysis of the data to identify SSIs of 40 C.F.R. § 257 Subpart D (CCR Rule) Appendix III parameters over background concentrations was completed by January 31, 2023. The statistical determination identified the following SSIs at compliance monitoring wells:

- Boron at wells 05R, 05DR, 40S, and 48
- Fluoride at wells 05R, 05DR, 40S, and 48
- pH at wells 05R, 40S

Pursuant to 40 C.F.R. § 257.94(e)(2), the lines of evidence (LOEs) described in **Section 3** demonstrate that sources other than the Landfill were the cause of the SSIs listed above. This ASD was completed by May 1, 2023, within 90 days of determination of the SSIs, as required by 40 C.F.R. § 257.94(e)(2).

2. BACKGROUND

2.1 Site Location and Description

The HPP is located in the northwest quarter of Section 26, Township 33 North, Range 2 West, Putnam County, Illinois and approximately 3 miles north-northeast of the Village of Hennepin. The Landfill is located east of the HPP, situated less than 200 feet from the south bank of the Illinois River and approximately one mile east of the Big Bend, where the river shifts course from predominantly west to predominantly south.

The Landfill is one of four CCR units regulated under 40 C.F.R. § 257 Subpart D (CCR Rule) at the HPP. Three CCR units (the Landfill, Ash Pond Number (No.) 2 [AP2], and the East Ash Pond) and one unit not regulated by the CCR Rule (Ash Pond No. 4 [AP4]) are located adjacent to each other and east of the HPP and are collectively known as Hennepin East. The fourth CCR unit (Old West Ash Pond [OWAP]), is located west of the HPP. Areas surrounding the Landfill include industrial properties to the east and south, agricultural land to the southwest, and the HPP to the west. The CCR units at Hennepin East and surrounding properties are shown on **Figure 1**.

2.2 Groundwater Monitoring

The Landfill groundwater monitoring system for compliance with the CCR Rule consists of three background monitoring wells (07, 08, and 08D) and four compliance monitoring wells (05R, 05DR, 40S, and 48). A map showing the groundwater monitoring system, including the CCR unit and all background and compliance monitoring wells, is presented in **Figure 1**. **Figure 1** also includes monitoring wells for other CCR units located upgradient of the Landfill (12, 13, 16, and 17) which are not part of the Landfill monitoring system but are used to support the LOEs discussed in **Section 3**.

Groundwater samples are collected and analyzed in accordance with the Sampling and Analysis Plan prepared for the Landfill (Natural Resource Technology, an OBG Company [NRT/OBG], 2017b). Statistical evaluation of analytical data is performed in accordance with the Statistical Analysis Plan (NRT/OBG, 2017a).

2.3 Site History

The HPP has two coal-fired generating units constructed in 1953 and 1959 with a total capacity of 210 Megawatts. Operations were ceased in November 2019. The coal source changed several times during the plant's operational history. The history of CCR management at Hennepin East is summarized below.

AP2/AP4: AP2 was used to store and dispose fly ash, bottom ash, and other non-CCR waste streams, including coal pile runoff. The pond originally encompassed the area that currently includes the existing AP2, the Landfill, and the Leachate Pond (not a CCR unit). AP2 has been inactive since 1996 and currently encompasses approximately 18 acres. AP2 is unlined with a lowermost, but variable, bottom elevation (referenced to the North American Vertical Datum of 1988 [NAVD88]) of 451 feet. AP4 (located south of AP2) is an unlined, closed impoundment (capped or otherwise maintained) not subject to CCR Rule requirements.

A Modified Closure Work Plan was submitted to Illinois Environmental Protection Agency (IEPA) in 2010 proposing closure of AP2 by capping with future Landfill phases as they were constructed

(Kelron Environmental and Natural Resource Technology, Inc. [NRT], 2010). The Modified Closure Work Plan was approved by IEPA in a letter dated March 3, 2010. The Landfill is Phase I of the Modified Closure Work Plan. The formerly proposed Landfill Phases II, III, and IV will no longer be constructed upon AP2. Therefore, a Closure and Post Closure Care Plan for AP2 was submitted for IEPA approval in February 2018 (Civil & Environmental Consultants, Inc. [CEC], 2018). A Closure Plan Addendum, which incorporates AP4, was submitted in October 2018 (O'Brien & Gere Engineers, Inc. [OBG] and CEC, 2018). IEPA approved the Closure and Post Closure Care Plan for Hennepin AP2/AP4 on February 26, 2020, following correspondence in 2019 (OBG, part of Ramboll, 2019) to address IEPA comments. Closure construction began on May 21, 2020, and was completed on November 17, 2020. The final cover system on AP2/AP4 consists of a 24-inch compacted soil barrier with a hydraulic conductivity of no more than 1×10^{-7} centimeters per second (cm/s) overlain by a 6-inch thick vegetative cover layer. The cover system was extended eastward to overlap with the western end of the Landfill geomembrane liner and southward to the side slope of the East Ash Pond. The approximate dates of construction affecting AP2 and AP4 are summarized in **Table A** below (AECOM, 2016).

Table A. Construction Events Affecting AP2 and AP4

Date	Event
1958	Construction of AP2.
1978	Embankment raise of AP2.
1985	Embankment raise of AP2 to elevation 484 feet NAVD88.
1989	Embankment raise of AP2 to elevation 494 feet NAVD88.
1996	AP2 was removed from service and completely dewatered.
2009 to 2010	Eastern portion of AP2 was removed to facilitate construction of the Leachate Pond.
2010/2011	Landfill Phase I cell was constructed in 2010 over placed CCR in AP2 adjacent to the Leachate Pond. In February 2011, 7,500 cubic yards of bottom ash was placed into the Phase I cell as a post-construction freeze-protection measure to protect the leachate collection system and geomembrane liner. No other material (fly ash or bottom ash) has been placed in the Landfill since.
2014	North Embankment tree removal, grading, and vegetation re-establishment adjacent to AP2.
2020	AP2 and AP4 closed in place in accordance with IEPA-approved closure plan.

Landfill: The Landfill Phase I cell, covering approximately 4.5 acres, was constructed in 2010 over existing, dewatered CCR in AP2 as part of the Modified Closure Work Plan for AP2. The Phase I cell was constructed with a composite liner (geomembrane over compacted clay) and leachate collection system above the liner that transfers collected precipitation and leachate to the Leachate Pond. Ash fill underlying the Landfill is known to be present to a minimum elevation of 454 feet (referenced to NAVD88).

In February 2011, 7,500 cubic yards of bottom ash was placed into the Landfill as a post-construction freeze protection measure to protect the leachate collection system and geomembrane liner. No other material has been placed in the Landfill since.

East Ash Pond: The East Ash Pond was used to store and dispose bottom ash, fly ash, and other non-CCR waste, and to clarify process water prior to discharge in accordance with the plant's National Pollutant Discharge Elimination System (NPDES) permit. The pond was constructed in

two phases. The first phase occurred in 1995 when the initial embankment was constructed to a total height of 32 feet with a lowermost, but variable, bottom elevation of the pond at 458 feet. The original pond bottom was lined with a 4-foot thick layer of compacted clay with a hydraulic conductivity of 1 x 10^{-7} cm/s, underlain by a 1-foot thick sand layer (AECOM, 2016). The pond depth behind the original embankment was 15 feet with 5 feet of freeboard. The embankment was raised 12 feet in 2003 to a total impoundment depth of 30 feet with 2 feet of freeboard. The liner system of the embankment raise consisted of (from top to bottom) a 45-mil reinforced polypropylene geomembrane, a 1-foot thick clay layer, and an 8 ounce per square yard (oz/sy) polypropylene geotextile fabric. This pond was used for the treatment of bottom ash transport water, miscellaneous low volume wastewater streams, and storage of unsold fly ash until plant operations ceased in November 2019.

Polishing Pond: The Polishing Pond (located east of the East Ash Pond) is not subject to CCR Rule requirements and was constructed in 1995 with a 48-inch-thick compacted clay liner having a vertical hydraulic conductivity of 1 x 10^{-7} cm/s.

Leachate Pond: The Leachate Pond (located east of the Landfill) is not subject to CCR Rule requirements and is a 25.5-acre-foot pond constructed with a composite liner consisting of 60-mil high-density polyethylene (HDPE) overlying two feet of compacted clay with a vertical hydraulic conductivity of 1 x 10^{-7} cm/s. Construction was completed December 2010.

2.4 Site Hydrogeology and Stratigraphy

A detailed hydrogeological assessment of the HPP was completed and submitted as part of the February 2018 supplemental Closure and Post Closure Care Plan for AP2 and subsequent Addenda (previously referenced). Information pertinent to this ASD is included in this report; however, more complete information on site hydrogeology and stratigraphy is available in the Closure Plan Addendum (OBG and CEC, 2018).

There are three dominant geomorphic features in the immediate vicinity of the HPP: an upper river terrace at an elevation of about 500 to 550 feet NAVD88, a lower river terrace at an elevation of about 450 to 460 feet NAVD88, and the current river valley filled with alluvium to an elevation of about 445 feet NAVD88. The HPP, AP2, and the Landfill were constructed on the original narrow lower river terrace between the Illinois River and the upper terrace. The original lower river terrace is approximately 10 to 20 feet above the average river level at the HPP (elevation 443.7 feet NAVD88) based upon measurements collected between 2003 and 2018 (OBG, part of Ramboll, 2020). The AP2 berm slopes steeply toward the river and its toe is close to the riverbank. The East Ash Pond, Polishing Pond, and AP4 were constructed on the upper river terrace at an elevation of approximately 500 to 505 feet NAVD88, or 60 to 65 feet above the average river level.

The hydrogeological assessment identified that the stratigraphy within and immediately surrounding Hennepin East consists of fill, unlithified river alluvium, and Pleistocene-age glacial outwash deposits overlying Pennsylvanian-age shale bedrock. Constructed berms consist of a variety of locally available materials, primarily sand, gravel, and coal ash. Where undisturbed or partially excavated, the native surficial soil at the site is poorly drained, moderately permeable silty clay loam formed as alluvium in floodplains.

There are two hydrogeologic units present at Hennepin East: alluvium and Henry Formation sands and gravels. The river is immediately adjacent to the lower terrace, east of Hennepin East,

and there is minimal alluvium between Hennepin East and the river. The highly permeable Henry Formation sands and gravels make up the upper and lower terraces and fill the valley beneath the alluvium. The sands and gravels of the two terraces are indistinguishable, consisting of a heterogeneous mixture of silty-sandy gravel with cobble zones and boulders up to several feet in diameter. The Henry Formation is more than 100 feet thick in the river valley and at least 130 feet thick on the upper terrace.

The Henry Formation and alluvium comprise the Uppermost Aquifer at Hennepin East and extend from the water table to the bedrock. The Uppermost Aquifer extends about 7,000 feet upgradient from Hennepin East to the south, where clay-rich glacial till is encountered. Glacial tills such as this typically yield little water.

The Pennsylvanian-age bedrock consists of interbedded layers of shale with thin limestone, sandstone, and coal beds. The shale bedrock unit has low hydraulic conductivity and defines the lower boundary of the Uppermost Aquifer.

The hydraulic gradient within the Uppermost Aquifer in the vicinity of Hennepin East varies with the elevation of the Illinois River (see select groundwater elevation contour maps in **Appendix A**). The direction of groundwater flow is most often toward the river to the north and west, but comparison of groundwater and river elevation data indicate reversals in this flow direction during times of high river elevations. The relative duration of these events is short, which leads to the determination of a predominant groundwater flow direction toward the river to the north and west.

Groundwater elevations were obtained from measurements in monitoring wells on September 13-14, 2022, prior to the D11 sampling event at the site. Groundwater elevations for Hennepin East during the D11 sampling event are shown in **Figure 2** and ranged from 443.25 feet NAVD88 (in well 55) to 454.90 feet NAVD88 (in well 15). Groundwater flow was generally towards the Illinois River with groundwater flowing from southeast to northwest beneath the Landfill.

3. ALTERNATE SOURCE DEMONSTRATION: LINES OF EVIDENCE

As allowed by 40 C.F.R. § 257.94(e)(2), this ASD demonstrates that sources other than the Landfill (the CCR unit) caused the SSIs. LOEs supporting this ASD include the following:

1. Landfill liner design.
2. Concentrations of boron in landfill leachate are lower than those observed in downgradient groundwater.
3. Previous vertical infiltration of surface water through ash fill in AP2.
4. Upgradient concentrations of fluoride.

Data and information supporting these LOEs are discussed in more detail below.

3.1 LOE #1: Landfill Liner Design

The Landfill was constructed in 2010 with a 60-mil HDPE geomembrane overlying three feet of compacted clay with hydraulic conductivity of $1x10^{-7}$ cm/sec (CEC, 2010). Precipitation and/or leachate that collects on top of the liner is removed by a leachate collection system and transferred to the Leachate Pond for management. The Leachate Pond is also lined with a 60-mil HDPE liner overlying two feet of compacted clay.

The IEPA-approved Landfill composite liner system exceeds the design criteria for a composite liner for new CCR landfills established by 40 C.F.R. § 257.70(b). The composite liner design criteria were established to help prevent contaminants in CCR from leaking from the CCR unit and impacting groundwater. Therefore, the presence of the composite liner suggests that the Landfill is not the source of the observed SSIs.

3.2 LOE #2: Concentrations of Boron in Landfill Leachate are Lower than those Observed in Downgradient Groundwater

The only material that has been placed in the lined Landfill consists of a layer of coarse bottom ash (7,500 cubic yards or 11,625 tons) to protect the leachate collection system and geomembrane liner from freezing. There has been no additional CCR landfilling activity within the lined area since the bottom ash freeze protection layer was installed.

Analytical data (**Appendix B**) from two samples of bottom ash leachate derived in the laboratory (extraction method ASTM D3987, shake extraction with water) identified boron concentrations of 0.193 milligrams per liter (mg/L) (2009 sample) and 0.197 mg/L (2008 sample).

A box-whisker plot of total boron concentrations detected between 2015 and 2022 at monitoring wells near the Landfill is shown on **Figure A** on the following page. The boron concentrations of 0.193 and 0.197 mg/L detected in the laboratory-derived leachate samples are below the boron concentrations observed in downgradient wells as shown in **Figure A**. Analytical data available for laboratory-derived leachate from the bottom ash placed in the Landfill indicates that the bottom ash is not capable of leaching boron in concentrations observed in the downgradient monitoring wells.

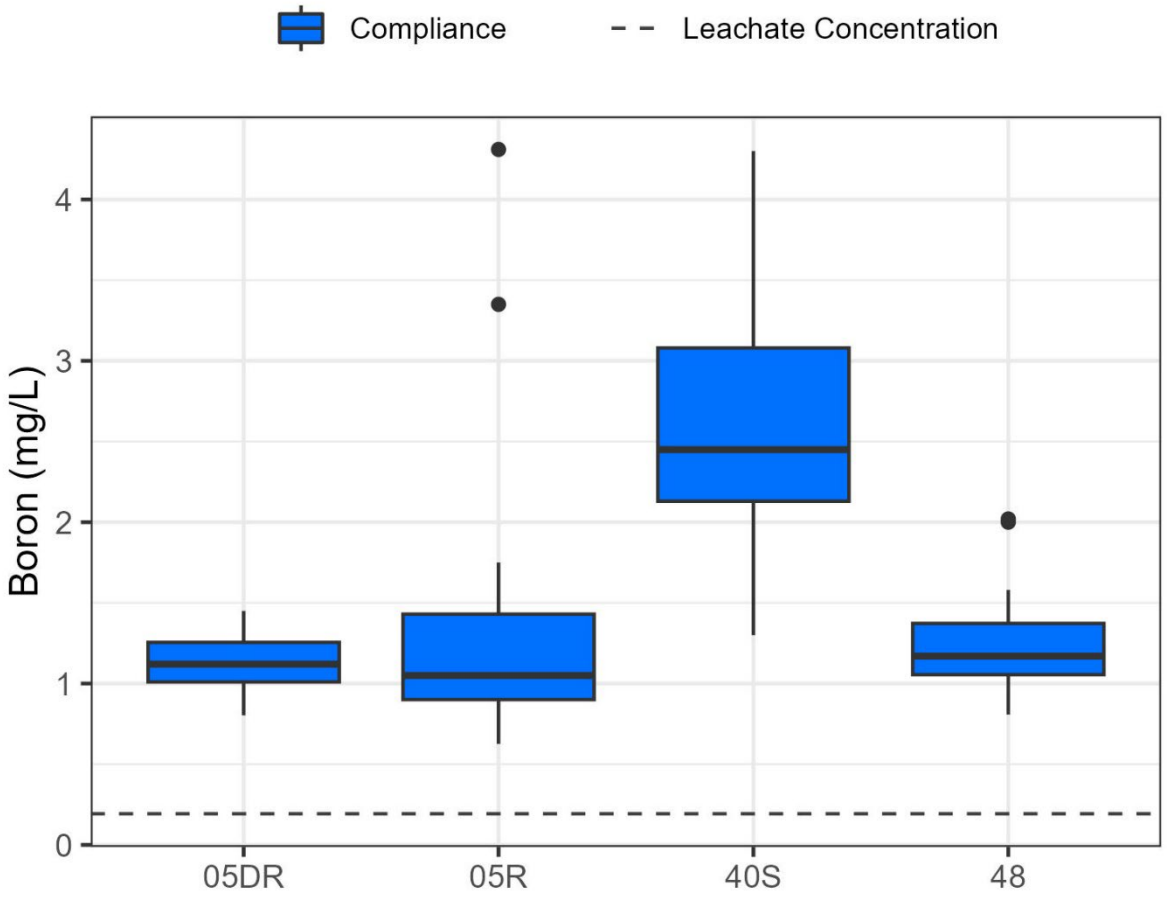


Figure A. Box-Whisker Plot Showing Distribution of Total Boron.

3.3 LOE #3: Previous Vertical Infiltration of Surface Water through Ash Fill in AP2

The Landfill was constructed over the eastern portion of AP2 as Phase I of an IEPA-approved Modified Closure Work Plan for AP2. The portions of AP2 to the west of the Landfill were previously exposed, and subject to infiltration of precipitation and generation of CCR leachate. AP2 is unlined, and prior to capping of the eastern end of the ash pond by construction of the Landfill liner, potentially allowed CCR constituents to percolate downward to groundwater. The previously exposed portions of AP2 outside of the footprint of the Landfill may be an alternate source for CCR parameters observed in groundwater near the Landfill. However, a soil cover designed to minimize surface water infiltration and CCR-impacts to groundwater was constructed over these exposed portions of AP2 in 2020 as part of a Closure and Post Closure Care Plan for AP2 approved by IEPA on February 26, 2020.

Comparison of groundwater and Illinois River elevation data indicate that natural variation in river elevation related to flood events occasionally causes groundwater flow reversal and increases in groundwater elevations in the Uppermost Aquifer beneath the Landfill. When river elevations rise above 451 to 454 feet NAVD88, low-lying ash deposits underlying the Landfill have the potential to become partially saturated for a transient period. The short-term, partial

saturation may result in a temporary change to some CCR constituent concentrations at some compliance locations after the predominant groundwater flow direction is reestablished. Explicit simulation of flood events (OBG, part of Ramboll, 2020) indicates that potential increases in concentrations from flooding of the Illinois River are small and transient, such that long-term concentrations will not be significantly affected.

3.4 LOE #4: Upgradient Concentrations of Fluoride

The groundwater potentiometric surface map in **Figure 2** shows a major component of unconfined groundwater flow originates from areas upgradient of the Landfill to the east and south. A box-whisker plot of total fluoride concentrations detected between 2015 and 2022 at monitoring wells near the Landfill is presented in **Figure B** on the following page. Included on this figure are total fluoride concentrations detected at background and downgradient compliance wells, as well as those detected at other wells upgradient of the Landfill, but not part of the monitoring system for the Landfill (12, 13, 16, and 17).

The box-whisker plot on **Figure B** shows two groupings of total fluoride concentrations as follows:

- Low Concentrations: The low concentrations are at background wells 07, 08, and 08D and downgradient compliance wells 05R, 05DR, 40S, and 48.
- High Concentrations: The high concentrations of fluoride occur at wells 12 and 13, located upgradient of the Landfill, and at wells 16 and 17 located upgradient of the East Ash Pond near the property boundary.

The fact that concentrations of fluoride are higher in monitoring wells upgradient of the Landfill than those in downgradient wells demonstrates that the Landfill is not the source of fluoride SSIs observed in the compliance wells.

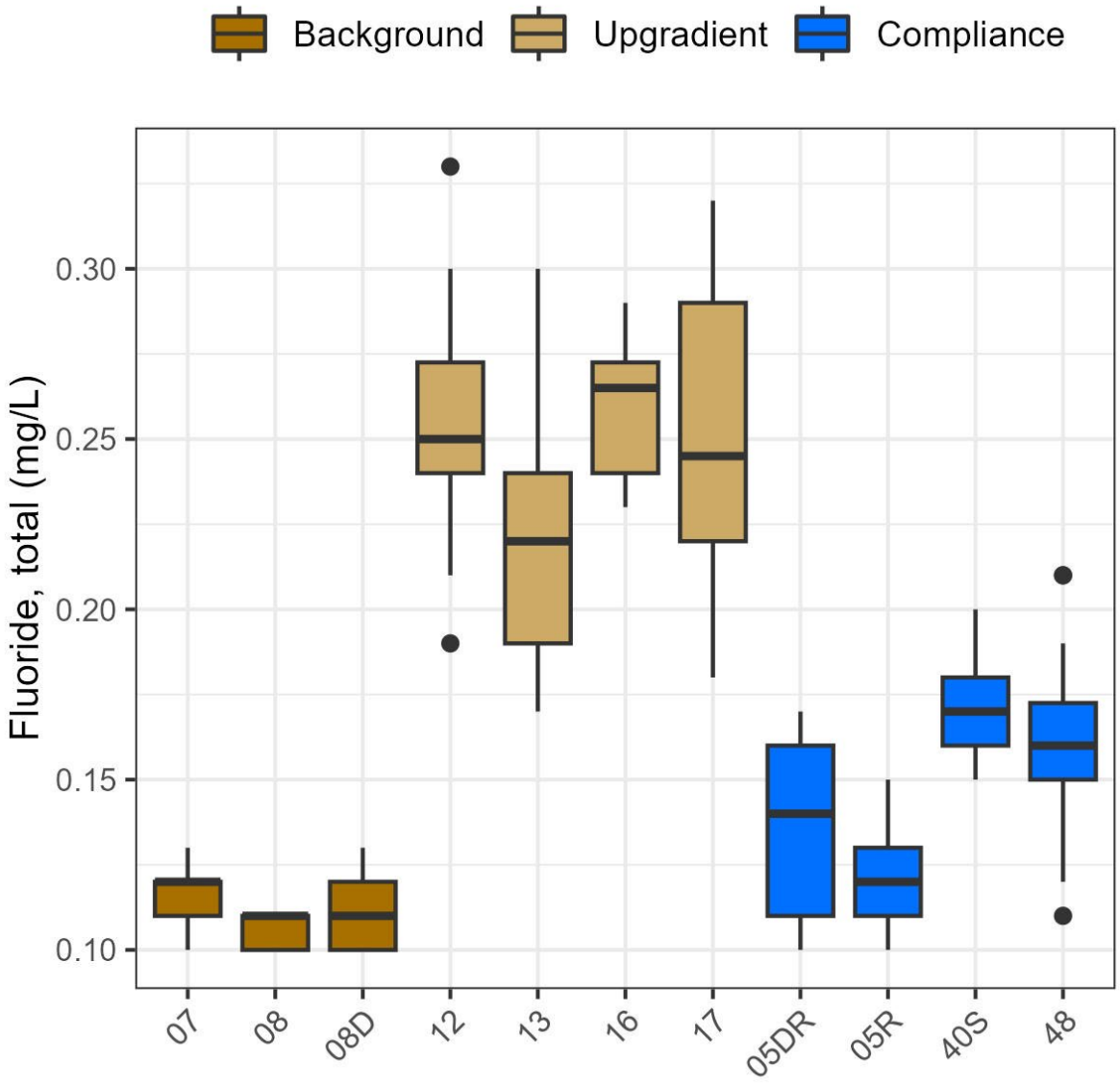


Figure B. Box-Whisker Plot Showing Total Fluoride Concentrations.

4. CONCLUSIONS

Based on these four LOEs, it has been demonstrated that the Landfill is not the source of the boron, fluoride, and pH SSIs identified in wells 05R, 05DR, 40S, and 48.

1. Landfill liner design.
2. Concentrations of boron in landfill leachate are lower than those observed in downgradient groundwater.
3. Previous vertical infiltration of surface water through ash fill in AP2.
4. Upgradient concentrations of fluoride.

Based on the LOEs presented, the following alternate sources are causing the SSIs observed in the Landfill's compliance wells:

- Boron: SSIs for boron may be attributed to portions of AP2 to the west of the Landfill that were previously exposed, and subject to infiltration of precipitation and generation of CCR leachate outside the Landfill boundary.
- Fluoride: It is likely that areas upgradient of the Landfill present alternate sources of fluoride based on the fact that concentrations of fluoride are higher upgradient of the Landfill than downgradient of the Landfill.
- pH: SSIs for pH may be attributed to portions of AP2 to the west of the Landfill that were previously exposed, and subject to infiltration of precipitation and generation of CCR leachate outside the Landfill boundary.

This information serves as the written ASD report prepared in accordance with 40 C.F.R. § 257.94(e)(2) that SSIs observed during the D11 monitoring event were not caused by the Landfill but were from other sources. Therefore, an assessment monitoring program is not required, and the Landfill will remain in detection monitoring.

5. REFERENCES

AECOM, 2016. Hennepin Power Station – History of Construction, 40 CFR § 257.73(c). October 2016.

Civil & Environmental Consultants, Inc. (CEC), 2010. Hennepin CCW Landfill – Phase 1 Construction Completion Report, Hennepin Power Station, Hennepin, Putnam County, Illinois. December 2010.

Civil & Environmental Consultants, Inc. (CEC), 2018. Closure and Post-Closure Care Plan for the Hennepin East Ash Pond No. 2, Hennepin Power Station. February 2018.

Kelron Environmental and Natural Resource Technology, Inc. (NRT), 2010. Initial Facility Report – Hennepin Power Station, New Coal Combustion Waste Landfill. December 10, 2010.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017a. Statistical Analysis Plan, Baldwin Energy Complex, Havana Power Station, Hennepin Power Station, Wood River Power Station, Dynegy Midwest Generation, LLC. October 17, 2017.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017b. Sampling and Analysis Plan, Hennepin Landfill, Hennepin Power Station, Hennepin, Illinois, Project No. 2285, Revision 0. October 17, 2017.

O'Brien & Gere Engineers, Inc. (OBG) and Civil & Environmental Consultants, Inc. (CEC), 2018. Closure Plan Addendum, Hennepin East Ash Pond No. 2, Hennepin, Illinois. October 25, 2018.

O'Brien & Gere Engineers, Inc., part of Ramboll (OBG, part of Ramboll), 2019. Response to IEPA Comments - Closure and Post-Closure Care Plan for the Hennepin East Ash Pond No. 2 and Closure Plan Addendum Hennepin East Ash Pond No 2 which includes closure of Ash Pond No. 4. July 22, 2019.

O'Brien & Gere Engineers, Inc., part of Ramboll (OBG, part of Ramboll), 2020. River Flood Evaluation Report, Hennepin East Ash Pond No. 2 and No. 4, Closure Plan Addendum 3. January 15, 2020.

FIGURES

BACKGROUND WELL
COMPLIANCE WELL
MONITORING WELL
PART 257 REGULATED UNIT (SUBJECT UNIT)
SITE FEATURE
LIMITS OF FINAL COVER
PROPERTY BOUNDARY

0 175 350
Feet

MONITORING WELL LOCATION MAP

ALTERNATE SOURCE DEMONSTRATION
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\22\22851\MXD\Alt_Source_Dem\HenEastLandfill_D9\Figure 1_Monitoring Well Location Map.mxd

PROJECT: 169000XXXX | DATED: 4/11/2022 | DESIGNER: galammc

COMPLIANCE MONITORING WELL

BACKGROUND MONITORING WELL

MONITORING WELL

GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)

INFERRED GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

GROUNDWATER MANAGEMENT ZONE

PART 257 REGULATED UNIT (SUBJECT UNIT)

LIMITS OF FINAL COVER

SITE FEATURE

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)

*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT

0 175 350

Feet

POTENTIOMETRIC SURFACE MAP SEPTEMBER 13 AND 14, 2022

ALTERNATE SOURCE DEMONSTRATION
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

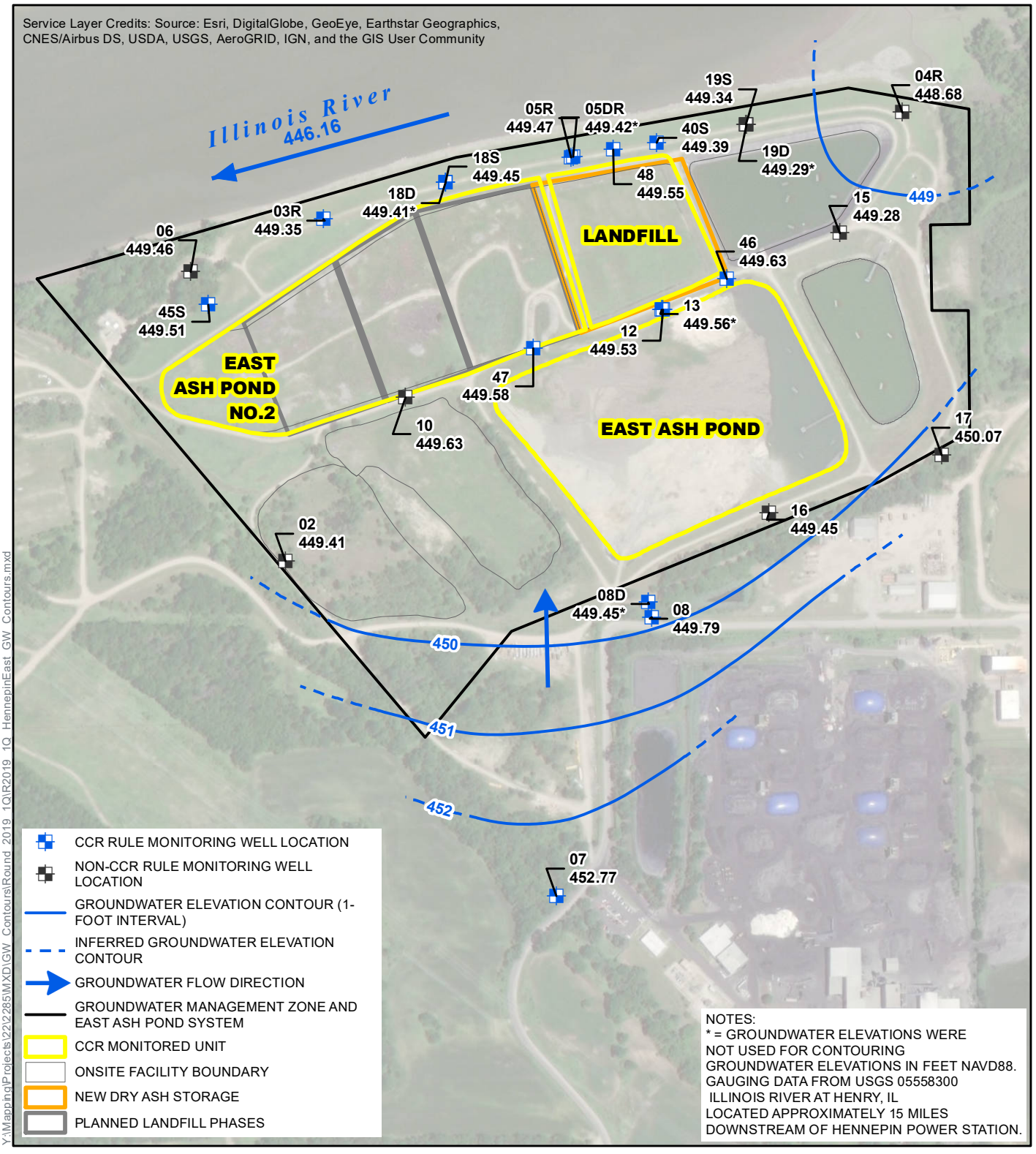
RAMBOLL

Y:\Mapping\Projects\221\285Hennepin East\MXD\2022AR_ElLandfill\Figure 3-3_GWE Contours 20220913.mxd

PROJECT: 169000XXXX | DATED: 2/23/2023 | DESIGNER: galanmc

APPENDICES

APPENDIX A
GROUNDWATER ELEVATION CONTOUR MAPS



Y:\Mapping\Projects\221285\MXD\GW_Contours\Round_2019_1Q\R2019_1Q_HennepinEast_GW_Contours.mxd

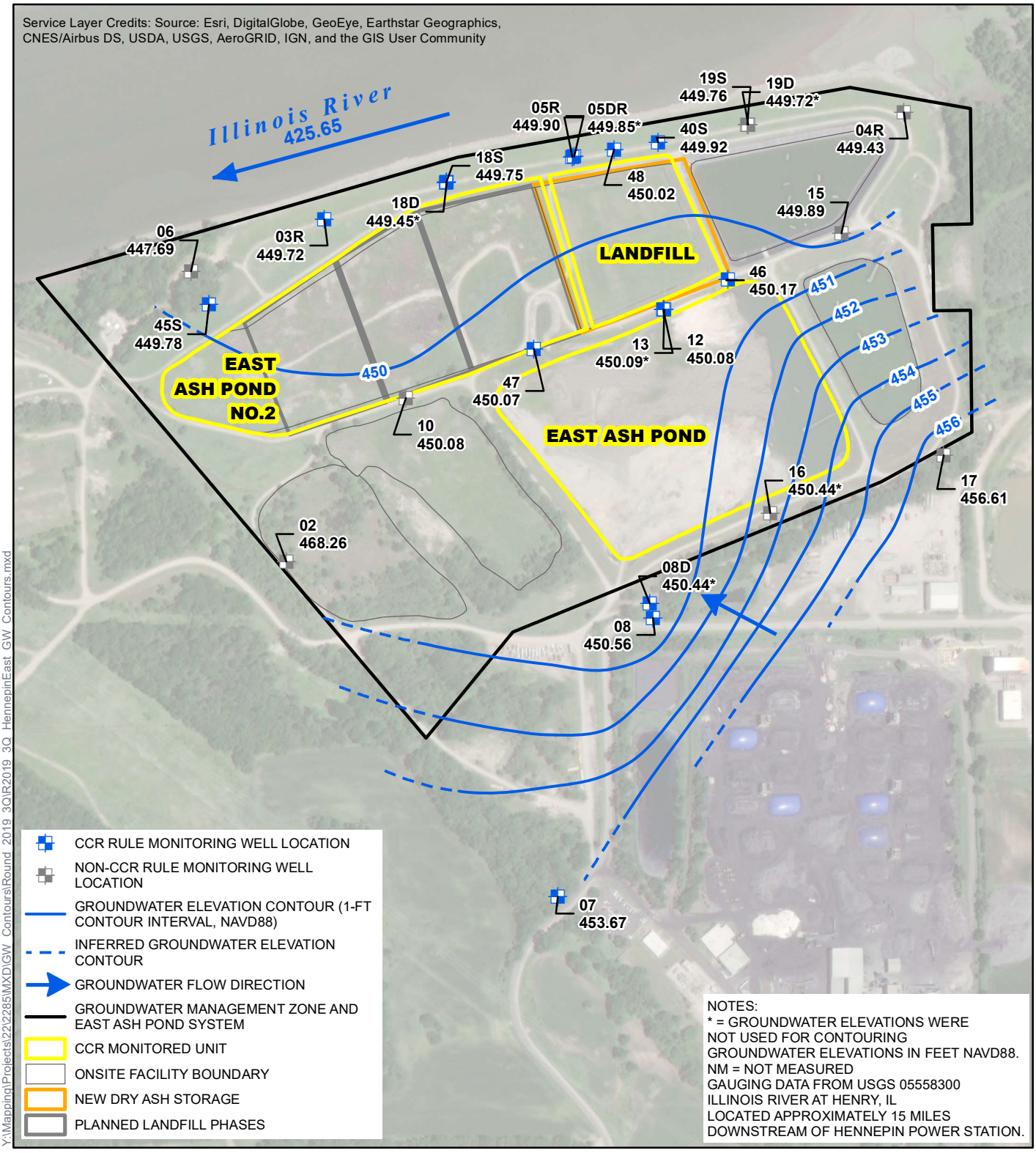
HENNEPIN LANDFILL (UNIT ID: 801), HENNEPIN ASH POND NO. 2 (UNIT ID: 802), AND HENNEPIN EAST ASH POND (UNIT ID: 803) GROUNDWATER ELEVATION CONTOUR MAP MARCH 13, 2019

CCR RULE GROUNDWATER MONITORING
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

0 125 250 500
Feet

N

O'BRIEN & GERE ENGINEERS, INC.



HENNEPIN LANDFILL (UNIT ID: 801), HENNEPIN ASH POND NO. 2 (UNIT ID: 802), AND HENNEPIN EAST ASH POND (UNIT ID: 803)
GROUNDWATER ELEVATION CONTOUR MAP
SEPTEMBER 17, 2019

CCR RULE GROUNDWATER MONITORING
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

N

0 125 250 500
Feet

O'BRIEN & GERE ENGINEERS, INC.

APPENDIX B
BOTTOM ASH LEACHATE DATA

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

August 03, 2009

John Augspols
Dynegy Midwest Generation
13498 East 800th Street
Hennepin, IL 61327
TEL: (815) 339-9218
FAX:

ACCREDITED IN ACCORDANCE WITH nelac

NELAP Accredited #100226

RE: Hennepin Station Bottom Ash **WorkOrder:** 09070896

Dear John Augspols:

TEKLAB, INC received 1 sample on 7/24/2009 9:00:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. IL ELAP and NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column.

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

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

Sincerely,

Heather A. White

Heather A. White
Project Manager
(618)344-1004 ex 20

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

Client: Dynegy Midwest Generation
Project: Hennepin Station Bottom Ash
LabOrder: 09070896
Report Date: 03-Aug-09

CASE NARRATIVE

Cooler Receipt Temp: 22.8 °C

State accreditations:

KS: NELAP #E-10347 | KY: UST #0073 | MO: DNR #00930 | AR: ADEQ #70-028-0

Qualifiers

DF - Dilution Factor	**B** - Analyte detected in the associated Method Blank	**C** - Client requested RL below PQL
RL - Reporting Limit	**J** - Analyte detected below reporting limits	**D** - Diluted out of sample
ND - Not Detected at the Reporting Limit	**R** - RPD outside accepted recovery limits	**E** - Value above quantitation range
Surr - Surrogate Standard added by lab	**S** - Spike Recovery outside accepted recovery limits	**H** - Holding time exceeded
TNTC - Too numerous to count (> 200 CFU)	X - Value exceeds Maximum Contaminant Level	**MI** - Matrix interference
Q - QC criteria failed or noncompliant CCV	# - Unknown hydrocarbon	**DNI** - Did not ignite
NELAP - IL ELAP and NELAP Accredited Field of Testing	**IDPH** - IL Dept. of Public Health	

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: Dynegy Midwest Generation
WorkOrder: 09070896
Lab ID: 09070896-001
Report Date: 03-Aug-09

Client Project: Hennepin Station Bottom Ash
Client Sample ID: Hennipin Station Bottom Ash
Collection Date: 7/22/2009 11:00:00 AM
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP								
Arsenic		0.0250		**< 0.0250**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Barium		0.0050		**0.116**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Beryllium		0.0010		**< 0.0010**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Boron		0.0200		**0.193**	mg/L	1	8/3/2009 10:30:48 AM	LAL
Cadmium		0.0020		**< 0.0020**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Chromium		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Cobalt		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Copper		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Iron		0.0300		**0.0687**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Manganese		0.0050		**< 0.0050**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Nickel		0.0100		**< 0.0100**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Selenium		0.0500		**< 0.0500**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Silver		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Zinc		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
ASTM D3987, SW-846 3020A, METALS IN SHAKE EXTRACT BY GFAA								
Antimony, SHAKE by GFAA	7041	0.0050		**< 0.0050**	mg/L	1	7/29/2009 2:45:16 PM	MEK
Lead, SHAKE by GFAA	7421	0.0020	J	**0.0011**	mg/L	1	7/29/2009 10:18:30 AM	MEK
Thallium, SHAKE by GFAA	7841	0.0020		**< 0.0020**	mg/L	1	7/29/2009 2:41:30 PM	MEK
ASTM D3987, SW-846 7470A IN SHAKE EXTRACT								
Mercury, SHAKE		0.00020		**< 0.00020**	mg/L	1	7/28/2009	ALU

Sample Narrative

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

RECEIVING CHECK LIST

Client: Dynegy Midwest Generation
Project: Hennepin Station Bottom Ash
Lab Order: 09070896
Report Date: 03-Aug-09

Carrier: UPS

Received By: DB

Completed by: Marvin L. Darling II
On: 24-Jul-09
Marvin L. Darling

Reviewed by: Heather A. White
On: 24-Jul-09
Heather A. White

Pages to follow: Chain of custody [1] Extra pages included [2]

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	22.8
Type of thermal preservation?	None ☑	Ice ☐	Blue Ice ☐	Dry Ice ☐	
Chain of custody present?	Yes ☐	No ☑			
Chain of custody signed when relinquished and received?	Yes ☐	No ☑			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

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

Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	

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

Sample id and collection date/time obtained from sample container. Per John Augspols, sample ID and collection/date time on the container are correct. Analyze for the same list of parameters as in 2008. EAH 7/27/09

09070896

TEKLAB, INC
5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
TEL: (618) 344-1004
FAX: (618) 344-1005

CHAIN-OF-CUSTODY RECORD

WorkOrder: 09070896

Client:
Dynegy Midwest Generation
13498 East 800th Street
Hennepin, IL 61327

TEL: (815) 339-9218
FAX:
Project: Hennepin Station Bottom As

24-Jul-09

					Requested Tests						
Sample ID	**ClientSampID**	**Matrix**	**Date Collected**	**Bottle**	**D3987/6010B**	**D3987/7000 G**	**D3987/SW7470A**				
09070896-001	Hennipin Station Bottom	Solid	7/22/2009 11:00:00 AM		A	A	A				

Comments:

22.8°C ICE

	Date/Time		**Date/Time**
Relinquished by:		**Received by:** Our Bottle (UPS)	7/24/09 900
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Teklab: 7/22/09

Please find enclosed a bottom ash sample to be run for the same parameters as last year. I enclosed those results with the sample. I would like to pay for this with a credit card. If you have any questions please contact me :

John Augspols

Supv. Environmental and Chemistry

(815) 339-9218

Fax (815) 339 -2772

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: Dynegy Midwest Generation
WorkOrder: 08060909
Lab ID: 08060909-001
Report Date: 02-Jul-08

Client Project: Hennepin Station Bottom Ash
Client Sample ID: Hennipin Station Botton Ash
Collection Date: 6/24/2008 9:00:00 AM
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP								
Arsenic		0.0250		< 0.0250	mg/L	1	6/30/2008 12:29:55 PM	LAL
Barium		0.0050		0.0699	mg/L	1	6/30/2008 12:29:55 PM	LAL
Beryllium		0.0010		< 0.0010	mg/L	1	6/30/2008 12:29:55 PM	LAL
Boron		0.0200		0.197	mg/L	1	6/30/2008 12:29:55 PM	LAL
Cadmium		0.0020		< 0.0020	mg/L	1	6/30/2008 12:29:55 PM	LAL
Chromium		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Cobalt		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Copper		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Iron		0.0200		0.110	mg/L	1	6/30/2008 12:29:55 PM	LAL
Manganese		0.0050		< 0.0050	mg/L	1	6/30/2008 12:29:55 PM	LAL
Nickel		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Selenium		0.0500		< 0.0500	mg/L	1	6/30/2008 12:29:55 PM	LAL
Silver		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Zinc		0.0100	J	0.0025	mg/L	1	6/30/2008 12:29:55 PM	LAL
ASTM D3987, SW-846 3020A, METALS IN SHAKE EXTRACT BY GFAA								
Antimony, SHAKE by GFAA	7041	0.0050	J	0.0024	mg/L	1	6/30/2008 11:51:48 AM	JMW
Lead, SHAKE by GFAA	7421	0.0020		< 0.0020	mg/L	1	6/30/2008 9:45:10 AM	JMW
Thallium, SHAKE by GFAA	7841	0.0020	S	< 0.0020	mg/L	1	6/30/2008 11:17:06 AM	JMW
ASTM D3987, SW-846 7470A IN SHAKE EXTRACT								
Mercury, SHAKE		0.00020	J	0.00006	mg/L	1	6/30/2008	SRH

Sample Narrative
ASTM D3987, SW-846 3020A, Metals in Shake Extract by GFAA
TI - Matrix interference present in sample.

22-8 notice
DB 7/24/09

900 ~~FeVPS~~
DB 7/24/09

Prepared for
Dynegy Midwest Generation, LLC

Date
October 11, 2023

Project No.
1940103649-008

40 C.F.R. § 257.94(e)(2): ALTERNATIVE SOURCE DEMONSTRATION

LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS
CCR UNIT 801

RAMBOLL Bright ideas. Sustainable change.

CERTIFICATIONS

I, Eric J. Tlachac, a qualified professional engineer in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used other than for its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.

Eric J. Tlachac
Qualified Professional Engineer
062-063091
Illinois
Ramboll Americas Engineering Solutions, Inc.
Date: October 11, 2023

I, Brian G. Hennings, a professional geologist in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used other than for its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.

Brian G. Hennings
Professional Geologist
196-001482
Illinois
Ramboll Americas Engineering Solutions, Inc.
Date: October 11, 2023

Ramboll
234 W. Florida Street
Fifth Floor
Milwaukee, WI 53204
USA
T 414-837-3607
F 414-837-3608
https://ramboll.com

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TABLES (IN TEXT)

Table A	Construction Events Affecting AP2 and AP4
Table B	Mann-Kendall Trend Analyses of Total Boron Concentrations in Compliance Monitoring Wells

FIGURES (IN TEXT)

Figure A	Box-Whisker Plot Showing Distribution of Total Boron

FIGURES (ATTACHED)

Figure 1	Monitoring Well Location Map
Figure 2	Potentiometric Surface Map – February 28 and March 1, 2023

APPENDICES

Appendix A	Groundwater Elevation Contour Maps
Appendix B	Bottom Ash Leachate Data

ACRONYMS AND ABBREVIATIONS

40 C.F.R.	Title 40 of the Code of Federal Regulations
AP2	Ash Pond No. 2
AP4	Ash Pond No. 4
ASD	Alternative Source Demonstration
CCR	coal combustion residuals
CCR Rule	40 C.F.R. § 257 Subpart D
CEC	Civil & Environmental Consultants, Inc.
cm/s	centimeters per second
D12	Detection Monitoring Round 12
HCR	Hydrogeologic Site Characterization Report
HDPE	high-density polyethylene
Hennepin East	includes Landfill, AP2, AP4, and East Ash Pond
HPP	Hennepin Power Plant
IEPA	Illinois Environmental Protection Agency
LOE(s)	line(s) of evidence
mg/L	milligrams per liter
NAVD88	North American Vertical Datum of 1988
No.	Number
NPDES	National Pollutant Discharge Elimination System
NRT	Natural Resource Technology, Inc.
NRT/OBG	Natural Resource Technology, an OBG Company
OBG	O'Brien & Gere Engineers, Inc.
OWAP	Old West Ash Pond
oz/sy	ounce per square yard
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SSI	statistically significant increase

1. INTRODUCTION

Title 40 of the Code of Federal Regulations (40 C.F.R.) § 257.94(e)(2) allows the owner or operator of a coal combustion residuals (CCR) unit 90 days from the date of determination of statistically significant increases (SSI) over background for groundwater constituents listed in Appendix III of 40 C.F.R. § 257 to complete a written demonstration that a source other than the CCR unit being monitored caused the SSI(s) (Alternative Source Demonstration [ASD]), or that the SSI(s) resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

This ASD has been prepared on behalf of Dynegy Midwest Generation, LLC, by Ramboll Americas Engineering Solutions, Inc. (Ramboll), to provide pertinent information pursuant to 40 C.F.R. § 257.94(e)(2) for the Hennepin Power Plant (HPP) Landfill, located near Hennepin, Illinois.

The most recent Detection Monitoring sampling event (Detection Monitoring Round 12 [D12]) samples were collected on February 28 and March 1, 2023 and analytical data were received on April 14, 2023. In accordance with 40 C.F.R. § 257.93(h)(2), statistical analysis of the data to identify SSIs of 40 C.F.R. § 257 Subpart D (CCR Rule) Appendix III parameters over background concentrations was completed by July 13, 2023. The statistical determination identified the following SSIs at compliance monitoring wells:

- Boron at wells 05R, 05DR, 40S, and 48
- pH at wells 40S

Pursuant to 40 C.F.R. § 257.94(e)(2), the lines of evidence (LOEs) described in **Section 3** demonstrate that sources other than the Landfill were the cause of the SSIs listed above. This ASD was completed by October 11, 2023, within 90 days of determination of the SSIs, as required by 40 C.F.R. § 257.94(e)(2).

2. BACKGROUND

2.1 Site Location and Description

The HPP is located in the northwest quarter of Section 26, Township 33 North, Range 2 West, Putnam County, Illinois and approximately 3 miles north-northeast of the Village of Hennepin. The Landfill is located east of the HPP, situated less than 200 feet from the south bank of the Illinois River and approximately one mile east of the Big Bend, where the river shifts course from predominantly west to predominantly south.

The Landfill is one of four CCR units regulated under the CCR Rule at the HPP. Three CCR units (the Landfill, Ash Pond Number (No.) 2 [AP2], and the East Ash Pond) and one unit not regulated by the CCR Rule (Ash Pond No. 4 [AP4]) are located adjacent to each other and east of the HPP and are collectively known as Hennepin East. The fourth CCR unit (Old West Ash Pond [OWAP]), is located west of the HPP. Areas surrounding the Landfill include industrial properties to the east and south, agricultural land to the southwest, and the HPP to the west. The CCR units at Hennepin East and surrounding properties are shown on **Figure 1**.

2.2 Groundwater Monitoring

The Landfill groundwater monitoring system for compliance with the CCR Rule consists of five background monitoring wells (07, 08, 08D, 16, and 17) and four compliance monitoring wells (05R, 05DR, 40S, and 48). A map showing the groundwater monitoring system, including the CCR unit and all background and compliance monitoring wells, is presented in **Figure 1**. **Figure 1** also includes monitoring wells for other CCR units located upgradient of the Landfill (12 and 13) which are not part of the Landfill monitoring system but are used to support the LOEs discussed in **Section 3**.

Groundwater samples are collected and analyzed in accordance with the Multi-Site Sampling and Analysis Plan (Ramboll, 2023). Statistical evaluation of analytical data is performed in accordance with the Multi-Site Statistical Analysis Plan (Ramboll, 2022).

2.3 Site History

The HPP has two coal-fired generating units constructed in 1953 and 1959 with a total capacity of 210 Megawatts. Operations were ceased in November 2019. The history of CCR management at Hennepin East is summarized below.

AP2/AP4: AP2 was used to store and dispose fly ash, bottom ash, and other non-CCR waste streams, including coal pile runoff. The pond originally encompassed the area that currently includes the existing AP2, the Landfill, and the Leachate Pond (not a CCR unit). AP2 has been inactive since 1996 and currently encompasses approximately 18 acres. AP2 is unlined with a lowermost, but variable, bottom elevation (referenced to the North American Vertical Datum of 1988 [NAVD88]) of 451 feet. AP4 (located south of AP2) is an unlined, closed impoundment (capped or otherwise maintained) not subject to CCR Rule requirements.

A Modified Closure Work Plan was submitted to Illinois Environmental Protection Agency (IEPA) in 2010 proposing closure of AP2 by capping with future Landfill phases as they were constructed (Kelron Environmental and Natural Resource Technology, Inc. [NRT], 2010). The Modified Closure Work Plan was approved by IEPA in a letter dated March 3, 2010. The Landfill is Phase I

of the Modified Closure Work Plan. The formerly proposed Landfill Phases II, III, and IV will no longer be constructed upon AP2. Therefore, a Closure and Post Closure Care Plan for AP2 was submitted for IEPA approval in February 2018 (Civil & Environmental Consultants, Inc. [CEC], 2018). A Closure Plan Addendum, which incorporates AP4, was submitted in October 2018 (O'Brien & Gere Engineers, Inc. [OBG] and CEC, 2018). IEPA approved the Closure and Post Closure Care Plan for Hennepin AP2/AP4 on February 26, 2020, following correspondence in 2019 (OBG, part of Ramboll, 2019) to address IEPA comments. Closure construction began on May 21, 2020, and was completed on November 17, 2020. The final cover system on AP2/AP4 consists of a 24-inch compacted soil barrier with a hydraulic conductivity of no more than 1×10^{-7} centimeters per second (cm/s) overlain by a 6-inch thick vegetative cover layer. The cover system was extended eastward to overlap with the western end of the Landfill geomembrane liner and southward to the side slope of the East Ash Pond. The approximate dates of construction affecting AP2 and AP4 are summarized in **Table A** below (AECOM, 2016).

Table A. Construction Events Affecting AP2 and AP4

Date	Event
1958	Construction of AP2.
1978	Embankment raise of AP2.
1985	Embankment raise of AP2 to elevation 484 feet NAVD88.
1989	Embankment raise of AP2 to elevation 494 feet NAVD88.
1996	AP2 was removed from service and completely dewatered.
2009 to 2010	Eastern portion of AP2 was removed to facilitate construction of the Leachate Pond.
2010/2011	Landfill Phase I cell was constructed in 2010 over placed CCR in AP2 adjacent to the Leachate Pond. In February 2011, 7,500 cubic yards of bottom ash was placed into the Phase I cell as a post-construction freeze-protection measure to protect the leachate collection system and geomembrane liner. No other material (fly ash or bottom ash) has been placed in the Landfill since.
2014	North Embankment tree removal, grading, and vegetation re-establishment adjacent to AP2.
2020	AP2 and AP4 closed in place in accordance with IEPA-approved closure plan.

Landfill: The Landfill Phase I cell, covering approximately 4.5 acres, was constructed in 2010 over existing, dewatered CCR in AP2 as part of the Modified Closure Work Plan for AP2. The Phase I cell was constructed with a composite liner (geomembrane over compacted clay) and leachate collection system above the liner that transfers collected precipitation and leachate to the Leachate Pond. Ash fill underlying the Landfill is known to be present to a minimum elevation of 454 feet (referenced to NAVD88).

In February 2011, 7,500 cubic yards of bottom ash was placed into the Landfill as a post-construction freeze protection measure to protect the leachate collection system and geomembrane liner. No other material has been placed in the Landfill since.

East Ash Pond: The East Ash Pond was used to store and dispose bottom ash, fly ash, and other non-CCR waste, and to clarify process water prior to discharge in accordance with the plant's National Pollutant Discharge Elimination System (NPDES) permit. The pond was constructed in two phases. The first phase occurred in 1995 when the initial embankment was constructed to a total height of 32 feet with a lowermost, but variable, bottom elevation of the pond at 458 feet.

The original pond bottom was lined with a 4-foot thick layer of compacted clay with a hydraulic conductivity of 1 x 10^{-7} cm/s, underlain by a 1-foot thick sand layer (AECOM, 2016). The pond depth behind the original embankment was 15 feet with 5 feet of freeboard. The embankment was raised 12 feet in 2003 to a total impoundment depth of 30 feet with 2 feet of freeboard. The liner system of the embankment raise consisted of (from top to bottom) a 45-mil reinforced polypropylene geomembrane, a 1-foot thick clay layer, and an 8 ounce per square yard (oz/sy) polypropylene geotextile fabric. This pond was used for the treatment of bottom ash transport water, miscellaneous low volume wastewater streams, and storage of unsold fly ash until plant operations ceased in November 2019.

Polishing Pond: The Polishing Pond (located east of the East Ash Pond) is not subject to CCR Rule requirements and was constructed in 1995 with a 48-inch-thick compacted clay liner having a vertical hydraulic conductivity of 1 x 10^{-7} cm/s.

Leachate Pond: The Leachate Pond (located east of the Landfill) is not subject to CCR Rule requirements and is a 25.5-acre-foot pond constructed with a composite liner consisting of 60-mil high-density polyethylene (HDPE) overlying two feet of compacted clay with a vertical hydraulic conductivity of 1 x 10^{-7} cm/s. Construction was completed December 2010.

2.4 Site Hydrogeology and Stratigraphy

Multiple site investigations have been completed at the HPP to characterize the geology, hydrogeology, and groundwater quality as required by 40 C.F.R. § 257.91 (Groundwater Monitoring Systems). Hennepin East, including the Landfill, has been well characterized and detailed in the Hydrogeologic Site Characterization Reports (HCR) for the HPP, including the most recent HCR for the adjacent East Ash Pond (Ramboll, 2021), that was included with the Operating Permit application submitted to the IEPA.

There are three dominant geomorphic features in the immediate vicinity of the HPP: an upper river terrace at an elevation of about 500 to 550 feet NAVD88, a lower river terrace at an elevation of about 450 to 460 feet NAVD88, and the current river valley filled with alluvium to an elevation of about 445 feet NAVD88. The HPP, AP2, and the Landfill were constructed on the original narrow lower river terrace between the Illinois River and the upper terrace. The original lower river terrace is approximately 10 to 20 feet above the average river level at the HPP (elevation 443.7 feet NAVD88) based upon measurements collected between 2003 and 2018 (OBG, part of Ramboll, 2020). The AP2 berm slopes steeply toward the river and its toe is close to the riverbank. The East Ash Pond, Polishing Pond, and AP4 were constructed on the upper river terrace at an elevation of approximately 500 to 505 feet NAVD88, or 60 to 65 feet above the average river level.

The hydrogeological assessment identified that the stratigraphy within and immediately surrounding Hennepin East consists of fill, unlithified river alluvium, and Pleistocene-age glacial outwash deposits overlying Pennsylvanian-age shale bedrock. Constructed berms consist of a variety of locally available materials, primarily sand, gravel, and coal ash. Where undisturbed or partially excavated, the native surficial soil at the site is poorly drained, moderately permeable silty clay loam formed as alluvium in floodplains.

There are two hydrogeologic units present at Hennepin East: alluvium and Henry Formation sands and gravels. The river is immediately adjacent to the lower terrace, east of Hennepin East, and there is minimal alluvium between Hennepin East and the river. The highly permeable Henry

Formation sands and gravels make up the upper and lower terraces and fill the valley beneath the alluvium. The sands and gravels of the two terraces are indistinguishable, consisting of a heterogeneous mixture of silty-sandy gravel with cobble zones and boulders up to several feet in diameter. The Henry Formation is more than 100 feet thick in the river valley and at least 130 feet thick on the upper terrace.

The Henry Formation and alluvium comprise the Uppermost Aquifer at Hennepin East and extend from the water table to the bedrock. The Uppermost Aquifer extends about 7,000 feet upgradient from Hennepin East to the south, where clay-rich glacial till is encountered. Glacial tills such as this typically yield little water.

The Pennsylvanian-age bedrock consists of interbedded layers of shale with thin limestone, sandstone, and coal beds. The shale bedrock unit has low hydraulic conductivity and defines the lower boundary of the Uppermost Aquifer.

The hydraulic gradient within the Uppermost Aquifer in the vicinity of Hennepin East varies with the elevation of the Illinois River (see select groundwater elevation contour maps in **Appendix A**). The direction of groundwater flow is most often toward the river to the north and west, but comparison of groundwater and river elevation data indicate reversals in this flow direction during times of high river elevations. The relative duration of these events is short, which leads to the determination of a predominant groundwater flow direction toward the river to the north and west.

Groundwater elevations were obtained from measurements in monitoring wells on February 28 and March 1, 2023, prior to the D12 sampling event at the site. Groundwater elevations for Hennepin East during the D12 sampling event are shown in **Figure 2** and ranged from 446.86 feet NAVD88 (in well 47) to 449.42 feet NAVD88 (in well 07). During this monitoring event the Illinois River elevation was observed to be greater than the groundwater elevations observed in wells near the river which can lead to temporary reversal in groundwater flow as mentioned in the preceding paragraph. The groundwater elevation contours on the potentiometric surface map shown in **Figure 2** illustrate the presence of relatively high groundwater elevations originating from the Illinois River to the north, and the routinely upgradient areas to the south and east monitored by the background wells. Under these hydraulic conditions groundwater will flow towards the lower heads in the center of the map as illustrated by the 447-foot contour interval.

3. ALTERNATIVE SOURCE DEMONSTRATION: LINES OF EVIDENCE

As allowed by 40 C.F.R. § 257.94(e)(2), this ASD demonstrates that sources other than the Landfill (the CCR unit) caused the SSIs. LOEs supporting this ASD include the following:

1. Landfill liner design.
2. Concentrations of boron in Landfill leachate are lower than those observed in downgradient groundwater.
3. Concentrations of boron in compliance monitoring wells are not increasing over time.
4. Previous vertical infiltration of surface water through ash fill in AP2.

Data and information supporting these LOEs are discussed in more detail below.

3.1 LOE #1: Landfill Liner Design

The Landfill was constructed in 2010 with a 60-mil HDPE geomembrane overlying three feet of compacted clay with hydraulic conductivity of $1x10^{-7}$ cm/sec (CEC, 2010). Precipitation and/or leachate that collects on top of the liner is removed by a leachate collection system and transferred to the Leachate Pond for management. The Leachate Pond is also lined with a 60-mil HDPE liner overlying two feet of compacted clay.

The IEPA-approved Landfill composite liner system exceeds the design criteria for a composite liner for new CCR landfills established by 40 C.F.R. § 257.70(b). The composite liner design criteria were established to help prevent contaminants in CCR from leaking from the CCR unit and impacting groundwater. Therefore, the presence of the composite liner suggests that the Landfill is not the source of the observed SSIs.

3.2 LOE #2: Concentrations of Boron in Landfill Leachate are Lower than those Observed in Downgradient Groundwater

The only material that has been placed in the lined Landfill consists of a layer of coarse bottom ash (7,500 cubic yards or 11,625 tons) to protect the leachate collection system and geomembrane liner from freezing. There has been no additional CCR landfilling activity within the lined area since the bottom ash freeze protection layer was installed.

Analytical data (**Appendix B**) from two samples of bottom ash leachate derived in the laboratory (extraction method ASTM D3987, shake extraction with water) identified boron concentrations of 0.193 milligrams per liter (mg/L) (2009 sample) and 0.197 mg/L (2008 sample).

A box-whisker plot of total boron concentrations detected between 2015 and D12 at compliance monitoring wells near the Landfill is shown on **Figure A** on the following page. The boron concentrations of 0.193 and 0.197 mg/L detected in the laboratory-derived leachate samples are below the boron concentrations observed in compliance monitoring wells as shown in **Figure A**. Analytical data available for laboratory-derived leachate from the bottom ash placed in the Landfill indicates that the bottom ash is not capable of leaching boron in concentrations observed in the compliance monitoring wells.

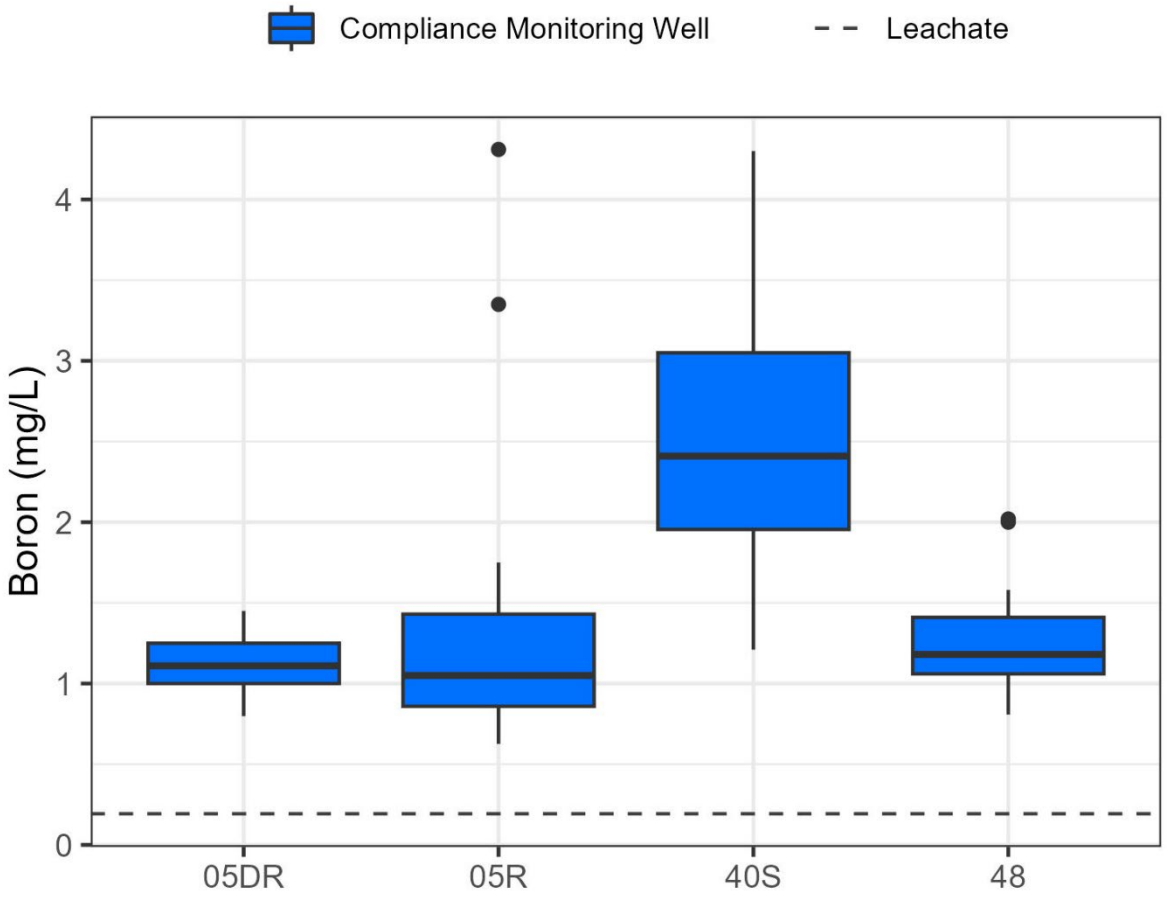


Figure A. Box-Whisker Plot Showing Distribution of Total Boron Concentrations in Compliance Monitoring Wells and Landfill Leachate

3.3 LOE #3: Concentrations of Boron in Compliance Monitoring Wells are not Increasing Over Time

Boron is a common indicator of CCR impacts to groundwater due to its leachability from CCR and mobility in groundwater (Electric Power Research Institute [EPRI], 2012). If the Landfill were a "new" source of boron to groundwater, boron concentrations in the compliance monitoring wells would be expected to increase with time as concentrations in the compliance wells approach levels of boron from within the Landfill. Concentrations in compliance wells are not increasing as show in **Table B** on the following page. Therefore, the Landfill is not the source of boron in groundwater.

Table B. Mann-Kendall Trend Analyses of Total Boron Concentrations in Compliance Monitoring Wells

Sample Location	Mann-Kendall Results - Total Boron Concentrations			
	Start Date	End Date	Sample Count	Trend (95% Confidence)
05R	12/9/2015	5/31/2023	27	Decreasing
05DR	12/9/2015	5/31/2023	27	Decreasing
40S	12/9/2015	6/1/2023	26	Decreasing
48	12/9/2015	3/1/2023	21	No Trend

3.4 LOE #4: Previous Vertical Infiltration of Surface Water through Ash Fill in AP2

The Landfill was constructed over the eastern portion of AP2 as Phase I of an IEPA-approved Modified Closure Work Plan for AP2. The portions of AP2 to the west of the Landfill were previously exposed, and subject to infiltration of precipitation and generation of CCR leachate. However, a soil cover designed to minimize surface water infiltration and CCR-impacts to groundwater was constructed over these exposed portions of AP2 in 2020 as part of a Closure and Post Closure Care Plan for AP2 approved by IEPA on February 26, 2020. AP2 is unlined, and prior to capping of the ash pond by construction of the Landfill liner and the AP2 cover system, precipitation that came into contact with CCR in AP2 may have allowed CCR constituents to percolate downward to groundwater. The previously exposed portions of AP2 may be an alternative source for CCR parameters observed in groundwater near the Landfill.

Comparison of groundwater and Illinois River elevation data indicate that natural variation in river elevation related to flood events occasionally causes groundwater flow reversal and increases in groundwater elevations in the Uppermost Aquifer beneath the Landfill. When river elevations rise above 451 to 454 feet NAVD88, low-lying ash deposits underlying the Landfill have the potential to become partially saturated for a transient period. The short-term, partial saturation may result in a temporary change to some CCR constituent concentrations at some compliance monitoring wells after the predominant groundwater flow direction is reestablished. Explicit simulation of flood events (OBG, part of Ramboll, 2020) indicates that potential increases in concentrations from flooding of the Illinois River are small and transient, such that long-term concentrations will not be significantly affected.

4. CONCLUSIONS

Based on these four LOEs, it has been demonstrated that the Landfill is not the source of the boron and pH SSIs identified in wells 05R, 05DR, 40S, and 48.

1. Landfill liner design.
2. Concentrations of boron in Landfill leachate are lower than those observed in downgradient groundwater.
3. Concentrations of boron in compliance monitoring wells are not increasing over time.
4. Previous vertical infiltration of surface water through ash fill in AP2.

Based on the LOEs presented, the following alternative sources are causing the SSIs observed in the Landfill's compliance wells:

- Boron and pH: SSIs for boron and pH may be attributed to portions of AP2 to the west of the Landfill that were previously exposed, and subject to infiltration of precipitation and generation of CCR leachate outside the Landfill boundary.

This information serves as the written ASD report prepared in accordance with 40 C.F.R. § 257.94(e)(2) that SSIs observed during the D12 monitoring event were not caused by the Landfill but were from other sources. Therefore, an assessment monitoring program is not required, and the Landfill will remain in detection monitoring.

5. REFERENCES

AECOM, 2016. Hennepin Power Station – History of Construction, 40 CFR § 257.73(c). October 2016.

Civil & Environmental Consultants, Inc. (CEC), 2010. Hennepin CCW Landfill – Phase 1 Construction Completion Report, Hennepin Power Station, Hennepin, Putnam County, Illinois. December 2010.

Civil & Environmental Consultants, Inc. (CEC), 2018. Closure and Post-Closure Care Plan for the Hennepin East Ash Pond No. 2, Hennepin Power Station. February 2018.

Code of Federal Regulations, Title 40, Chapter I, Subchapter I, Part 257, Subpart D, Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, effective April 17, 2015. Accessed from URL https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-257/subpart-D#page-top

Electric Power Research Institute (EPRI), 2012. Groundwater Quality Signatures for Assessing Potential Impacts from Coal Combustion Product Leachate. EPRI, Palo Alto, CA. 1017923.

Kelron Environmental and Natural Resource Technology, Inc. (NRT), 2010. Initial Facility Report – Hennepin Power Station, New Coal Combustion Waste Landfill. December 10, 2010.

O'Brien & Gere Engineers, Inc. (OBG) and Civil & Environmental Consultants, Inc. (CEC), 2018. Closure Plan Addendum, Hennepin East Ash Pond No. 2, Hennepin, Illinois. October 25, 2018.

O'Brien & Gere Engineers, Inc., part of Ramboll (OBG, part of Ramboll), 2019. Response to IEPA Comments - Closure and Post-Closure Care Plan for the Hennepin East Ash Pond No. 2 and Closure Plan Addendum Hennepin East Ash Pond No 2 which includes closure of Ash Pond No. 4. July 22, 2019.

O'Brien & Gere Engineers, Inc., part of Ramboll (OBG, part of Ramboll), 2020. River Flood Evaluation Report, Hennepin East Ash Pond No. 2 and No. 4, Closure Plan Addendum 3. January 15, 2020.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021. Hydrogeologic Site Characterization Report. Hennepin East Ash Pond. Hennepin Power Plant. Hennepin, Illinois. October 25, 2021.

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

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2023. *Multi-Site Sampling and Analysis Plan, Revision 1*. October 10, 2023.

FIGURES

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

0 175 350
Feet

MONITORING WELL LOCATION MAP

ALTERNATE SOURCE DEMONSTRATION
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\22\22851\MXD\Alt_Source_Dem\HenEastLandfill_D9\Figure 1_Monitoring Well Location Map.mxd

PROJECT: 169000XXXX | DATED: 4/11/2022 | DESIGNER: galammc

COMPLIANCE MONITORING WELL

BACKGROUND MONITORING WELL

MONITORING WELL

GROUNDWATER ELEVATION CONTOUR (1 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)
*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT

0 175 350
Feet

POTENTIOMETRIC SURFACE MAP FEBRUARY 28 AND MARCH 1, 2023

ALTERNATIVE SOURCE DEMONSTRATION LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

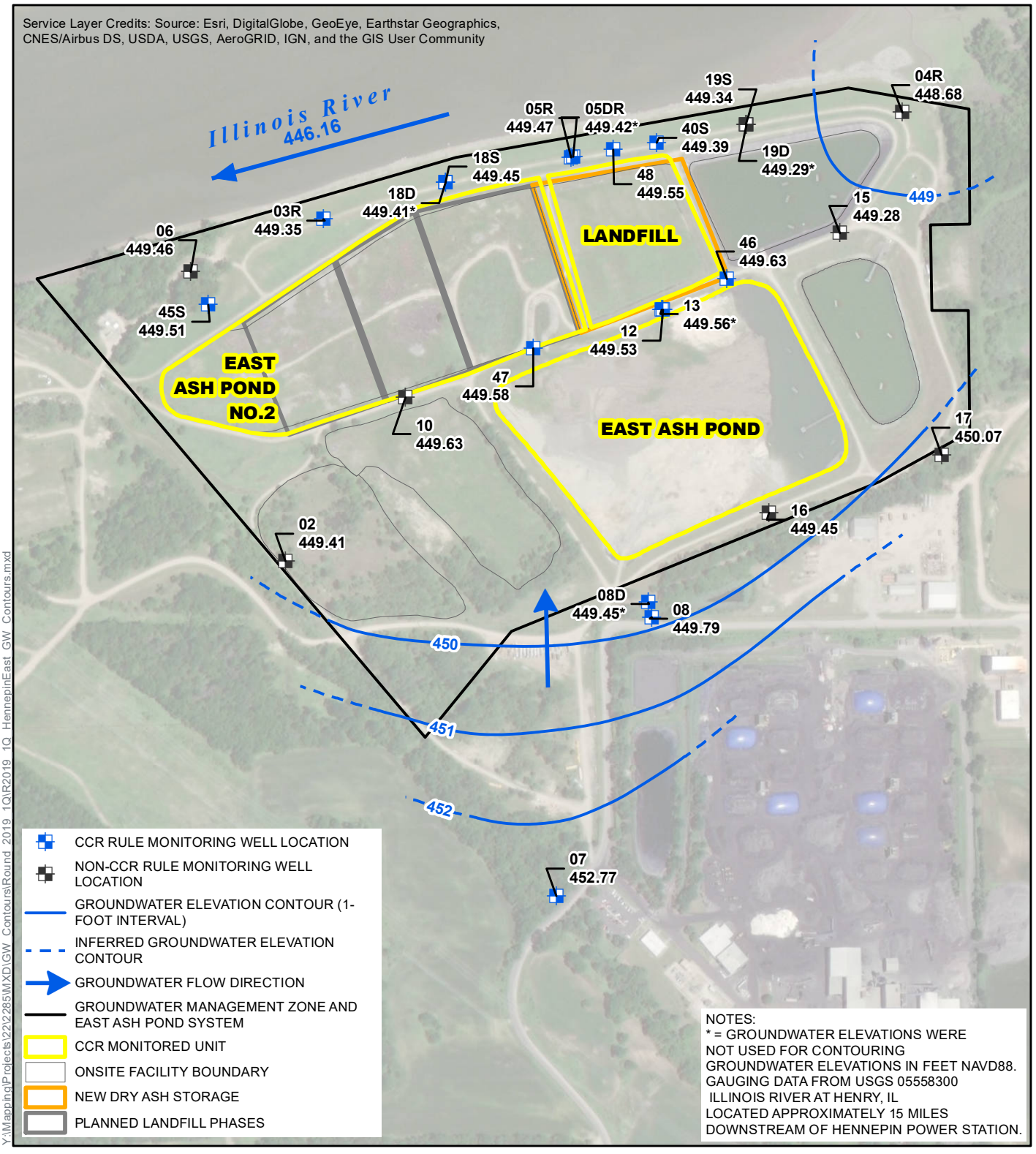
RAMBOLL

Y:\Mapping\Projects\22\22285\MXD\Alt_Source_Dem\HenEastLandfill_D12\Figure 2_HEN 801 LF Pot Surface 20230228.mxd

PROJECT: 169000XXXX | DATED: 9/6/2023 | DESIGNER: GALARNMC

APPENDICES

APPENDIX A
GROUNDWATER ELEVATION CONTOUR MAPS



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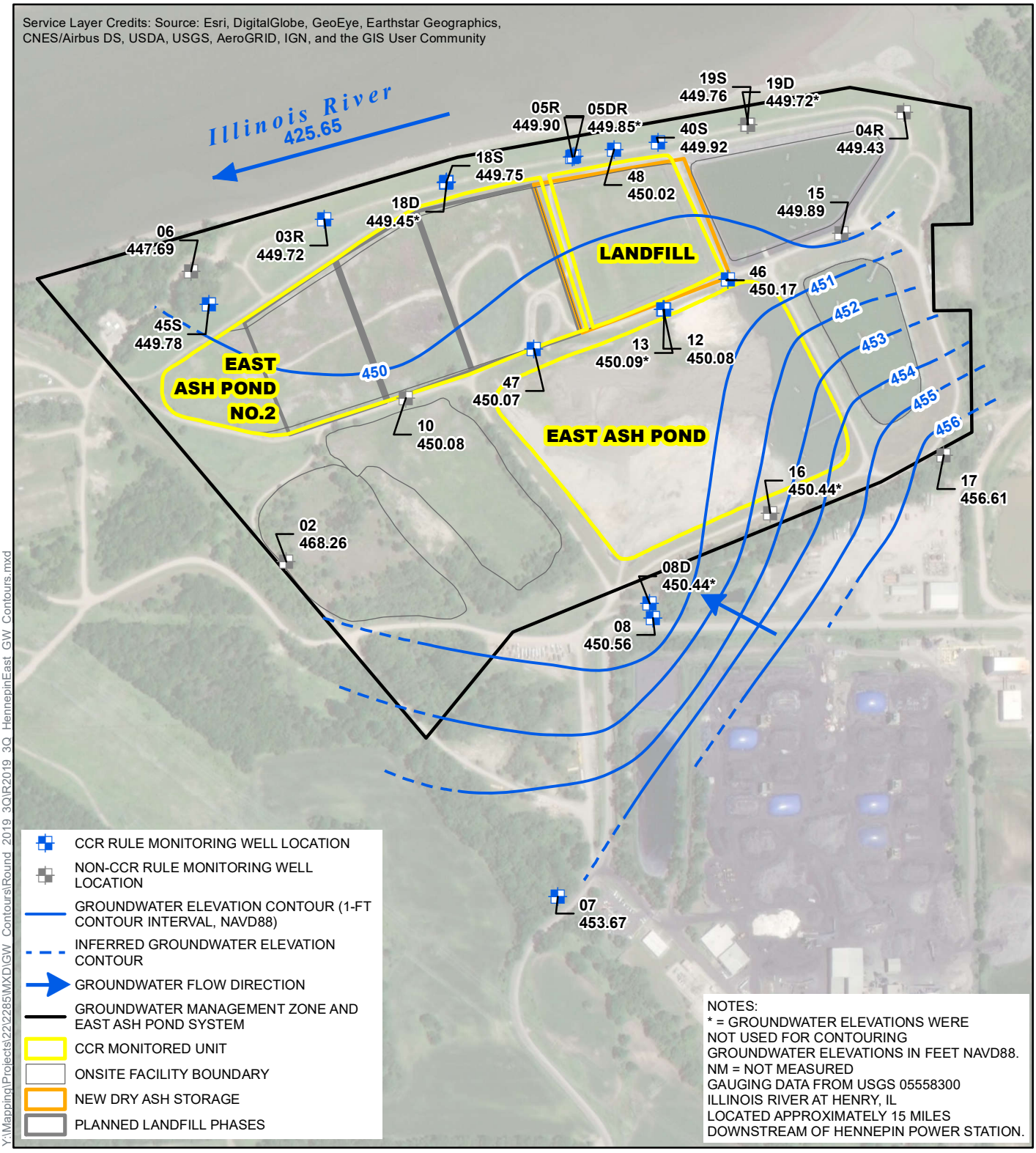
HENNEPIN LANDFILL (UNIT ID: 801), HENNEPIN ASH POND NO. 2 (UNIT ID: 802), AND HENNEPIN EAST ASH POND (UNIT ID: 803) GROUNDWATER ELEVATION CONTOUR MAP MARCH 13, 2019

CCR RULE GROUNDWATER MONITORING
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

0 125 250 500
Feet

N

O'BRIEN & GERE ENGINEERS, INC.



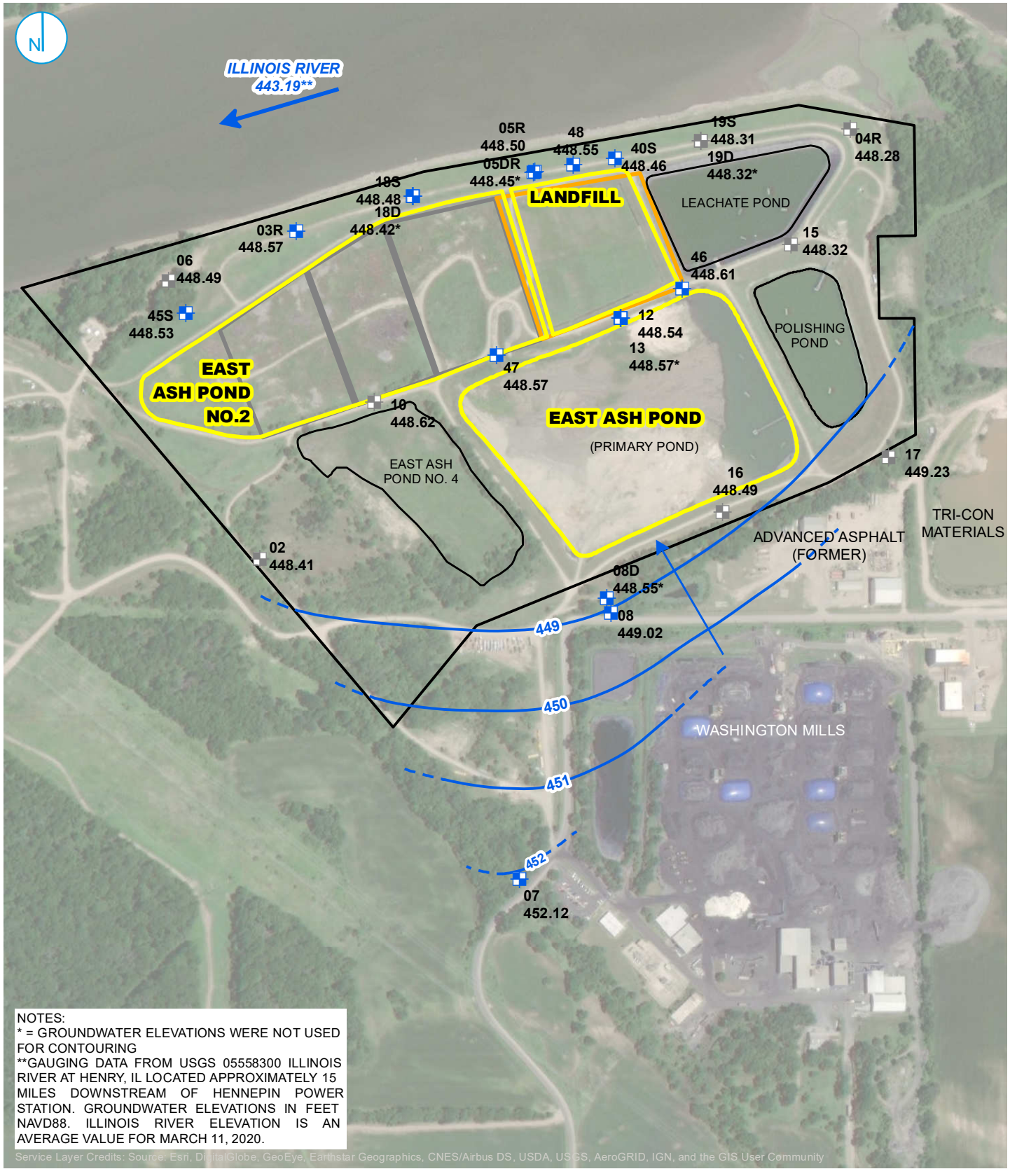
HENNEPIN LANDFILL (UNIT ID: 801), HENNEPIN ASH POND NO. 2 (UNIT ID: 802), AND HENNEPIN EAST ASH POND (UNIT ID: 803)
GROUNDWATER ELEVATION CONTOUR MAP
SEPTEMBER 17, 2019

CCR RULE GROUNDWATER MONITORING
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

N

0 125 250 500
Feet

O'BRIEN & GERE ENGINEERS, INC.



Y:\Mapping\Projects\22\2285\MXD\GW_Contours\Round_2020_1Q\R2020_1Q_HennepinEast_GW_Contours.mxd

PROJECT: 169000XXXX | DATED: 7/30/2020 | DESIGNER: galarnmc

CCR MONITORING WELL

NON-CCR MONITORING WELL

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)

INFERRED GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

GROUNDWATER MANAGEMENT ZONE AND EAST ASH POND SYSTEM

CCR MONITORED UNIT

0 250 500 Feet

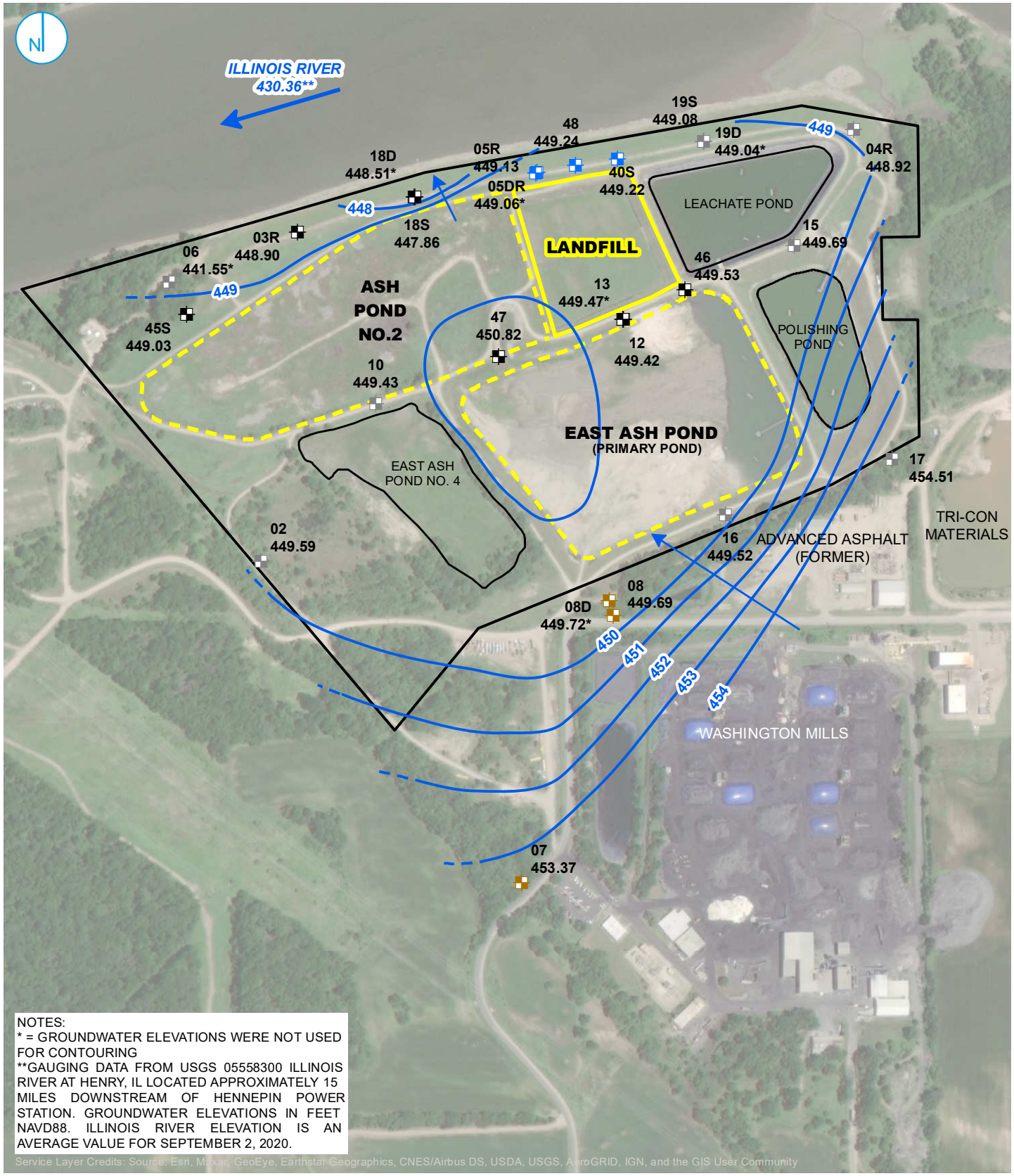
GROUNDWATER ELEVATION CONTOUR MAP MARCH 11, 2020

HENNEPIN LANDFILL (UNIT ID: 801), HENNEPIN ASH POND NO. 2 (UNIT ID: 802), AND HENNEPIN EAST ASH POND (UNIT ID: 803)

VISTRA ENERGY
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

RAMBOLL



Y:\Mapping\Projects\22\2285_Hennepin East\MXD\ASD\Figure 2_Groundwater Contour Map_HenLF.mxd

PROJECT: 169000XXXX | DATED: 2/15/2021 | DESIGNER: galarmmc

BACKGROUND MONITORING WELL
DOWNGRADIENT MONITORING WELL
CCR RULE MONITORING WELL
NON-CCR RULE MONITORING WELL
GROUNDWATER MANAGEMENT ZONE AND EAST ASH POND

0 250 500 Feet

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
CCR MONITORED UNIT, SUBJECT SITE
CCR MONITORED UNIT
NON-CCR UNIT

GROUNDWATER ELEVATION CONTOUR MAP SEPTEMBER 2, 2020

ALTERNATE SOURCE DEMONSTRATION
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

BACKGROUND WELL

MONITORING WELL

SOURCE SAMPLE LOCATION

STAFF GAGE

GROUNDWATER ELEVATION CONTOUR (0.5 FT CONTOUR INTERVAL, NAVD88)

INFERRED GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW ARROW

PART 257 REGULATED UNIT (SUBJECT UNIT)

SITE FEATURE

LIMITS OF FINAL COVER

PROPERTY BOUNDARY

NOTE:
*GROUNDWATER ELEVATIONS SHOWN IN FEET, NAVD88. ELEVATIONS IN PARENTHESIS WERE NOT USED FOR CONTOURING.
**GAUGING DATA FROM USGS 05558300 ILLINOIS RIVER AT HENRY, IL LOCATED APPROXIMATELY 15 MILES DOWNSTREAM OF HENNEPIN POWER STATION. SURFACE WATER ELEVATIONS IN FEET NAVD88. ILLINOIS RIVER ELEVATION IS AN AVERAGE VALUE FOR MARCH 18, 2021.

0 175 350
Feet

GROUNDWATER ELEVATION CONTOUR MAP MARCH 17, 2021

ALTERNATE SOURCE DEMONSTRATION
COAL COMBUSTION WASTE LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

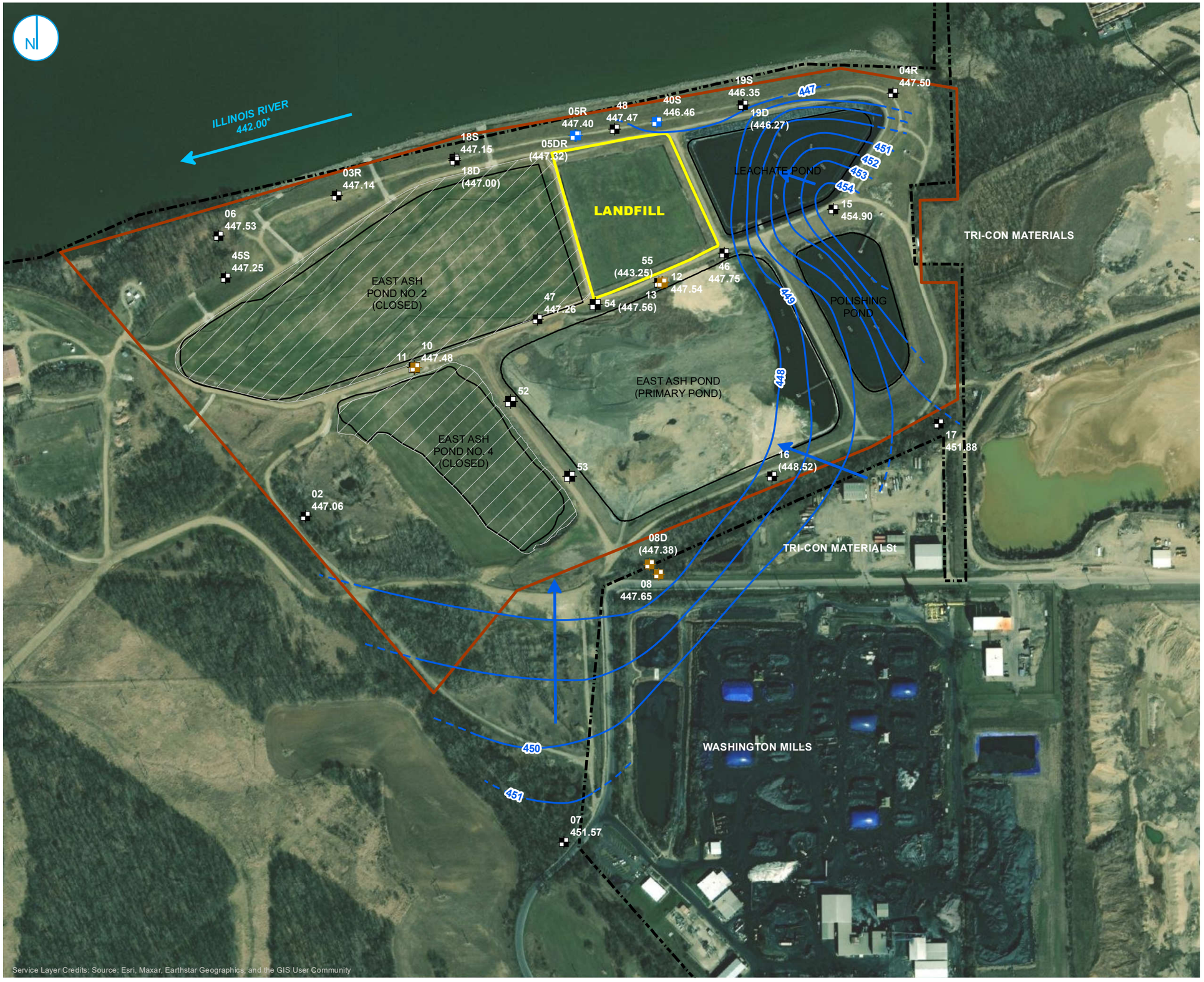
FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\2202285MXD\Alt_Source_Dem\HenEast\Figure 2_GWE Contours 20210317.mxd

PROJECT: 169000XXXX | DATED: 10/6/2021 | DESIGNER: STOLZSD



- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER MANAGEMENT ZONE
- PART 257 REGULATED UNIT (SUBJECT UNIT)
- LIMITS OF FINAL COVER
- SITE FEATURE
- 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)
*ILLINOIS RIVER ELEVATION OBTAINED FROM STAFF GAGE SG02, LOCATED AT THE HENNEPIN POWER PLANT

0 175 350
Feet

GROUNDWATER ELEVATION CONTOUR MAP SEPTEMBER 13 AND 14, 2022

ALTERNATE SOURCE DEMONSTRATION
COAL COMBUSTION WASTE LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\22\288Hennepin East\MXD\2022AR_ElLandfill\Figure 3-3_GWE Contours 20220913.mxd

PROJECT: 169000XXXX | DATED: 2/23/2023 | DESIGNER: galamme

APPENDIX B
BOTTOM ASH LEACHATE DATA

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

August 03, 2009

John Augspols
Dynegy Midwest Generation
13498 East 800th Street
Hennepin, IL 61327
TEL: (815) 339-9218
FAX:

ACCREDITED IN ACCORDANCE WITH nelac

NELAP Accredited #100226

RE: Hennepin Station Bottom Ash **WorkOrder:** 09070896

Dear John Augspols:

TEKLAB, INC received 1 sample on 7/24/2009 9:00:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. IL ELAP and NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column.

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

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

Sincerely,

Heather A. White

Heather A. White
Project Manager
(618)344-1004 ex 20

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

Client: Dynegy Midwest Generation
Project: Hennepin Station Bottom Ash
LabOrder: 09070896
Report Date: 03-Aug-09

CASE NARRATIVE

Cooler Receipt Temp: 22.8 °C

State accreditations:

KS: NELAP #E-10347 | KY: UST #0073 | MO: DNR #00930 | AR: ADEQ #70-028-0

Qualifiers

DF - Dilution Factor	**B** - Analyte detected in the associated Method Blank	**C** - Client requested RL below PQL
RL - Reporting Limit	**J** - Analyte detected below reporting limits	**D** - Diluted out of sample
ND - Not Detected at the Reporting Limit	**R** - RPD outside accepted recovery limits	**E** - Value above quantitation range
Surr - Surrogate Standard added by lab	**S** - Spike Recovery outside accepted recovery limits	**H** - Holding time exceeded
TNTC - Too numerous to count (> 200 CFU)	X - Value exceeds Maximum Contaminant Level	**MI** - Matrix interference
Q - QC criteria failed or noncompliant CCV	# - Unknown hydrocarbon	**DNI** - Did not ignite
NELAP - IL ELAP and NELAP Accredited Field of Testing	**IDPH** - IL Dept. of Public Health	

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: Dynegy Midwest Generation
WorkOrder: 09070896
Lab ID: 09070896-001
Report Date: 03-Aug-09

Client Project: Hennepin Station Bottom Ash
Client Sample ID: Hennipin Station Bottom Ash
Collection Date: 7/22/2009 11:00:00 AM
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP								
Arsenic		0.0250		**< 0.0250**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Barium		0.0050		**0.116**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Beryllium		0.0010		**< 0.0010**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Boron		0.0200		**0.193**	mg/L	1	8/3/2009 10:30:48 AM	LAL
Cadmium		0.0020		**< 0.0020**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Chromium		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Cobalt		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Copper		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Iron		0.0300		**0.0687**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Manganese		0.0050		**< 0.0050**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Nickel		0.0100		**< 0.0100**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Selenium		0.0500		**< 0.0500**	mg/L	1	7/29/2009 3:49:50 PM	LAL
Silver		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
Zinc		0.0100		**< 0.0100**	mg/L	1	7/29/2009 11:19:44 AM	LAL
ASTM D3987, SW-846 3020A, METALS IN SHAKE EXTRACT BY GFAA								
Antimony, SHAKE by GFAA	7041	0.0050		**< 0.0050**	mg/L	1	7/29/2009 2:45:16 PM	MEK
Lead, SHAKE by GFAA	7421	0.0020	J	**0.0011**	mg/L	1	7/29/2009 10:18:30 AM	MEK
Thallium, SHAKE by GFAA	7841	0.0020		**< 0.0020**	mg/L	1	7/29/2009 2:41:30 PM	MEK
ASTM D3987, SW-846 7470A IN SHAKE EXTRACT								
Mercury, SHAKE		0.00020		**< 0.00020**	mg/L	1	7/28/2009	ALU

Sample Narrative

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

RECEIVING CHECK LIST

Client: Dynegy Midwest Generation
Project: Hennepin Station Bottom Ash
Lab Order: 09070896
Report Date: 03-Aug-09

Carrier: UPS

Received By: DB

Completed by: Marvin L. Darling II
On: 24-Jul-09
Marvin L. Darling

Reviewed by: Heather A. White
On: 24-Jul-09
Heather A. White

Pages to follow: Chain of custody [1] Extra pages included [2]

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	22.8
Type of thermal preservation?	None ☑	Ice ☐	Blue Ice ☐	Dry Ice ☐	
Chain of custody present?	Yes ☐	No ☑			
Chain of custody signed when relinquished and received?	Yes ☐	No ☑			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

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

Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	

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

Sample id and collection date/time obtained from sample container. Per John Augspols, sample ID and collection/date time on the container are correct. Analyze for the same list of parameters as in 2008. EAH 7/27/09

09070896

TEKLAB, INC
5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
TEL: (618) 344-1004
FAX: (618) 344-1005

CHAIN-OF-CUSTODY RECORD

WorkOrder: 09070896

Client:
Dynegy Midwest Generation
13498 East 800th Street
Hennepin, IL 61327

TEL: (815) 339-9218
FAX:
Project: Hennepin Station Bottom As

24-Jul-09

					Requested Tests						
Sample ID	**ClientSampID**	**Matrix**	**Date Collected**	**Bottle**	**D3987/6010B**	**D3987/7000 G**	**D3987/SW7470A**				
09070896-001	Hennipin Station Bottom	Solid	7/22/2009 11:00:00 AM		A	A	A				

Comments:

22.8°C ICE

	Date/Time		**Date/Time**
Relinquished by:		**Received by:** Our Bottle (UPS)	7/24/09 900
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Teklab: 7/22/09

Please find enclosed a bottom ash sample to be run for the same parameters as last year. I enclosed those results with the sample. I would like to pay for this with a credit card. If you have any questions please contact me :

John Augspols

Supv. Environmental and Chemistry

(815) 339-9218

Fax (815) 339 -2772

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD
COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004
FAX: 618-344-1005

LABORATORY RESULTS

Client: Dynegy Midwest Generation
WorkOrder: 08060909
Lab ID: 08060909-001
Report Date: 02-Jul-08

Client Project: Hennepin Station Bottom Ash
Client Sample ID: Hennipin Station Botton Ash
Collection Date: 6/24/2008 9:00:00 AM
Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP								
Arsenic		0.0250		< 0.0250	mg/L	1	6/30/2008 12:29:55 PM	LAL
Barium		0.0050		0.0699	mg/L	1	6/30/2008 12:29:55 PM	LAL
Beryllium		0.0010		< 0.0010	mg/L	1	6/30/2008 12:29:55 PM	LAL
Boron		0.0200		0.197	mg/L	1	6/30/2008 12:29:55 PM	LAL
Cadmium		0.0020		< 0.0020	mg/L	1	6/30/2008 12:29:55 PM	LAL
Chromium		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Cobalt		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Copper		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Iron		0.0200		0.110	mg/L	1	6/30/2008 12:29:55 PM	LAL
Manganese		0.0050		< 0.0050	mg/L	1	6/30/2008 12:29:55 PM	LAL
Nickel		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Selenium		0.0500		< 0.0500	mg/L	1	6/30/2008 12:29:55 PM	LAL
Silver		0.0100		< 0.0100	mg/L	1	6/30/2008 12:29:55 PM	LAL
Zinc		0.0100	J	0.0025	mg/L	1	6/30/2008 12:29:55 PM	LAL
ASTM D3987, SW-846 3020A, METALS IN SHAKE EXTRACT BY GFAA								
Antimony, SHAKE by GFAA	7041	0.0050	J	0.0024	mg/L	1	6/30/2008 11:51:48 AM	JMW
Lead, SHAKE by GFAA	7421	0.0020		< 0.0020	mg/L	1	6/30/2008 9:45:10 AM	JMW
Thallium, SHAKE by GFAA	7841	0.0020	S	< 0.0020	mg/L	1	6/30/2008 11:17:06 AM	JMW
ASTM D3987, SW-846 7470A IN SHAKE EXTRACT								
Mercury, SHAKE		0.00020	J	0.00006	mg/L	1	6/30/2008	SRH

Sample Narrative
ASTM D3987, SW-846 3020A, Metals in Shake Extract by GFAA
TI - Matrix interference present in sample.

22-8 notice
DB 7/24/09

900 ~~FeVPS~~
DB 7/24/09