

Prepared for
Dynegy Midwest Generation, LLC

Date
January 31, 2023

Project No.
1940102203-008

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

LANDFILL

HENNEPIN POWER PLANT

HENNEPIN, ILLINOIS

CCR UNIT 801

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT HENNEPIN POWER PLANT LANDFILL

Project name **Hennepin Power Plant Landfill**
Project no. **1940102203-008**
Recipient **Dynegy Midwest Generation, LLC**
Document type **Annual Groundwater Monitoring and Corrective Action Report**
Version **FINAL**
Date **January 31, 2023**
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Description **Annual Report in Support of the CCR Rule Groundwater Monitoring Program**

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ACRONYMS AND ABBREVIATIONS

§	Section
40 C.F.R.	Title 40 of the Code of Federal Regulations
ASD	Alternate Source Demonstration
CCR	coal combustion residuals
LF	Landfill
GWPS	groundwater protection standard
HPP	Hennepin Power Plant
NA	not applicable
NRT/OBG	Natural Resource Technology, an OBG Company
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.) Section (§) 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.

No changes were made to the monitoring system in 2022 (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 determined:

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

Alternate Source Demonstrations (ASDs) were completed for the SSIs referenced 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, summarizes key actions completed, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year. At a minimum, the annual report must contain the following information, to the extent available:

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

- iv. If it was determined that there was a statistically significant level above the groundwater protection standard [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 2022.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

No changes have occurred to the monitoring program status in calendar year 2022 and the LF remains in the Detection Monitoring Program in accordance with 40 C.F.R. § 257.94.

3. KEY ACTIONS COMPLETED IN 2022

The Detection Monitoring Program is summarized in **Table A** on the following page. The groundwater monitoring system, including the CCR unit and all background and compliance monitoring wells, is presented in **Figure 1**. No changes were made to the monitoring system in 2022. In general, 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 Sampling and Analysis Plan (SAP) (Natural Resource Technology, an OBG Company [NRT/OBG], 2017a). Potentiometric surface maps for the third quarter of 2021 and both monitoring events in 2022 are included in **Figures 2 through 4**. All monitoring data and analytical results obtained under 40 C.F.R. § 257.90 through 257.98 (as applicable) in the third quarter of 2021 and both monitoring events in 2022 are presented in **Tables 1 and 2**. Laboratory reports for the third quarter of 2021 and both 2022 monitoring events are included in **Appendix A**.

Analytical data were evaluated in accordance with the Statistical Analysis Plan (NRT/OBG, 2017b) to determine any SSIs of Appendix III parameters relative to background concentrations. 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**.

Potential alternate sources were evaluated as outlined in the 40 C.F.R. § 257.94(e)(2). ASDs were completed and certified by a qualified professional engineer. The dates the ASDs were completed are provided in **Table A**. The ASDs are included in **Appendix C**.

¹ Sampling was limited to 40S during the June 2022 sampling event to confirm SSIs of select Appendix III parameters initially detected at values greater than statistical background values in the preceding sampling event, as allowed by the Statistical Analysis Plan.

Table A. 2021-2022 Detection Monitoring Program Summary

Sampling Date	Analytical Data Receipt Date	Parameters Collected	SSI(s)	SSI(s) Determination Date	ASD Completion Date
September 9 - 10, 2021	October 15, 2021	Appendix III	Boron at wells 05DR, 05R, 40S, and 48; Fluoride at wells 05DR, 40S, and 48; pH at well 40S	January 13, 2022	April 13, 2022
March 22 - 23, 2022	June 01, 2022	Appendix III	Boron at wells 05DR, 05R, 40S, and 48; Fluoride at wells 05DR, 05R, 40S, and 48; pH at well 40S	August 03, 2022	November 01, 2022
June 8, 2022 ¹	July 13, 2022	pH at well 40S ²	NA	NA	NA
September 14, 2022	October 31, 2022	Appendix III	Boron at wells 05DR, 05R, 40S, and 48; Fluoride at wells 05DR, 05R, 40S, and 48; pH at wells 05R and 40S	January 29, 2023	TBD

Notes:

ASD: Alternate Source Demonstration

NA: not applicable

SSI: statistically significant increase

TBD: to be determined

¹ Groundwater sample analysis was limited to select Appendix III parameters initially detected at values greater than statistical background values in the preceding sampling event to confirm SSIs, as allowed by the Statistical Analysis Plan.

² Sampling was limited to 40S during the June 2022 sampling event to confirm SSIs of select Appendix III parameters initially detected at values greater than statistical background values in the preceding sampling event, as allowed by the Statistical Analysis Plan.

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

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

5. KEY ACTIVITIES PLANNED FOR 2023

The following key activities are planned for 2023:

- Continuation of the Detection Monitoring Program with semi-annual sampling scheduled for the first and third quarters of 2023.
- Complete evaluation of analytical data from the compliance wells using background data to determine whether an SSI of Appendix III parameters detected at concentrations greater than background concentrations has occurred.
- If an SSI is identified, potential alternate 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 alternate 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 2023 Annual Groundwater Monitoring and Corrective Action Report.
 - If an alternate 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 2023 (*e.g.*, assessment monitoring) will be met, including associated recordkeeping/notifications required by 40 C.F.R. §§ 257.105 through 257.108.
- The following documents were developed in 2022 and will be implemented beginning in the first quarter of 2023:
 - Multi-Site Quality Assurance Project Plan (Ramboll, 2022a)
 - Multi-Site Data Management Plan (Ramboll, 2022b)
 - Multi-Site Statistical Analysis Plan and Certification (Ramboll, 2022c)

6. REFERENCES

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

Natural Resource Technology, an OBG Company (NRT/OBG), 2017b. Statistical Analysis Plan, Baldwin Energy Complex, Havana Power Station, Hennepin Power Station, Wood River Power Station, Dynegy Midwest Generation, LLC, October 17, 2017.

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

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

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

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
801 - LANDFILL
HENNEPIN, IL

Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
02	UA	45 - 55	Water Level Only	41.30132	-89.30915	09/08/2021	45.30	446.71
02	UA	45 - 55	Water Level Only	41.30132	-89.30915	03/21/2022	44.26	447.75
02	UA	45 - 55	Water Level Only	41.30132	-89.30915	09/13/2022	44.95	447.06
03R	UA	42 - 52	Water Level Only	41.30458	-89.30869	09/08/2021	34.35	447.57
03R	UA	42 - 52	Water Level Only	41.30458	-89.30869	03/21/2022	34.21	447.71
03R	UA	42 - 52	Water Level Only	41.30458	-89.30869	09/14/2022	34.78	447.14
04R	UA	41 - 51	Water Level Only	41.30556	-89.30118	09/08/2021	38.82	447.78
04R	UA	41 - 51	Water Level Only	41.30556	-89.30118	03/21/2022	38.88	447.72
04R	UA	41 - 51	Water Level Only	41.30556	-89.30118	09/14/2022	39.10	447.50
05R	UA	44 - 54	Compliance	41.30516	-89.30545	09/08/2021	40.59	447.84
05R	UA	44 - 54	Compliance	41.30516	-89.30545	03/21/2022	40.59	447.84
05R	UA	44 - 54	Compliance	41.30516	-89.30545	09/14/2022	41.03	447.40
05DR	UA	70 - 75	Compliance	41.30516	-89.30547	09/08/2021	40.67	447.70
05DR	UA	70 - 75	Compliance	41.30516	-89.30547	03/21/2022	40.62	447.75
05DR	UA	70 - 75	Compliance	41.30516	-89.30547	09/14/2022	41.05	447.32
06	UA	28.7 - 38.7	Water Level Only	41.30418	-89.31028	09/08/2021	22.19	447.56
06	UA	28.7 - 38.7	Water Level Only	41.30418	-89.31028	03/21/2022	21.95	447.80
06	UA	28.7 - 38.7	Water Level Only	41.30418	-89.31028	09/14/2022	22.22	447.53
07	UA	67.5 - 77.5	Background	41.29799	-89.30571	09/08/2021	67.02	451.25
07	UA	67.5 - 77.5	Background	41.29799	-89.30571	03/21/2022	67.62	450.65
07	UA	67.5 - 77.5	Background	41.29799	-89.30571	09/14/2022	66.70	451.57
08	UA	51.5 - 61.5	Background	41.30070	-89.30440	09/08/2021	53.08	448.30
08	UA	51.5 - 61.5	Background	41.30070	-89.30440	03/21/2022	53.48	447.90
08	UA	51.5 - 61.5	Background	41.30070	-89.30440	09/14/2022	53.73	447.65
08D	UA	83 - 88	Background	41.30080	-89.30452	09/08/2021	53.80	447.54
08D	UA	83 - 88	Background	41.30080	-89.30452	03/21/2022	53.49	447.85
08D	UA	83 - 88	Background	41.30080	-89.30452	09/14/2022	53.96	447.38
10	UA	48.8 - 58.8	Water Level Only	41.30282	-89.30766	09/08/2021	49.92	448.11
10	UA	48.8 - 58.8	Water Level Only	41.30282	-89.30766	03/21/2022	50.03	448.00
10	UA	48.8 - 58.8	Water Level Only	41.30282	-89.30766	09/14/2022	50.55	447.48
12	UA	49.45 - 59.5	Water Level Only	41.30366	-89.30430	09/08/2021	50.34	448.10
12	UA	49.45 - 59.5	Water Level Only	41.30366	-89.30430	03/21/2022	50.52	447.92
12	UA	49.45 - 59.5	Water Level Only	41.30366	-89.30430	09/14/2022	50.90	447.54
13	UA	67 - 69	Water Level Only	41.30366	-89.30432	09/08/2021	50.34	448.13
13	UA	67 - 69	Water Level Only	41.30366	-89.30432	03/21/2022	50.53	447.94

TABLE 1
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2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
801 - LANDFILL
HENNEPIN, IL

Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
13	UA	67 - 69	Water Level Only	41.30366	-89.30432	09/14/2022	50.91	447.56
15	UA	50.65 - 60.7	Water Level Only	41.30439	-89.30200	09/08/2021	48.80	448.00
15	UA	50.65 - 60.7	Water Level Only	41.30439	-89.30200	03/21/2022	49.03	447.77
15	UA	50.65 - 60.7	Water Level Only	41.30439	-89.30200	09/14/2022	41.90	454.90
16	UA	56 - 66	Water Level Only	41.30168	-89.30286	09/08/2021	53.55	448.19
16	UA	56 - 66	Water Level Only	41.30168	-89.30286	03/21/2022	53.92	447.82
16	UA	56 - 66	Water Level Only	41.30168	-89.30286	09/14/2022	53.22	448.52
17	UA	58.06 - 68.1	Water Level Only	41.30220	-89.30060	09/08/2021	54.33	452.80
17	UA	58.06 - 68.1	Water Level Only	41.30220	-89.30060	03/21/2022	57.70	449.43
17	UA	58.06 - 68.1	Water Level Only	41.30220	-89.30060	09/14/2022	55.25	451.88
18S	UA	40 - 50	Water Level Only	41.30494	-89.30710	09/08/2021	40.12	447.58
18S	UA	40 - 50	Water Level Only	41.30494	-89.30710	03/21/2022	39.93	447.77
18S	UA	40 - 50	Water Level Only	41.30494	-89.30710	09/14/2022	40.55	447.15
18D	UA	71 - 76	Water Level Only	41.30492	-89.30709	09/08/2021	40.28	447.32
18D	UA	71 - 76	Water Level Only	41.30492	-89.30709	03/21/2022	39.91	447.69
18D	UA	71 - 76	Water Level Only	41.30492	-89.30709	09/14/2022	40.60	447.00
19S	UA	40 - 50	Water Level Only	41.30546	-89.30320	09/08/2021	39.51	447.75
19S	UA	40 - 50	Water Level Only	41.30546	-89.30320	03/21/2022	39.52	447.74
19S	UA	40 - 50	Water Level Only	41.30546	-89.30320	09/14/2022	40.91	446.35
19D	UA	67 - 72	Water Level Only	41.30546	-89.30320	09/08/2021	39.42	447.77
19D	UA	67 - 72	Water Level Only	41.30546	-89.30320	03/21/2022	39.44	447.75
19D	UA	67 - 72	Water Level Only	41.30546	-89.30320	09/14/2022	40.92	446.27
40S	UA	40 - 50	Compliance	41.30529	-89.30436	09/08/2021	39.80	447.87
40S	UA	40 - 50	Compliance	41.30529	-89.30436	03/21/2022	39.87	447.80
40S	UA	40 - 50	Compliance	41.30529	-89.30436	09/14/2022	41.21	446.46
45S	UA	35 - 45	Water Level Only	41.30375	-89.31019	09/08/2021	19.80	447.68
45S	UA	35 - 45	Water Level Only	41.30375	-89.31019	03/21/2022	19.61	447.87
45S	UA	35 - 45	Water Level Only	41.30375	-89.31019	09/14/2022	20.23	447.25
46	UA	50 - 60	Water Level Only	41.30395	-89.30347	09/08/2021	50.53	448.22
46	UA	50 - 60	Water Level Only	41.30395	-89.30347	03/21/2022	50.75	448.00
46	UA	50 - 60	Water Level Only	41.30395	-89.30347	09/14/2022	51.00	447.75

TABLE 1
GROUNDWATER ELEVATIONS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
801 - LANDFILL
HENNEPIN, IL

Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
47	UA	50 - 60	Water Level Only	41.30330	-89.30599	09/08/2021	54.83	447.82
47	UA	50 - 60	Water Level Only	41.30330	-89.30599	03/21/2022	54.98	447.67
47	UA	50 - 60	Water Level Only	41.30330	-89.30599	09/14/2022	55.39	447.26
48	UA	44 - 54	Compliance	41.30523	-89.30493	09/08/2021	39.55	447.91
48	UA	44 - 54	Compliance	41.30523	-89.30493	03/21/2022	39.58	447.88
48	UA	44 - 54	Compliance	41.30523	-89.30493	09/14/2022	39.99	447.47
55	BR	90 - 95	Water Level Only	41.30366	-89.30435	03/21/2022	50.30	448.16
55	BR	90 - 95	Water Level Only	41.30366	-89.30435	09/13/2022	55.21	443.25

Notes:
BGS = below ground surface
BMP = below measuring point
NAVD88 = North American Vertical Datum of 1988
Monitored Unit Abbreviations:
BR = bedrock
UA = uppermost aquifer

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 HENNEPIN POWER PLANT
 801 - LANDFILL
 HENNEPIN, IL

Well ID	Well Type	Date	Event ID	Boron, total (mg/L)	Calcium, total (mg/L)	Chloride, total (mg/L)	Fluoride, total (mg/L)	pH (field) (SU)	Sulfate, total (mg/L)	Total Dissolved Solids (mg/L)
Background Value(s)	--	--	--	0.153	280	396	0.120	6.6/7.5	200	1,520
07	Background	09/09/2021	D9	0.0764	156	70.0	0.110	6.7	52.0	654
07	Background	03/22/2022	D10	0.0755	140	49.0	0.120	6.8	56.0	582
07	Background	09/14/2022	A5D/D11	0.0649	160	180	0.110	6.7	92.0	954
08	Background	09/09/2021	D9	0.111	188	152	0.1 U	6.6	100	876
08	Background	03/22/2022	D10	0.124	207	247	0.110	6.7	153	1,170
08	Background	09/14/2022	A5D/D11	0.0900	182	224	0.100	6.6	115	1,060
08D	Background	09/09/2021	D9	0.0965	216	250	0.100	6.6	123	1,090
08D	Background	03/22/2022	D10	0.112	208	257	0.110	6.6	174	1,210
08D	Background	09/14/2022	A5D/D11	0.0951	232	297	0.110	6.5	198	1,410
05R	Compliance	09/10/2021	D9	0.715	89.3	83.0	0.120	7.4	74.0	502
05R	Compliance	03/23/2022	D10	0.921	88.2	75.0	0.140	7.5	80.0	490
05R	Compliance	09/14/2022	D11	0.626	84.0	77.0	0.140	7.6	67.0	548
05DR	Compliance	09/10/2021	D9	0.824	88.4	85.0	0.150	7.2	84.0	508
05DR	Compliance	03/23/2022	D10	0.880	90.4	79.0	0.160	7.3	76.0	478
05DR	Compliance	09/14/2022	D11	0.803	84.4	84.0	0.160	7.3	71.0	558
40S	Compliance	09/09/2021	D9	1.73	71.5	79.0	0.150	7.7	95.0	466
40S	Compliance	03/23/2022	D10	2.17	78.2	80.0	0.160	7.6	118	506
40S	Compliance	06/08/2022	D10R	2.41	65.3	73.0	0.170	7.7	98.0	498
40S	Compliance	09/14/2022	D11	1.50	64.0	82.0	0.160	7.8	88.0	485
48	Compliance	09/10/2021	D9	1.09	87.0	79.0	0.160	7.5	89.0	484
48	Compliance	03/23/2022	D10	1.18	84.9	76.0	0.170	7.5	77.0	502
48	Compliance	09/14/2022	D11	2.02	73.9	80.0	0.170	7.5	126	520

Notes:
 If an event includes a resample, a statistically significant increase (SSI) is confirmed if both the sample and the resample exceed the background value.
 Exceedance of Background
 mg/L = milligrams per liter
 SU = Standard Units

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

TABLE 3
STATISTICAL BACKGROUND VALUES
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
HENNEPIN POWER PLANT
801 - LANDFILL
HENNEPIN, IL

Parameter	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
Calcium (mg/L)	12/08/2015 - 06/09/2017	24	0	Parametric UPL	280
Chloride (mg/L)	12/08/2015 - 06/09/2017	24	0	Parametric UPL	396
Fluoride (mg/L)	12/08/2015 - 06/09/2017	24	58	Non-parametric UPL	0.120
pH (field) (SU)	12/08/2015 - 06/09/2017	24	0	Non-parametric LPL/UPL	6.6/7.5
Sulfate (mg/L)	12/08/2015 - 06/09/2017	24	0	Parametric UPL	200
Total Dissolved Solids (mg/L)	12/08/2015 - 06/09/2017	24	0	Parametric UPL	1,520

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
- 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

2022 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



PROJECT: 169000X.XXX | DATED: 3/24/2022 | DESIGNER: galammc
Y:\Mapping\Projects\222285\MXD\GW_Contours\Round_2021\HennepinLandfill_801\HEN Landfill GWE Contours D9A4D 20210908.mxd



- BACKGROUND WELL
- COMPLIANCE WELL
- PORE WATER WELL
- MONITORING WELL
- STAFF GAGE, CCR UNIT
- 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. NM = NOT MEASURED
3. 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



**POTENTIOMETRIC SURFACE MAP
SEPTEMBER 8, 2021**

**2022 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT**
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



PROJECT: 169000XXXX | DATED: 10/18/2022 | DESIGNER: galarmc
Y:\Mapping\Projects\22\2285\MXD\GW_Contours\Round_2022\HennepinLF_801\HEN Landfill 801 Pot Surface 20220321.mxd



- BACKGROUND WELL
- COMPLIANCE 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



POTENTIOMETRIC SURFACE MAP
MARCH 21, 2022

2022 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 3

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



PROJECT: 169000XXXXX | DATED: 1/3/2023 | DESIGNER: gellamc
Y:\Mapping\Projects\22\2285\MXD\GW_Contours\Round_2022\HennepinLF_801\HEN Landfill 801 Pot Surface 20220913.mxd



- BACKGROUND WELL
- COMPLIANCE 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



POTENTIOMETRIC SURFACE MAP
SEPTEMBER 13 AND 14, 2022

2022 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 4

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



APPENDICES

APPENDIX A LABORATORY REPORTS

October 15, 2021

Brian Voelker
Vistra Energy
1500 Eastport Plaza Drive
Collinsville, IL 62234
TEL: (217) 412-6605
FAX:



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

RE: Hennepin GW Q3 2021

WorkOrder: 21081266

Dear Brian Voelker:

TEKLAB, INC received 43 samples on 9/10/2021 2:25:00 PM 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
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Sample Summary	18
Dates Report	19
Quality Control Results	26
Receiving Check List	70
Chain of Custody	Appended

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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)

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

<http://www.teklabinc.com/>

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Cooler Receipt Temp: 2.8 °C

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

Perchlorate analysis was performed by Keystone Laboratories, Inc. See attached report for QC summary.

This report contains CCR 801 data. EAH 10/14/21

Locations

Collinsville

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

Collinsville Air

Address 5445 Horseshoe Lake Road
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Springfield, IL 62711-9415
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Chicago

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

Kansas City

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

Client: Vistra Energy**Work Order:** 21081266**Client Project:** Hennepin GW Q3 2021**Report Date:** 15-Oct-21

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2022	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2022	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2022	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2022	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2022	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Kentucky	UST	0073		1/31/2022	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-004
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 05DR
 Collection Date: 09/10/2021 8:34

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	R	0		40.67	ft	1	09/10/4041 2:5*	349946.
STANDARD METHODS 2130 B FIELD								
Turbidity	R	1N0		6.3	UTO	1	09/10/4041 2:5*	349946.
STANDARD METHODS 18TH ED. 2580 B FIELD								
Conductivity	R	<500		141	mS	1	09/10/4041 2:5*	349946.
STANDARD METHODS 2550 B FIELD								
Temperature	R	0		17.3	C	1	09/10/4041 2:5*	349946.
STANDARD METHODS 4500-O G FIELD								
Dissolved Oxygen	R	0		0.56	mg/°	1	09/10/4041 2:5*	349946.
SW-846 9040B								
pH Field	R	1N0		7.22		1	09/10/4041 2:5*	349946.
SW-846 9050A								
Electrical Conductivity	R	1N0		962	AL/Vm	1	09/10/4041 2:5*	349946.
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity (as CaCO ₃)	U8° BP	0		253	mg/°	1	09/15/4041 11:56	34922.0
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity (as CaCO ₃)	U8° BP	0		0	mg/°	1	09/15/4041 11:56	34922.0
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	U8° BP	40		508	mg/°	1	09/1*/4041 15:4.	34929.0
SW-846 9036 (TOTAL)								
Sulfate	U8° BP	60		84	mg/°	6	09/17/4041 40:66	3499029
SW-846 9214 (TOTAL)								
Fluoride	U8° BP	0N0		0.15	mg/°	1	09/15/4041 11:5.	34922*9
SW-846 9251 (TOTAL)								
Chloride	U8° BP	6	L	85	mg/°	6	09/17/4041 40:66	3499090
<i>Matrix spike did not recover within control limits. Result is verified by re-analysis at dilution.</i>								
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Aluminum	U8° BP	0M00		88.4	mg/°	1	09/40/4041 11:41	1219*7
Magnesium	U8° BP	0N0600		31.0	mg/°	1	09/40/4041 11:41	1219*7
Potassium	U8° BP	0M00		7.47	mg/°	1	09/40/4041 11:41	1219*7
Sodium	U8° BP	0N0600		49.4	mg/°	1	09/40/4041 11:41	1219*7
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Chromium	U8° BP	0N0460		0.824	mg/°	6	09/41/4041 16:6*	1219*.

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-005
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 05R
 Collection Date: 09/10/2021 8:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		40.59	ft	1	09/10/4041 2:40	* 4994R3
STANDARD METHODS 2130 B FIELD								
Turbidity	5	1.0		3.6	y TN	1	09/10/4041 2:40	* 4994R3
STANDARD METHODS 18TH ED. 2580 B FIELD								
UOdation* edu- tion Potential	5	xc00		119	mV	1	09/10/4041 2:40	* 4994R3
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		17.1	SC	1	09/10/4041 2:40	* 4994R3
STANDARD METHODS 4500-O G FIELD								
UOgen, DissolFed	5	0		0.30	mg/μ	1	09/10/4041 2:40	* 4994R3
SW-846 9040B								
pH, °ield	5	1.00		7.36		1	09/10/4041 2:40	* 4994R3
SW-846 9050A								
v pe- . Condu- tan- e, °ield	5	1.00		972	Lv/- m	1	09/10/4041 2:40	* 4994R3
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinit6, Bi- arbonate (as CaCUc)	y 8 μAP	0		267	mg/μ	1	09/1c/4041 11:E1	* 492230
STANDARD METHODS 2320 B 1997, 2011								
Alkalinit6, Carbonate (as CaCUc)	y 8 μAP	0		0	mg/μ	1	09/1c/4041 11:E1	* 492230
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total DissolFed v olds	y 8 μAP	40		502	mg/μ	1	09/1E/4041 1R10	* 492930
SW-846 9036 (TOTAL)								
v ulfate	y 8 μAP	R0		74	mg/μ	R	09/17/4041 1:43	* 499041
SW-846 9214 (TOTAL)								
° luoride	y 8 μAP	0.10		0.12	mg/μ	1	09/1c/4041 11:c9	* 4922E9
SW-846 9251 (TOTAL)								
Chloride	y 8 μAP	R		83	mg/μ	R	09/17/4041 1:42	* 499044
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Cal- ium	y 8 μAP	0.100	v	89.3	mg/μ	1	09/40/4041 14:c9	1219E7
Magnesium	y 8 μAP	0.0R00	v	32.3	mg/μ	1	09/40/4041 14:c9	1219E7
Potassium	y 8 μAP	0.R00		9.94	mg/μ	R	09/40/4041 13:R0	1219E7
v odium	y 8 μAP	0.0R00	v	50.0	mg/μ	1	09/40/4041 14:c9	1219E7
<i>Matrix spike control limits for Ca, Mg, and Na are not applicable due to high sample/spike ratio.</i>								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	y 8 μAP	0.04R0		0.715	mg/μ	R	09/41/4041 17:04	1219E3

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-007
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 07
 Collection Date: 09/09/2021 17:08

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		67.02	ft	4	09/09/1014 42:05	R199132
STANDARD METHODS 2130 B FIELD								
Turbidity	*	4.0		3.9	y TN	4	09/09/1014 42:05	R199132
STANDARD METHODS 18TH ED. 2580 B FIELD								
UOdationXRedu- tion Potential	*	xc00		141	mV	4	09/09/1014 42:05	R199132
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		11.6	SC	4	09/09/1014 42:05	R199132
STANDARD METHODS 4500-O G FIELD								
UOgen, DissolFed	*	0		2.67	mg/μ	4	09/09/1014 42:05	R199132
SW-846 9040B								
pH, °ield	*	4.00		6.73		4	09/09/1014 42:05	R199132
SW-846 9050A								
v pe- . Condu- tan- e, °ield	*	4.00		1330	Lv/- m	4	09/09/1014 42:05	R199132
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinit6, Bi- arbonate (as CaCUc)	y 8 μAP	0		468	mg/μ	4	09/4c/1014 44:E2	R195520
STANDARD METHODS 2320 B 1997, 2011								
Alkalinit6, Carbonate (as CaCUc)	y 8 μAP	0		0	mg/μ	4	09/4c/1014 44:E2	R195520
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total DissolFed v olds	y 8 μAP	10		654	mg/μ	4	09/4E/1014 43:40	R195920
SW-846 9036 (TOTAL)								
v ulfate	y 8 μAP	10		52	mg/μ	1	09/47/1014 4:c0	R199014
SW-846 9214 (TOTAL)								
° luoride	y 8 μAP	0.40		0.11	mg/μ	4	09/4c/1014 44:E4	R1955E9
SW-846 9251 (TOTAL)								
Chloride	y 8 μAP	1		70	mg/μ	1	09/47/1014 4:c0	R199011
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Cal- ium	y 8 μAP	0.400		156	mg/μ	4	09/42/1014 14:32	4549cE
Magnesium	y 8 μAP	0.0300		53.4	mg/μ	4	09/42/1014 14:32	4549cE
Potassium	y 8 μAP	0.400		3.24	mg/μ	4	09/10/1014 44:EE	4549cE
v odium	y 8 μAP	0.0300		44.1	mg/μ	4	09/42/1014 14:32	4549cE
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	y 8 μAP	0.0130		0.0764	mg/μ	3	09/12/1014 41:E7	4549c2

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-008
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 08
 Collection Date: 09/09/2021 14:33

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		53.08	ft	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 2130 B FIELD								
Turbidity	*	4.0		4.2	y TN	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 18TH ED. 2580 B FIELD								
UOdationXRedu- tion Potential	*	xc00		157	mV	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		13.6	SC	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 4500-O G FIELD								
UOgen, DissolFed	*	0		2.62	mg/μ	4	09/09/1014 4E:cc	R199132
SW-846 9040B								
pH, °ield	*	4.00		6.60		4	09/09/1014 4E:cc	R199132
SW-846 9050A								
v pe- . Condu- tan- e, °ield	*	4.00		1730	Lv/- m	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinit6, Bi- arbonate (as CaCUc)	y 8 μAP	0		515	mg/μ	4	09/4c/1014 44:3E	R195520
STANDARD METHODS 2320 B 1997, 2011								
Alkalinit6, Carbonate (as CaCUc)	y 8 μAP	0		0	mg/μ	4	09/4c/1014 44:3E	R195520
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total DissolFed v olds	y 8 μAP	10		876	mg/μ	4	09/4E/1014 43:40	R195920
SW-846 9036 (TOTAL)								
v ulfate	y 8 μAP	400		100	mg/μ	40	09/47/1014 4:cc	R199014
SW-846 9214 (TOTAL)								
° luoride	y 8 μAP	0.40	J	0.09	mg/μ	4	09/4c/1014 44:E1	R1955E9
SW-846 9251 (TOTAL)								
Chloride	y 8 μAP	40		152	mg/μ	40	09/47/1014 4:cc	R199011
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Cal- ium	y 8 μAP	0.400		188	mg/μ	4	09/42/1014 14:39	4549cE
Magnesium	y 8 μAP	0.0300		54.0	mg/μ	4	09/42/1014 14:39	4549cE
Potassium	y 8 μAP	0.400		3.04	mg/μ	4	09/10/1014 44:E7	4549cE
v odium	y 8 μAP	0.0300		84.1	mg/μ	4	09/42/1014 14:39	4549cE
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	y 8 μAP	0.0130		0.111	mg/μ	3	09/12/1014 41:31	4549c2

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-009
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 08 Duplicate
 Collection Date: 09/09/2021 14:33

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		53.08	ft	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 2130 B FIELD								
Turbidity	*	4.0		4.2	y TN	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 18TH ED. 2580 B FIELD								
UOdationxRedu- tion Potential	*	x00		157	mV	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		13.6	SC	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 4500-O G FIELD								
UOgen, DissolFed	*	0		2.62	mg/μ	4	09/09/1014 4E:cc	R199132
SW-846 9040B								
pH, °ield	*	4.00		6.60		4	09/09/1014 4E:cc	R199132
SW-846 9050A								
v pe- . Condu- tan- e, °ield	*	4.00		1730	Lv/- m	4	09/09/1014 4E:cc	R199132
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinit6, Bi- arbonate (as CaCUc)	y 8 μAP	0		514	mg/μ	4	09/4c/1014 41:04	R195520
STANDARD METHODS 2320 B 1997, 2011								
Alkalinit6, Carbonate (as CaCUc)	y 8 μAP	0		0	mg/μ	4	09/4c/1014 41:04	R195520
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total DissolFed v olds	y 8 μAP	10		860	mg/μ	4	09/4E/1014 43:44	R195920
SW-846 9036 (TOTAL)								
v ulfate	y 8 μAP	400		104	mg/μ	40	09/47/1014 4:31	R199014
SW-846 9214 (TOTAL)								
° luoride	y 8 μAP	0.40	J	0.09	mg/μ	4	09/4c/1014 44:EE	R1955E9
SW-846 9251 (TOTAL)								
Chloride	y 8 μAP	40		156	mg/μ	40	09/47/1014 4:31	R199011
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Cal- ium	y 8 μAP	0.400	v	191	mg/μ	4	09/42/1014 11:00	4549cE
Magnesium	y 8 μAP	0.0300	v	54.8	mg/μ	4	09/42/1014 11:00	4549cE
Potassium	y 8 μAP	0.400		3.04	mg/μ	4	09/10/1014 44:E5	4549cE
v odium	y 8 μAP	0.0300	v	84.4	mg/μ	4	09/42/1014 11:00	4549cE
<i>Matrix spike control limits for Ca, Mg and Na are not applicable due to high sample/spike ratio.</i>								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	y 8 μAP	0.0130		0.114	mg/μ	3	09/12/1014 41:35	4549c2

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-010
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 08D
 Collection Date: 09/09/2021 14:11

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		53.80	ft	4	09/09/1014 4E:44	R199132
STANDARD METHODS 2130 B FIELD								
Turbidity	*	4.0		3.7	y TN	4	09/09/1014 4E:44	R199132
STANDARD METHODS 18TH ED. 2580 B FIELD								
ORP Reduction Potential	*	400		146	mV	4	09/09/1014 4E:44	R199132
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		14.3	°C	4	09/09/1014 4E:44	R199132
STANDARD METHODS 4500-O G FIELD								
Dissolved Oxygen	*	0		0.29	mg/L	4	09/09/1014 4E:44	R199132
SW-846 9040B								
pH, field	*	4.00		6.58		4	09/09/1014 4E:44	R199132
SW-846 9050A								
Specific Conductance, field	*	4.00		2150	µmhos/cm	4	09/09/1014 4E:44	R199132
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	y 8 µAP	0		518	mg/L	4	09/4c/1014 41:09	R195520
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	y 8 µAP	0		0	mg/L	4	09/4c/1014 41:09	R195520
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	y 8 µAP	10		1090	mg/L	4	09/4E/1014 43:44	R195920
SW-846 9036 (TOTAL)								
Sulfate	y 8 µAP	400		123	mg/L	40	09/47/1014 4:3E	R199014
SW-846 9214 (TOTAL)								
Fluoride	y 8 µAP	0.40		0.10	mg/L	4	09/4c/1014 44:E7	R1955E9
SW-846 9251 (TOTAL)								
Chloride	y 8 µAP	40		250	mg/L	40	09/47/1014 4:3E	R199011
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Cadmium	y 8 µAP	0.400		216	mg/L	4	09/42/1014 11:07	4549cE
Magnesium	y 8 µAP	0.0300		63.9	mg/L	4	09/42/1014 11:07	4549cE
Potassium	y 8 µAP	0.400		4.56	mg/L	4	09/10/1014 44:3c	4549cE
Sodium	y 8 µAP	0.0300		128	mg/L	4	09/42/1014 11:07	4549cE
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	y 8 µAP	0.0130		0.0965	mg/L	3	09/12/1014 4c:42	4549c2

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-015
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 16
 Collection Date: 09/09/2021 13:53

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		53.55	ft	4	09/09/1014 4c:3c	R199132
STANDARD METHODS 2130 B FIELD								
Turbidity	*	4.0		3.8	y TN	4	09/09/1014 4c:3c	R199132
STANDARD METHODS 18TH ED. 2580 B FIELD								
ORP Reduction Potential	*	400		113	mV	4	09/09/1014 4c:3c	R199132
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		23.8	°C	4	09/09/1014 4c:3c	R199132
STANDARD METHODS 4500-O G FIELD								
Dissolved Oxygen	*	0		1.25	mg/L	4	09/09/1014 4c:3c	R199132
SW-846 9040B								
pH, field	*	4.00		7.11		4	09/09/1014 4c:3c	R199132
SW-846 9050A								
Specific Conductance, field	*	4.00		877	µS/cm	4	09/09/1014 4c:3c	R199132
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	y 8 µAP	0		221	mg/L	4	09/4c/1014 41:E3	R195520
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	y 8 µAP	0		0	mg/L	4	09/4c/1014 41:E3	R195520
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	y 8 µAP	10		476	mg/L	4	09/43/1014 43:45	R1990E1
SW-846 9036 (TOTAL)								
Sulfate	y 8 µAP	10		70	mg/L	1	09/47/1014 1:40	R199014
SW-846 9214 (TOTAL)								
Fluoride	y 8 µAP	0.40		0.25	mg/L	4	09/4c/1014 41:00	R1955E9
SW-846 9251 (TOTAL)								
Chloride	y 8 µAP	3		100	mg/L	3	09/47/1014 14:07	R199090
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	y 8 µAP	0.400		80.2	mg/L	4	09/42/1014 11:44	4549cE
Magnesium	y 8 µAP	0.0300		29.3	mg/L	4	09/42/1014 11:44	4549cE
Potassium	y 8 µAP	0.400		4.88	mg/L	4	09/10/1014 41:47	4549cE
Sodium	y 8 µAP	0.0300		54.4	mg/L	4	09/42/1014 11:44	4549cE
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	y 8 µAP	0.0130		0.138	mg/L	3	09/12/1014 4E:42	4549c2

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-016
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 17
 Collection Date: 09/09/2021 13:36

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		54.33	ft	4	09/09/1014 42:25	R199136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	4y0		3.7	NTU	4	09/09/1014 42:25	R199136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-200		110	mV	4	09/09/1014 42:25	R199136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		22.9	SC	4	09/09/1014 42:25	R199136
STANDARD METHODS 4500-O G FIELD								
Ox. gen, Dissolved	*	0		1.10	mg/μ	4	09/09/1014 42:25	R199136
SW-846 9040B								
pH, °ield	*	4y00		7.26		4	09/09/1014 42:25	R199136
SW-846 9050A								
Conductance, °ield	*	4y00		798	Lv/cm	4	09/09/1014 42:25	R199136
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₂)	NEμAP	0		180	mg/μ	4	09/42/1014 41:36	R198860
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₂)	NEμAP	0		0	mg/μ	4	09/42/1014 41:36	R198860
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NEμAP	10		398	mg/μ	4	09/43/1014 43:48	R199071
SW-846 9036 (TOTAL)								
Sulfate	NEμAP	10		58	mg/μ	1	09/45/1014 1:43	R199014
SW-846 9214 (TOTAL)								
Fluoride	NEμAP	0y40		0.24	mg/μ	4	09/42/1014 41:01	R198879
SW-846 9251 (TOTAL)								
Chloride	NEμAP	1		74	mg/μ	1	09/45/1014 1:45	R199011
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NEμAP	0y400		68.6	mg/μ	4	09/46/1014 11:15	484927
Magnesium	NEμAP	0y0300		27.4	mg/μ	4	09/46/1014 11:15	484927
Potassium	NEμAP	0y400		4.28	mg/μ	4	09/10/1014 41:48	484927
Sodium	NEμAP	0y0300		36.7	mg/μ	4	09/46/1014 11:15	484927
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NEμAP	0y0130		0.105	mg/μ	3	09/16/1014 47:12	484926

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-035
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 40S
 Collection Date: 09/09/2021 16:26

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		39.80	ft	4	09/09/1014 45:15	R199136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	4y0		3.1	NTU	4	09/09/1014 45:15	R199136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-200		55	mV	4	09/09/1014 45:15	R199136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		17.1	SC	4	09/09/1014 45:15	R199136
STANDARD METHODS 4500-O G FIELD								
Ox. gen, Dissolved	*	0		0.38	mg/μ	4	09/09/1014 45:15	R199136
SW-846 9040B								
pH, °ield	*	4y00		7.73		4	09/09/1014 45:15	R199136
SW-846 9050A								
Conductance, °ield	*	4y00		849	Lv/cm	4	09/09/1014 45:15	R199136
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₂)	NEμAP	0		177	mg/μ	4	09/42/1014 47:17	R198860
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₂)	NEμAP	0		0	mg/μ	4	09/42/1014 47:17	R198860
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NEμAP	10		466	mg/μ	4	09/43/1014 45:71	R199071
SW-846 9036 (TOTAL)								
Sulfate	NEμAP	30		95	mg/μ	3	09/45/1014 2:74	R199014
SW-846 9214 (TOTAL)								
Fluoride	NEμAP	0y40		0.15	mg/μ	4	09/42/1014 41:23	R198879
SW-846 9251 (TOTAL)								
Chloride	NEμAP	3		79	mg/μ	3	09/45/1014 2:74	R199011
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NEμAP	0y400		71.5	mg/μ	4	09/46/1014 11:78	484927
Magnesium	NEμAP	0y0300		31.9	mg/μ	4	09/46/1014 11:78	484927
Potassium	NEμAP	0y400		7.31	mg/μ	4	09/10/1014 41:71	484927
Sodium	NEμAP	0y0300		41.7	mg/μ	4	09/46/1014 11:78	484927
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NEμAP	0y0130		1.73	mg/μ	3	09/16/1014 43:37	484926

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-039
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: 48
 Collection Date: 09/10/2021 9:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		39.55	ft	4	09/40/1014 9:33	R199136
STANDARD METHODS 2130 B FIELD								
Turbidit.	*	4y0		5.8	NTU	4	09/40/1014 9:33	R199136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-200		147	mV	4	09/40/1014 9:33	R199136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		17.7	SC	4	09/40/1014 9:33	R199136
STANDARD METHODS 4500-O G FIELD								
Ox. gen, DissolFed	*	0		0.25	mg/μ	4	09/40/1014 9:33	R199136
SW-846 9040B								
pH, °ield	*	4y00		7.47		4	09/40/1014 9:33	R199136
SW-846 9050A								
v pecyConductance, °ield	*	4y00		925	Lv/cm	4	09/40/1014 9:33	R199136
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinit. , Bicarbonate (as CaCO2)	NEμAP	0		219	mg/μ	4	09/42/1014 43:01	R198860
STANDARD METHODS 2320 B 1997, 2011								
Alkalinit. , Carbonate (as CaCO2)	NEμAP	0		0	mg/μ	4	09/42/1014 43:01	R198860
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total DissolFed v olids	NEμAP	10		484	mg/μ	4	09/45/1014 45:31	R199086
SW-846 9036 (TOTAL)								
v ulfate	NEμAP	30		89	mg/μ	3	09/45/1014 7:01	R199014
SW-846 9214 (TOTAL)								
° luoride	NEμAP	0y40		0.16	mg/μ	4	09/42/1014 41:79	R198879
SW-846 9251 (TOTAL)								
Chloride	NEμAP	3		79	mg/μ	3	09/45/1014 7:01	R199011
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NEμAP	0y400		87.0	mg/μ	4	09/10/1014 42:04	484975
Magnesium	NEμAP	0y0300		30.1	mg/μ	4	09/10/1014 42:04	484975
Potassium	NEμAP	0y400		6.36	mg/μ	4	09/10/1014 42:04	484975
v odium	NEμAP	0y0300		45.1	mg/μ	4	09/10/1014 42:04	484975
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NEμAP	0y0130		1.09	mg/μ	3	09/14/1014 14:23	484976

Client: Vistra Energy
 Client Project: Hennepin GW Q3 2021
 Lab ID: 21081266-043
 Matrix: GROUNDWATER

Work Order: 21081266
 Report Date: 15-Oct-21
 Client Sample ID: Field Blank
 Collection Date: 09/10/2021 10:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinit., Bicarbonate (as CaCO ₂)	NEμAP	0		1	mg/μ	4	09/42/1014 43:27	R198860
STANDARD METHODS 2320 B 1997, 2011								
Alkalinit., Carbonate (as CaCO ₂)	NEμAP	0		0	mg/μ	4	09/42/1014 43:27	R198860
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NEμAP	10		< 20	mg/μ	4	09/45/1014 45:31	R199086
SW-846 9036 (TOTAL)								
Sulfate	NEμAP	40		< 10	mg/μ	4	09/45/1014 7:27	R199014
SW-846 9214 (TOTAL)								
Fluoride	NEμAP	0.40		< 0.10	mg/μ	4	09/42/1014 41:35	R198879
SW-846 9251 (TOTAL)								
Chloride	NEμAP	4		< 1	mg/μ	4	09/45/1014 7:27	R199011
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NEμAP	0.400		< 0.100	mg/μ	4	09/10/1014 42:71	484975
Magnesium	NEμAP	0.0300		< 0.0500	mg/μ	4	09/10/1014 42:71	484975
Potassium	NEμAP	0.400		< 0.100	mg/μ	4	09/10/1014 42:71	484975
Sodium	NEμAP	0.0300		< 0.0500	mg/μ	4	09/10/1014 42:71	484975
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NEμAP	0.0130		< 0.0250	mg/μ	3	09/14/1014 14:30	484976



Sample Summary

<http://www.teklabinc.com/>

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
21081266-004	05DR	Groundwater	2	09/10/2021 8:34
21081266-005	05R	Groundwater	2	09/10/2021 8:20
21081266-007	07	Groundwater	2	09/09/2021 17:08
21081266-008	08	Groundwater	2	09/09/2021 14:33
21081266-009	08 Duplicate	Groundwater	2	09/09/2021 14:33
21081266-010	08D	Groundwater	2	09/09/2021 14:11
21081266-015	16	Groundwater	2	09/09/2021 13:53
21081266-016	17	Groundwater	2	09/09/2021 13:36
21081266-035	40S	Groundwater	2	09/09/2021 16:26
21081266-039	48	Groundwater	2	09/10/2021 9:55
21081266-043	Field Blank	Groundwater	2	09/10/2021 10:45

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
21081266-004A	05DR	09/10/2021 8:34	09/10/2021 14:25		
	Field Elevation Measurements				09/10/2021 8:34
	Standard Methods 2130 B Field				09/10/2021 8:34
	Standard Methods 2320 B 1997, 2011				09/13/2021 11:35
	Standard Methods 18th Ed. 2580 B Field				09/10/2021 8:34
	Standard Methods 2320 B (Total) 1997, 2011				09/13/2021 11:35
	Standard Methods 2320 B 1997, 2011				09/13/2021 11:35
	Standard Methods 2540 C (Total) 1997, 2011				09/14/2021 13:27
	Standard Methods 2550 B Field				09/10/2021 8:34
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/10/2021 19:05
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/10/2021 19:00
	Standard Methods 4500-O G Field				09/10/2021 8:34
	SW-846 9036 (Total)				09/16/2021 20:55
	SW-846 9040B				09/10/2021 8:34
	SW-846 9050A				09/10/2021 8:34
	SW-846 9214 (Total)				09/13/2021 11:37
	SW-846 9251 (Total)				09/16/2021 20:55
21081266-004C	05DR	09/10/2021 8:34	09/10/2021 14:25		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 11:38	09/20/2021 11:21
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 11:57	09/21/2021 15:54
21081266-005A	05R	09/10/2021 8:20	09/10/2021 14:25		
	Field Elevation Measurements				09/10/2021 8:20
	Standard Methods 2130 B Field				09/10/2021 8:20
	Standard Methods 2320 B 1997, 2011				09/13/2021 11:41
	Standard Methods 18th Ed. 2580 B Field				09/10/2021 8:20
	Standard Methods 2320 B (Total) 1997, 2011				09/13/2021 11:41
	Standard Methods 2320 B 1997, 2011				09/13/2021 11:41
	Standard Methods 2540 C (Total) 1997, 2011				09/14/2021 15:10
	Standard Methods 2550 B Field				09/10/2021 8:20
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/10/2021 19:06
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/10/2021 19:02
	Standard Methods 4500-O G Field				09/10/2021 8:20
	SW-846 9036 (Total)				09/16/2021 1:27
	SW-846 9040B				09/10/2021 8:20
	SW-846 9050A				09/10/2021 8:20
	SW-846 9214 (Total)				09/13/2021 11:39
	SW-846 9251 (Total)				09/16/2021 1:28

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
21081266-005C	05R	09/10/2021 8:20	09/10/2021 14:25		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 11:38	09/20/2021 12:39
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 11:38	09/20/2021 17:50
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 11:57	09/21/2021 16:02
21081266-007A	07	09/09/2021 17:08	09/10/2021 14:25		
	Field Elevation Measurements				09/09/2021 17:08
	Standard Methods 2130 B Field				09/09/2021 17:08
	Standard Methods 18th Ed. 2580 B Field				09/09/2021 17:08
	Standard Methods 2320 B (Total) 1997, 2011				09/13/2021 11:47
	Standard Methods 2320 B 1997, 2011				09/13/2021 11:47
	Standard Methods 2540 C (Total) 1997, 2011				09/14/2021 15:10
	Standard Methods 2550 B Field				09/09/2021 17:08
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/10/2021 19:07
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/10/2021 19:07
	Standard Methods 4500-O G Field				09/09/2021 17:08
	SW-846 9036 (Total)				09/16/2021 1:30
	SW-846 9040B				09/09/2021 17:08
	SW-846 9050A				09/09/2021 17:08
	SW-846 9214 (Total)				09/13/2021 11:41
	SW-846 9251 (Total)				09/16/2021 1:30
21081266-007D	07	09/09/2021 17:08	09/10/2021 14:25		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/17/2021 21:57
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/20/2021 11:44
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 8:19	09/24/2021 11:47
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 8:19	09/27/2021 12:46
	SW-846 7470A (Total)			09/16/2021 7:00	09/16/2021 18:04
21081266-008A	08	09/09/2021 14:33	09/10/2021 14:25		
	Field Elevation Measurements				09/09/2021 14:33
	Standard Methods 2130 B Field				09/09/2021 14:33
	Standard Methods 2320 B 1997, 2011				09/13/2021 11:54
	Standard Methods 18th Ed. 2580 B Field				09/09/2021 14:33
	Standard Methods 2320 B (Total) 1997, 2011				09/13/2021 11:54
	Standard Methods 2320 B 1997, 2011				09/13/2021 11:54
	Standard Methods 2540 C (Total) 1997, 2011				09/14/2021 15:10
	Standard Methods 2550 B Field				09/09/2021 14:33
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/10/2021 19:08
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/10/2021 19:22

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	Standard Methods 4500-O G Field				09/09/2021 14:33
	SW-846 9036 (Total)				09/16/2021 1:33
	SW-846 9040B				09/09/2021 14:33
	SW-846 9050A				09/09/2021 14:33
	SW-846 9214 (Total)				09/13/2021 11:42
	SW-846 9251 (Total)				09/16/2021 1:33
21081266-008D	08	09/09/2021 14:33	09/10/2021 14:25		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/17/2021 21:59
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/20/2021 11:46
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 8:19	09/24/2021 11:55
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 8:19	09/27/2021 12:52
	SW-846 7470A (Total)			09/17/2021 10:47	09/17/2021 22:37
21081266-009A	08 Duplicate	09/09/2021 14:33	09/10/2021 14:25		
	Field Elevation Measurements				09/09/2021 14:33
	Standard Methods 2130 B Field				09/09/2021 14:33
	Standard Methods 2320 B 1997, 2011				09/13/2021 12:01
	Standard Methods 18th Ed. 2580 B Field				09/09/2021 14:33
	Standard Methods 2320 B (Total) 1997, 2011				09/13/2021 12:01
	Standard Methods 2320 B 1997, 2011				09/13/2021 12:01
	Standard Methods 2540 C (Total) 1997, 2011				09/14/2021 15:11
	Standard Methods 2550 B Field				09/09/2021 14:33
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/10/2021 19:09
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/10/2021 19:24
	Standard Methods 4500-O G Field				09/09/2021 14:33
	SW-846 9036 (Total)				09/16/2021 1:52
	SW-846 9040B				09/09/2021 14:33
	SW-846 9050A				09/09/2021 14:33
	SW-846 9214 (Total)				09/13/2021 11:44
	SW-846 9251 (Total)				09/16/2021 1:52
21081266-009D	08 Duplicate	09/09/2021 14:33	09/10/2021 14:25		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/17/2021 22:00
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/20/2021 11:48
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 8:19	09/24/2021 12:04
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 8:19	09/27/2021 12:58
	SW-846 7470A (Total)			09/17/2021 10:47	09/17/2021 22:46
21081266-010A	08D	09/09/2021 14:11	09/10/2021 14:25		
	Field Elevation Measurements				09/09/2021 14:11

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
	Standard Methods 2130 B Field				09/09/2021 14:11
	Standard Methods 2320 B 1997, 2011				09/13/2021 12:09
	Standard Methods 18th Ed. 2580 B Field				09/09/2021 14:11
	Standard Methods 2320 B (Total) 1997, 2011				09/13/2021 12:09
	Standard Methods 2320 B 1997, 2011				09/13/2021 12:09
	Standard Methods 2540 C (Total) 1997, 2011				09/14/2021 15:11
	Standard Methods 2550 B Field				09/09/2021 14:11
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/10/2021 19:09
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/10/2021 19:26
	Standard Methods 4500-O G Field				09/09/2021 14:11
	SW-846 9036 (Total)				09/16/2021 1:54
	SW-846 9040B				09/09/2021 14:11
	SW-846 9050A				09/09/2021 14:11
	SW-846 9214 (Total)				09/13/2021 11:46
	SW-846 9251 (Total)				09/16/2021 1:54
21081266-010D	08D	09/09/2021 14:11	09/10/2021 14:25		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/17/2021 22:06
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/20/2021 11:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 8:19	09/24/2021 12:30
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 8:19	09/27/2021 13:17
	SW-846 7470A (Total)			09/17/2021 10:47	09/17/2021 22:55
21081266-015A	16	09/09/2021 13:53	09/10/2021 14:25		
	Field Elevation Measurements				09/09/2021 13:53
	Standard Methods 2130 B Field				09/09/2021 13:53
	Standard Methods 18th Ed. 2580 B Field				09/09/2021 13:53
	Standard Methods 2320 B (Total) 1997, 2011				09/13/2021 12:45
	Standard Methods 2320 B 1997, 2011				09/13/2021 12:45
	Standard Methods 2540 C (Total) 1997, 2011				09/15/2021 15:18
	Standard Methods 2550 B Field				09/09/2021 13:53
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/10/2021 18:58
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/10/2021 19:44
	Standard Methods 4500-O G Field				09/09/2021 13:53
	SW-846 9036 (Total)				09/16/2021 2:10
	SW-846 9040B				09/09/2021 13:53
	SW-846 9050A				09/09/2021 13:53
	SW-846 9214 (Total)				09/13/2021 12:00
	SW-846 9251 (Total)				09/16/2021 21:06
21081266-015C	16	09/09/2021 13:53	09/10/2021 14:25		

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date	Test Name	Prep Date/Time	Analysis Date/Time
				SW-846 3005A, 6010B, Metals by ICP (Total)	09/17/2021 8:04	09/17/2021 22:11
				SW-846 3005A, 6010B, Metals by ICP (Total)	09/17/2021 8:04	09/20/2021 12:16
				SW-846 3005A, 6020A, Metals by ICPMS (Total)	09/17/2021 8:19	09/23/2021 0:36
				SW-846 3005A, 6020A, Metals by ICPMS (Total)	09/17/2021 8:19	09/27/2021 14:17
21081266-016A	17	09/09/2021 13:36	09/10/2021 14:25	Field Elevation Measurements		09/09/2021 13:36
				Standard Methods 2130 B Field		09/09/2021 13:36
				Standard Methods 18th Ed. 2580 B Field		09/09/2021 13:36
				Standard Methods 2320 B (Total) 1997, 2011		09/13/2021 12:57
				Standard Methods 2320 B 1997, 2011		09/13/2021 12:57
				Standard Methods 2540 C (Total) 1997, 2011		09/15/2021 15:18
				Standard Methods 2550 B Field		09/09/2021 13:36
				Standard Methods 4500-NO2 B (Total) 2000, 2011		09/10/2021 18:59
				Standard Methods 4500-NO3 F (Total) 2000, 2011		09/10/2021 19:59
				Standard Methods 4500-O G Field		09/09/2021 13:36
				SW-846 9036 (Total)		09/16/2021 2:15
				SW-846 9040B		09/09/2021 13:36
				SW-846 9050A		09/09/2021 13:36
				SW-846 9214 (Total)		09/13/2021 12:02
				SW-846 9251 (Total)		09/16/2021 2:16
21081266-016C	17	09/09/2021 13:36	09/10/2021 14:25	SW-846 3005A, 6010B, Metals by ICP (Total)	09/17/2021 8:04	09/17/2021 22:26
				SW-846 3005A, 6010B, Metals by ICP (Total)	09/17/2021 8:04	09/20/2021 12:18
				SW-846 3005A, 6020A, Metals by ICPMS (Total)	09/17/2021 8:19	09/23/2021 0:44
				SW-846 3005A, 6020A, Metals by ICPMS (Total)	09/17/2021 8:19	09/27/2021 14:23
21081266-035A	40S	09/09/2021 16:26	09/10/2021 14:25	Field Elevation Measurements		09/09/2021 16:26
				Standard Methods 2130 B Field		09/09/2021 16:26
				Standard Methods 2320 B 1997, 2011		09/13/2021 14:24
				Standard Methods 18th Ed. 2580 B Field		09/09/2021 16:26
				Standard Methods 2320 B (Total) 1997, 2011		09/13/2021 14:24
				Standard Methods 2320 B 1997, 2011		09/13/2021 14:24
				Standard Methods 2540 C (Total) 1997, 2011		09/15/2021 16:42
				Standard Methods 2550 B Field		09/09/2021 16:26
				Standard Methods 4500-NO2 B (Total) 2000, 2011		09/10/2021 19:01
				Standard Methods 4500-NO3 F (Total) 2000, 2011		09/10/2021 20:16
				Standard Methods 4500-O G Field		09/09/2021 16:26
				SW-846 9036 (Total)		09/16/2021 3:41

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	SW-846 9040B				09/09/2021 16:26
	SW-846 9050A				09/09/2021 16:26
	SW-846 9214 (Total)				09/13/2021 12:35
	SW-846 9251 (Total)				09/16/2021 3:41
21081266-035C	40S	09/09/2021 16:26	09/10/2021 14:25		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/17/2021 22:48
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 8:04	09/20/2021 12:42
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 8:19	09/27/2021 15:54
21081266-039A	48	09/10/2021 9:55	09/10/2021 14:25		
	Field Elevation Measurements				09/10/2021 9:55
	Standard Methods 2130 B Field				09/10/2021 9:55
	Standard Methods 18th Ed. 2580 B Field				09/10/2021 9:55
	Standard Methods 2320 B (Total) 1997, 2011				09/13/2021 15:02
	Standard Methods 2320 B 1997, 2011				09/13/2021 15:02
	Standard Methods 2540 C (Total) 1997, 2011				09/16/2021 16:52
	Standard Methods 2550 B Field				09/10/2021 9:55
	Standard Methods 4500-O G Field				09/10/2021 9:55
	SW-846 9036 (Total)				09/16/2021 4:02
	SW-846 9040B				09/10/2021 9:55
	SW-846 9050A				09/10/2021 9:55
	SW-846 9214 (Total)				09/13/2021 12:49
	SW-846 9251 (Total)				09/16/2021 4:02
21081266-039B	48	09/10/2021 9:55	09/10/2021 14:25		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 11:38	09/20/2021 13:01
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 11:57	09/21/2021 21:35
21081266-043A	Field Blank	09/10/2021 10:45	09/10/2021 14:25		
	Standard Methods 2320 B 1997, 2011				09/13/2021 15:34
	Standard Methods 2320 B (Total) 1997, 2011				09/13/2021 15:34
	Standard Methods 2320 B 1997, 2011				09/13/2021 15:34
	Standard Methods 2540 C (Total) 1997, 2011				09/16/2021 16:52
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/10/2021 19:02
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/10/2021 20:20
	SW-846 9036 (Total)				09/16/2021 4:34
	SW-846 9214 (Total)				09/13/2021 12:56
	SW-846 9251 (Total)				09/16/2021 4:34
21081266-043D	Field Blank	09/10/2021 10:45	09/10/2021 14:25		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/17/2021 11:38	09/20/2021 13:42



Dates Report

<http://www.teklabinc.com/>

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 11:57	09/21/2021 21:50
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/17/2021 11:38	10/02/2021 1:16
	SW-846 7470A (Total)			09/17/2021 10:53	09/17/2021 21:50



Quality Control Results

<http://www.teklabinc.com/>

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9040B

Batch R299257		SampType: LCS		Units						
SampID: LCS-R299257										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH, Field	*	1.00		7.10	7.000	0	101.4	98.57	101.4	09/08/2021
pH, Field	*	1.00		6.99	7.000	0	99.9	98.57	101.4	09/09/2021
pH, Field	*	1.00		7.04	7.000	0	100.6	98.57	101.4	09/10/2021

SW-846 9050A

Batch R299257		SampType: LCS		Units $\mu\text{S/cm}$						
SampID: LCS-R299257										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Spec. Conductance, Field	*	1.00		1330	1412	0	94.3	90	110	09/09/2021
Spec. Conductance, Field	*	1.00		1410	1412	0	99.6	90	110	09/10/2021
Spec. Conductance, Field	*	1.00		1500	1412	0	106.4	90	110	09/08/2021

STANDARD METHODS 2320 B 1997, 2011

Batch R298870		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						09/13/2021

Batch R298870		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		235	232.0	0	101.3	90	110	09/13/2021	

STANDARD METHODS 2540 C (DISSOLVED) 1997, 2011

Batch R299042		SampType: DUP		Units mg/L				RPD Limit: 5				Date Analyzed
SampID: 21081266-013BDUP												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Total Dissolved Solids			20		454				444.0	2.23		
09/15/2021												

Batch R299042		SampType: DUP		Units mg/L					RPD Limit: 5		
SampID: 21081266-019BDUP											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids			20		386				374.0	3.16	09/15/2021



Quality Control Results

<http://www.teklabinc.com/>

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

STANDARD METHODS 2540 C (DISSOLVED) 1997, 2011

Batch	R299087	SampType:	DUP	Units mg/L					RPD Limit: 5		
SampID: 21081266-004BDUP											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Total Dissolved Solids		20		516				502.0	2.75	09/16/2021	

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch	R298922	SampType:	MBLK	Units mg/L							
SampID: MBLK											Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Total Dissolved Solids		20	S	42	16.00	0	262.5	-100	100	09/13/2021	
Total Dissolved Solids		20	S	30	16.00	0	187.5	-100	100	09/13/2021	
Total Dissolved Solids		20	S	58	16.00	0	362.5	-100	100	09/13/2021	

Batch	R298922	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	B	952	1000	0	95.2	90	110	09/13/2021	
Total Dissolved Solids		20	B	958	1000	0	95.8	90	110	09/13/2021	
Total Dissolved Solids		20	B	944	1000	0	94.4	90	110	09/13/2021	

Batch	R298970	SampType:	MBLK	Units mg/L							
SampID: MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/14/2021	
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/14/2021	
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/14/2021	

Batch	R298970	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		900	1000	0	90.0	90	110	09/14/2021	
Total Dissolved Solids		20		928	1000	0	92.8	90	110	09/14/2021	
Total Dissolved Solids		20		914	1000	0	91.4	90	110	09/14/2021	

Batch	R298970	SampType:	DUP	Units mg/L					RPD Limit: 5		
SampID: 21081266-010ADUP											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids			20		1070				1094	2.03	09/14/2021



Quality Control Results

<http://www.teklabinc.com/>

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R298970		SampType: DUP		Units mg/L				RPD Limit: 5			Date Analyzed	
SampID: 21081266-033ADUP												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Total Dissolved Solids			20		1130				1136	0.88		
09/14/2021												

Batch R299042		SampType: MBLK		Units mg/L							
SampID: MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/15/2021	
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/15/2021	
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/15/2021	

Batch R299042		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		918	1000	0	91.8	90	110	09/16/2021
Total Dissolved Solids		20		928	1000	0	92.8	90	110	09/15/2021
Total Dissolved Solids		20		924	1000	0	92.4	90	110	09/15/2021

Batch R299042		SampType: DUP		Units mg/L				RPD Limit: 5			Date Analyzed	
SampID: 21081266-030ADUP												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Total Dissolved Solids			20		488				486.0	0.41		
09/15/2021												

Batch R299042		SampType: DUP		Units mg/L				RPD Limit: 5				Date Analyzed
SampID: 21081266-037ADUP												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Total Dissolved Solids			20		446				434.0	2.73		
09/15/2021												

Batch R299087		SampType: MBLK		Units mg/L							
SampID: MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/16/2021	
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/16/2021	



Quality Control Results

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Client: Vistra Energy
Client Project: Hennepin GW Q3 2021

Work Order: 21081266
Report Date: 15-Oct-21

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R299087		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		912	1000	0	91.2	90	110	09/16/2021
Total Dissolved Solids		20		930	1000	0	93.0	90	110	09/16/2021

Batch R299087		SampType: DUP		Units mg/L				RPD Limit: 5			
SampID: 21081266-018ADUP											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids			20		522				548.0	4.86	09/16/2021

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

Batch R298862		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	09/13/2021	

Batch R298862		SampType: LCS		Units mg/L							
SampID: ICV/LCS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Ammonia (as N)		0.10		1.00	1.000	0	99.8	90	110	09/13/2021	

Batch R298862		SampType: MS		Units mg/L						
SampID: 21081266-008HMS										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10		1.97	2.000	0.06500	95.2	90	110	09/13/2021

Batch R298862		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 21081266-008HMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Ammonia (as N)			0.10		1.96	2.000	0.06500	94.9	1.968	0.25	09/13/2021

Batch R298862		SampType: MS		Units mg/L							
SampID: 21081266-035GMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Nitrogen, Ammonia (as N)		0.10		1.95	2.000	0	97.6	90	110	09/13/2021	



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch R298862		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed	
SampID: 21081266-035GMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Nitrogen, Ammonia (as N)			0.10		1.96	2.000	0	98.2	1.951	0.72	09/13/2021	

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

Batch R298804		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	09/10/2021	
Nitrogen, Nitrite (as N)		0.05		< 0.05	0.0250	0	0	-100	100	09/10/2021	

Batch R298804		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		1.66	1.520	0	109.5	90	110	09/10/2021	
Nitrogen, Nitrite (as N)		0.25		1.66	1.520	0	109.5	90	110	09/10/2021	

Batch R298804		SampType: MS		Units mg/L							
SampID: 21081266-001AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Nitrite (as N)		0.05			0.49	0.5000	0	98.2	85	115	09/10/2021

Batch R298804		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed	
SampID: 21081266-001AMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Nitrogen, Nitrite (as N)			0.05		0.52	0.5000	0	103.2	0.4910	4.97	09/10/2021	

Batch R298804		SampType: MS		Units mg/L							
SampID: 21081266-011AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Nitrogen, Nitrite (as N)		0.05		0.47	0.5000	0	93.4	85	115	09/10/2021	

Batch R298804		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed	
SampID: 21081266-011AMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Nitrogen, Nitrite (as N)			0.05		0.50	0.5000	0	99.2	0.4670	6.02	09/10/2021	



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch R298804 SampType: MS Units mg/L

SampID: 21081266-014AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		0.51	0.5000	0	101.2	85	115	09/10/2021

Batch R298804 SampType: MSD Units mg/L

RPD Limit: 10

SampID: 21081266-014AMSD

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	98.8	0.5060	2.40	09/10/2021

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

Batch R298842 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-Nitrite (as N)		0.050		< 0.050	0.0090	0	0	-100	100	09/10/2021

Batch R298842 SampType: LCS Units mg/L

SampID: ICB/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.050		0.496	0.5000	0	99.3	90	110	09/10/2021

Batch R298842 SampType: MS Units mg/L

SampID: 21081266-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		1.00		12.6	5.000	7.446	102.8	85	115	09/10/2021

Batch R298842 SampType: MSD Units mg/L

RPD Limit: 10

SampID: 21081266-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		1.00		12.8	5.000	7.446	106.1	12.59	1.29	09/10/2021

Batch R298842 SampType: MS Units mg/L

SampID: 21081266-011AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		1.00		7.56	5.000	2.594	99.3	85	115	09/10/2021



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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch R298842		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed
SampID: 21081266-011AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Nitrogen, Nitrate-Nitrite (as N)			1.00		7.68	5.000	2.594	101.8	7.558	1.63	09/10/2021

Batch R298842		SampType: MS		Units mg/L							
SampID: 21081266-019AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Nitrate-Nitrite (as N)		1.00		8.21	5.000	3.183	100.5	85	115	09/10/2021	

Batch R298842		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed	
SampID: 21081266-019AMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Nitrogen, Nitrate-Nitrite (as N)			1.00		8.17	5.000	3.183	99.8	8.206	0.38	09/10/2021	

SW-846 9012A (TOTAL)

Batch 181732		SampType: MBLK		Units mg/L							
SampID: MBLK 210913 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	09/14/2021	

Batch 181732		SampType: LCS		Units mg/L							
SampID: LCS 210913 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	96.9	90	110	09/14/2021	

Batch 181732		SampType: MS		Units mg/L							
SampID: 21081266-008FMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Cyanide		0.005		0.031	0.0250	0.006460	99.6	75	125	09/14/2021	

Batch 181732		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-008FMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide			0.005		0.031	0.0250	0.006460	99.5	0.03136	0.05	09/14/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9012A (TOTAL)

Batch 181840 SampType: MS Units mg/L

SampID: 21081266-019EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.026	0.0250	0	103.1	75	125	09/16/2021

Batch 181840 SampType: MSD Units mg/L

RPD Limit: 15

SampID: 21081266-019EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005		0.023	0.0250	0	90.1	0.02578	13.43	09/16/2021

Batch 181844 SampType: MBLK Units mg/L

SampID: MBLK 210915 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	09/16/2021

Batch 181844 SampType: LCS Units mg/L

SampID: LCS 210915 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	92.6	85	115	09/16/2021

Batch 181844 SampType: MS Units mg/L

SampID: 21081266-011FMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.025	0.0250	0	100.6	75	125	09/16/2021

Batch 181844 SampType: MSD Units mg/L

RPD Limit: 15

SampID: 21081266-011FMDS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005		0.026	0.0250	0	103.8	0.02515	3.13	09/16/2021

SW-846 9036 (DISSOLVED)

Batch R298928 SampType: MS Units mg/L

SampID: 21081266-012BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		20	E	103	40.00	64.61	95.1	85	115	09/14/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9036 (DISSOLVED)

Batch R298928		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 21081266-012BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			20	E	103	40.00	64.61	97.2	102.6	0.81	09/14/2021

Batch R299021		SampType: MS		Units mg/L							
SampID: 21081266-001CMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate		50		178	100.0	71.63	106.5	85	115	09/15/2021	

Batch R299021		SampType: MSD		Units mg/L				RPD Limit: 10				Date Analyzed
SampID: 21081266-001CMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate			50		176	100.0	71.63	104.4	178.2	1.21	09/15/2021	

Batch R299089		SampType: MS		Units mg/L							
SampID: 21081266-019BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		191	100.0	90.60	100.4	85	115	09/16/2021	

Batch R299089		SampType: MSD		Units mg/L		RPD Limit: 10					Date Analyzed	
SampID: 21081266-019BMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate			50		191	100.0	90.60	100.2	191.0	0.05	09/16/2021	

Batch R299276		SampType: MBLK		Units mg/L							
SampID: MB-R299276											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		< 10	7.620	0	0	-100	100	09/20/2021	

Batch R299276		SampType: LCS		Units mg/L							
SampID: LCS-R299276											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		20	20.00	0	98.5	90	110	09/20/2021	

Client: Vistra Energy
Client Project: Hennepin GW Q3 2021

Work Order: 21081266
Report Date: 15-Oct-21

SW-846 9036 (TOTAL)

Batch R298928		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		< 10	6.140	0	0	-100	100	09/13/2021	

Batch R298928		SampType: LCS		Units mg/L							
SampID: ICV/LCS											Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Sulfate		10		21	20.00	0	105.2	90	110	09/13/2021	

Batch R299021		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate		10		< 10	6.140	0	0	-100	100	09/15/2021	

Batch R299021		SampType: LCS		Units mg/L							
SampID: ICV/LCS											Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Sulfate		10		20	20.00	0	98.5	90	110	09/15/2021	

Batch R299021		SampType: MS		Units mg/L							
SampID: 21081266-002AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		183	100.0	86.35	96.2	85	115	09/16/2021	

Batch R299021		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 21081266-002AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			50		182	100.0	86.35	96.0	182.6	0.16	09/16/2021

Batch R299021		SampType: MS		Units mg/L							
SampID: 21081266-037AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		159	100.0	65.81	93.2	85	115	09/16/2021	

Batch R299021		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 21081266-037AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			50		165	100.0	65.81	98.9	159.0	3.50	09/16/2021



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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9036 (TOTAL)

Batch R299089		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		< 10	6.140	0	0	-100	100	09/16/2021	

Batch R299089		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	106.4	90	110	09/16/2021	

Batch R299089		SampType: MS		Units mg/L							
SampID: 21081266-004AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		189	100.0	84.17	104.4	85	115	09/16/2021	

Batch R299089		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 21081266-004AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			50		188	100.0	84.17	104.1	188.6	0.15	09/16/2021

Batch R299276		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate		10		< 10	6.140	0	0	-100	100	09/20/2021	

Batch R299276		SampType: LCS		Units mg/L							
SampID: ICB/LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		20	20.00	0	98.5	90	110	09/20/2021	

SW-846 9066 (TOTAL)

Batch R298976		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	09/15/2021	



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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9066 (TOTAL)

Batch R298976 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		0.050	0.0500	0	99.2	90	110	09/15/2021

Batch R298976 SampType: MS Units µg/L

SampID: 21081266-011GMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Phenols		5		53	50.00	0	106.4	85	115	09/15/2021

Batch R298976 SampType: MSD Units µg/L

SampID: 21081266-011GMSD

RPD Limit: 15

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Phenols		5		57	50.00	0	113.6	53.21	6.51	09/15/2021

SW-846 9214 (DISSOLVED)

Batch R298849 SampType: MS Units mg/L

SampID: 21081266-008CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		2.22	2.000	0.09100	106.4	75	125	09/13/2021

Batch R298849 SampType: MSD Units mg/L

SampID: 21081266-008CMSD

RPD Limit: 15

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		2.23	2.000	0.09100	106.9	2.218	0.49	09/13/2021

Batch R298849 SampType: MS Units mg/L

SampID: 21081266-016BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		2.34	2.000	0.2320	105.2	75	125	09/13/2021

Batch R298849 SampType: MSD Units mg/L

SampID: 21081266-016BMSD

RPD Limit: 15

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		2.33	2.000	0.2320	104.8	2.336	0.30	09/13/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9214 (DISSOLVED)

Batch R298849		SampType: MS		Units mg/L							
SampID: 21081266-043CMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		2.08	2.000	0	104.0	75	125	09/13/2021	

Batch R298849		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-043CMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.09	2.000	0	104.6	2.079	0.58	09/13/2021

SW-846 9214 (TOTAL)

Batch R298849		SampType: MBLK		Units mg/L							
SampID: MBLK										Date Analyzed	
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		< 0.10	0.0370	0	0	-100	100	09/13/2021	

Batch R298849		SampType: LCS		Units mg/L							
SampID: LCS										Date Analyzed	
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		0.94	1.000	0	94.5	90	110	09/13/2021	

Batch R298849		SampType: MS		Units mg/L							
SampID: 21081266-012AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.36	2.000	0.2520	105.4	75	125	09/13/2021	

Batch R298849		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-012AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.38	2.000	0.2520	106.4	2.360	0.84	09/13/2021

Batch R298849		SampType: MS		Units mg/L							
SampID: 21081266-021AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.22	2.000	0.1440	104.0	75	125	09/13/2021	



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9214 (TOTAL)

Batch R298849		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed
SampID: 21081266-021AMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Fluoride		0.10		2.24	2.000	0.1440	104.8	2.223	0.72	09/13/2021	

Batch R298849		SampType: MS		Units mg/L							
SampID: 21081266-035AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		2.26	2.000	0.1540	105.4	75	125	09/13/2021	

Batch R298849		SampType: MSD		Units mg/L				RPD Limit: 15				Date Analyzed
SampID: 21081266-035AMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Fluoride			0.10		2.27	2.000	0.1540	105.7	2.262	0.26	09/13/2021	

Batch R298849		SampType: MS		Units mg/L							
SampID: 21081266-043AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.08	2.000	0	104.0	75	125	09/13/2021	

Batch R298849		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed	
SampID: 21081266-043AMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Fluoride			0.10		2.11	2.000	0	105.6	2.080	1.57	09/13/2021	

SW-846 9251 (DISSOLVED)

Batch R298905		SampType: MS		Units mg/L							
SampID: 21081266-001CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		2	E	101	40.00	64.33	91.8	85	115	09/14/2021	

Batch R298905		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-001CMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			2	E	102	40.00	64.33	93.0	101.1	0.46	09/14/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9251 (DISSOLVED)

Batch R298905		SampType: MS		Units mg/L							
SampID: 21081266-012BMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		2	E	108	40.00	66.90	102.7	85	115	09/14/2021	

Batch R298905		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-012BMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Chloride		2	E	110	40.00	66.90	108.5	108.0	2.10	09/14/2021	

Batch R299022		SampType: MS		Units mg/L							
SampID: 21081266-019BMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		2	E	111	40.00	70.71	101.6	85	115	09/15/2021	

Batch R299022		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-019BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			2	E	112	40.00	70.71	104.4	111.4	0.98	09/15/2021

Batch R299022		SampType: MS		Units mg/L							
SampID: 21081266-023BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		5		193	100.0	98.87	94.3	85	115	09/16/2021	

Batch R299022		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-023BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			5		192	100.0	98.87	93.2	193.2	0.59	09/16/2021

SW-846 9251 (TOTAL)

Batch R298905		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		1		< 1	0.5000	0	0	-100	100	09/13/2021	
Chloride		1		< 1	0.5000	0	0	-100	100	09/13/2021	



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9251 (TOTAL)

Batch R298905		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		21	20.00	0	104.6	90	110	09/13/2021
Chloride		1		21	20.00	0	102.9	90	110	09/13/2021

Batch R299022		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	09/15/2021	

Batch R299022		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	98.6	90	110	09/15/2021	

Batch R299022		SampType: MS		Units mg/L							
SampID: 21081266-002AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		5		167	100.0	78.08	88.5	85	115	09/16/2021	

Batch R299022		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-002AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			5		165	100.0	78.08	87.0	166.6	0.92	09/16/2021

Batch R299022		SampType: MS		Units mg/L							
SampID: 21081266-037AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		5		161	100.0	75.03	86.4	85	115	09/16/2021	

Batch R299022		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-037AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			5		166	100.0	75.03	90.6	161.5	2.54	09/16/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 9251 (TOTAL)

Batch R299090 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	09/16/2021

Batch R299090 SampType: LCS Units mg/L

SampID: ICB/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		20	20.00	0	100.4	90	110	09/16/2021

Batch R299090 SampType: MS Units mg/L

SampID: 21081266-004AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		5		172	100.0	84.89	87.2	85	115	09/16/2021

Batch R299090 SampType: MSD Units mg/L

RPD Limit: 15

SampID: 21081266-004AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		5	S	170	100.0	84.89	84.9	172.1	1.32	09/16/2021

Batch R299278 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	09/20/2021

Batch R299278 SampType: LCS Units mg/L

SampID: ICB/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	09/20/2021

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

Batch 181824 SampType: MBLK Units mg/L

SampID: MBLK-181824

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	09/15/2021
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	09/15/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181824 SampType: LCS Units mg/L

SampleID: LCS-181824

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.39	2.500	0	95.4	85	115	09/15/2021
Magnesium		0.0500		2.48	2.500	0	99.4	85	115	09/15/2021

Batch 181824 SampType: MS Units mg/L

SampleID: 21081266-043EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.41	2.500	0	96.5	75	125	09/15/2021
Magnesium		0.0500		2.49	2.500	0	99.5	75	125	09/15/2021

Batch 181824 SampType: MSD Units mg/L

RPD Limit: 20

SampleID: 21081266-043EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		2.39	2.500	0	95.7	2.412	0.83	09/15/2021
Magnesium		0.0500		2.48	2.500	0	99.4	2.488	0.16	09/15/2021

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

Batch 181934 SampType: MBLK Units mg/L

SampleID: MBLK-181934

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	09/17/2021
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	09/17/2021
Potassium		0.100		< 0.100	0.0400	0	0	-100	100	09/20/2021
Sodium		0.0500		< 0.0500	0.0180	0	0	-100	100	09/17/2021

Batch 181934 SampType: LCS Units mg/L

SampleID: LCS-181934

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.32	2.500	0	92.8	85	115	09/17/2021
Magnesium		0.0500		2.68	2.500	0	107.3	85	115	09/17/2021
Potassium		0.100		2.76	2.500	0	110.6	85	115	09/20/2021
Sodium		0.0500		2.34	2.500	0	93.6	85	115	09/17/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181934 SampType: MS Units mg/L

SampleID: 21081266-009DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	197	2.500	190.8	240.4	75	125	09/17/2021
Magnesium		0.0500	S	58.8	2.500	54.81	158.6	75	125	09/17/2021
Potassium		0.100		5.84	2.500	3.038	112.3	75	125	09/20/2021
Sodium		0.0500	S	88.3	2.500	84.38	158.4	75	125	09/17/2021

Batch 181934 SampType: MSD Units mg/L

RPD Limit: 20

SampleID: 21081266-009DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	191	2.500	190.8	21.2	196.9	2.82	09/17/2021
Magnesium		0.0500		57.2	2.500	54.81	94.0	58.78	2.79	09/17/2021
Potassium		0.100		5.85	2.500	3.038	112.4	5.845	0.04	09/20/2021
Sodium		0.0500	S	85.8	2.500	84.38	58.8	88.34	2.86	09/17/2021

Batch 181934 SampType: MS Units mg/L

SampleID: 21081266-012CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	85.1	2.500	85.87	-31.2	75	125	09/17/2021
Magnesium		0.0500	S	34.8	2.500	33.48	52.7	75	125	09/17/2021
Potassium		0.100		6.81	2.500	4.415	95.7	75	125	09/20/2021
Sodium		0.0500	S	43.5	2.500	42.51	38.8	75	125	09/17/2021

Batch 181934 SampType: MSD Units mg/L

RPD Limit: 20

SampleID: 21081266-012CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	82.2	2.500	85.87	-146.0	85.09	3.43	09/17/2021
Magnesium		0.0500	S	33.6	2.500	33.48	6.0	34.80	3.41	09/17/2021
Potassium		0.100		6.82	2.500	4.415	96.2	6.806	0.20	09/20/2021
Sodium		0.0500	S	43.0	2.500	42.51	20.0	43.48	1.09	09/17/2021

Batch 181936 SampType: MBLK Units mg/L

SampleID: MBLK-181936

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	09/17/2021
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	09/17/2021
Potassium		0.100		< 0.100	0.0400	0	0	-100	100	09/17/2021
Sodium		0.0500		< 0.0500	0.0180	0	0	-100	100	09/17/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181936 SampType: LCS Units mg/L

SampleID: LCS-181936

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.62	2.500	0	104.7	85	115	09/17/2021
Magnesium		0.0500		2.69	2.500	0	107.5	85	115	09/17/2021
Potassium		0.100		2.53	2.500	0	101.3	85	115	09/17/2021
Sodium		0.0500		2.42	2.500	0	96.6	85	115	09/17/2021

Batch 181936 SampType: MS Units mg/L

SampleID: 21081266-041CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	117	2.500	118.6	-64.0	75	125	09/17/2021
Magnesium		0.0500	S	34.9	2.500	33.45	56.8	75	125	09/17/2021
Potassium		0.100	E	11.8	2.500	9.691	84.4	75	125	09/17/2021
Sodium		0.0500	S	59.1	2.500	58.64	18.0	75	125	09/17/2021

Batch 181936 SampType: MSD Units mg/L

RPD Limit: 20

SampleID: 21081266-041CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		121	2.500	118.6	104.0	117.0	3.53	09/17/2021
Magnesium		0.0500		36.1	2.500	33.45	105.2	34.87	3.41	09/17/2021
Potassium		0.100	E	12.3	2.500	9.691	103.2	11.80	3.91	09/17/2021
Sodium		0.0500		61.3	2.500	58.64	107.2	59.09	3.70	09/17/2021

Batch 181946 SampType: MBLK Units mg/L

SampleID: MBLK-181946

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	09/20/2021
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	09/20/2021
Potassium		0.100		< 0.100	0.0400	0	0	-100	100	09/20/2021
Sodium		0.0500		< 0.0500	0.0180	0	0	-100	100	09/20/2021

Batch 181946 SampType: LCS Units mg/L

SampleID: LCS-181946

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.66	2.500	0	106.2	85	115	09/20/2021
Magnesium		0.0500		2.77	2.500	0	110.9	85	115	09/20/2021
Potassium		0.100		2.58	2.500	0	103.2	85	115	09/20/2021
Sodium		0.0500		2.49	2.500	0	99.7	85	115	09/20/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181946 SampType: MS Units mg/L

SampleID: 21081266-005CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	93.6	2.500	89.29	173.2	75	125	09/20/2021
Magnesium		0.0500		35.1	2.500	32.31	112.4	75	125	09/20/2021
Potassium		0.500		12.5	2.500	9.945	103.4	75	125	09/20/2021
Sodium		0.0500	S	51.8	2.500	49.95	72.8	75	125	09/20/2021

Batch 181946 SampType: MSD Units mg/L

RPD Limit: 20

SampleID: 21081266-005CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	90.6	2.500	89.29	50.8	93.62	3.32	09/20/2021
Magnesium		0.0500	S	34.0	2.500	32.31	68.4	35.12	3.18	09/20/2021
Potassium		0.500		12.1	2.500	9.945	86.8	12.53	3.37	09/20/2021
Sodium		0.0500	S	49.9	2.500	49.95	-2.0	51.77	3.68	09/20/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181825		SampType: MBLK		Units mg/L							Date Analyzed	
SampID: MBLK-181825												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Aluminum		0.0250		< 0.0250	0.0125	0	0	-100	100	09/15/2021		
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	09/15/2021		
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	09/15/2021		
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	09/15/2021		
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	09/17/2021		
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	09/21/2021		
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	09/15/2021		
Chromium		0.0150		< 0.0150	0.0007	0	0	-100	100	09/15/2021		
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	09/15/2021		
Copper		0.0010		< 0.0010	0.0003	0	0	-100	100	09/15/2021		
Iron		0.0250		< 0.0250	0.0115	0	0	-100	100	09/15/2021		
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	09/15/2021		
Manganese		0.0020		< 0.0020	0.0008	0	0	-100	100	09/15/2021		
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	09/15/2021		
Nickel		0.0010		< 0.0010	0.0004	0	0	-100	100	09/15/2021		
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	09/17/2021		
Silver		0.0010		< 0.0010	0.0001	0	0	-100	100	09/15/2021		
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	09/15/2021		
Vanadium		0.0050		< 0.0050	0.0028	0	0	-100	100	09/15/2021		
Zinc		0.0150		< 0.0150	0.0059	0	0	-100	100	09/15/2021		



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181825		SampType: LCS		Units mg/L						
SampID: LCS-181825										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		0.0250		1.89	2.000	0	94.7	85	115	09/15/2021
Antimony		0.0010		0.457	0.5000	0	91.5	85	115	09/15/2021
Arsenic		0.0010		0.481	0.5000	0	96.3	85	115	09/15/2021
Barium		0.0010		2.15	2.000	0	107.5	85	115	09/15/2021
Beryllium		0.0010		0.0446	0.0500	0	89.3	85	115	09/17/2021
Boron		0.0250		0.457	0.5000	0	91.5	85	115	09/21/2021
Cadmium		0.0010		0.0434	0.0500	0	86.8	85	115	09/15/2021
Chromium		0.0150		0.173	0.2000	0	86.5	85	115	09/15/2021
Cobalt		0.0010		0.432	0.5000	0	86.4	85	115	09/15/2021
Copper		0.0010		0.218	0.2500	0	87.0	85	115	09/15/2021
Iron		0.0250		1.71	2.000	0	85.3	85	115	09/15/2021
Lead		0.0010		0.469	0.5000	0	93.9	85	115	09/15/2021
Manganese		0.0020		0.475	0.5000	0	95.1	85	115	09/15/2021
Molybdenum		0.0015		0.453	0.5000	0	90.6	85	115	09/16/2021
Nickel		0.0010		0.462	0.5000	0	92.4	85	115	09/16/2021
Selenium		0.0010		0.479	0.5000	0	95.7	85	115	09/17/2021
Silver		0.0010		0.0433	0.0500	0	86.6	85	115	09/15/2021
Thallium		0.0020		0.228	0.2500	0	91.2	85	115	09/15/2021
Vanadium		0.0050		0.453	0.5000	0	90.5	85	115	09/15/2021
Zinc		0.0150		0.434	0.5000	0	86.8	85	115	09/15/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181825 SampType: MS

Units mg/L

SampleID: 21081266-043EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		0.0250		1.79	2.000	0	89.6	75	125	09/15/2021
Antimony		0.0010		0.447	0.5000	0	89.3	75	125	09/15/2021
Arsenic		0.0010		0.466	0.5000	0	93.3	75	125	09/15/2021
Barium		0.0010		2.08	2.000	0	104.2	75	125	09/15/2021
Beryllium		0.0010		0.0416	0.0500	0	83.1	75	125	09/21/2021
Boron		0.0250		0.447	0.5000	0	89.3	75	125	09/21/2021
Cadmium		0.0010		0.0416	0.0500	0	83.1	75	125	09/15/2021
Chromium		0.0015		0.167	0.2000	0	83.4	75	125	09/15/2021
Cobalt		0.0010		0.413	0.5000	0	82.7	75	125	09/15/2021
Copper		0.0010		0.233	0.2500	0.001857	92.6	75	125	09/21/2021
Iron		0.0250		1.63	2.000	0	81.3	75	125	09/15/2021
Lead		0.0010		0.473	0.5000	0	94.7	75	125	09/15/2021
Manganese		0.0020		0.461	0.5000	0	92.1	75	125	09/15/2021
Molybdenum		0.0015		0.446	0.5000	0	89.2	75	125	09/21/2021
Nickel		0.0010		0.472	0.5000	0	94.4	75	125	09/16/2021
Selenium		0.0010		0.476	0.5000	0	95.1	75	125	09/17/2021
Silver		0.0010		0.0406	0.0500	0	81.2	75	125	09/15/2021
Thallium		0.0020		0.224	0.2500	0	89.8	75	125	09/15/2021
Vanadium		0.0050		0.438	0.5000	0	87.6	75	125	09/15/2021
Zinc		0.0150		0.423	0.5000	0	84.5	75	125	09/15/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181825		SampType: MSD		Units mg/L				RPD Limit: 20		
SampID: 21081266-043EMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Aluminum		0.0250		1.75	2.000	0	87.3	1.793	2.65	09/15/2021
Antimony		0.0010		0.462	0.5000	0	92.3	0.4467	3.30	09/15/2021
Arsenic		0.0010		0.471	0.5000	0	94.2	0.4663	1.06	09/15/2021
Barium		0.0010		2.11	2.000	0	105.5	2.084	1.24	09/15/2021
Beryllium		0.0010		0.0419	0.0500	0	83.7	0.04157	0.68	09/21/2021
Boron		0.0250		0.434	0.5000	0	86.8	0.4467	2.90	09/21/2021
Cadmium		0.0010		0.0424	0.0500	0	84.7	0.04156	1.90	09/15/2021
Chromium		0.0015		0.164	0.2000	0	82.2	0.1668	1.50	09/15/2021
Cobalt		0.0010		0.417	0.5000	0	83.4	0.4135	0.80	09/15/2021
Copper		0.0010		0.233	0.2500	0.001857	92.3	0.2333	0.27	09/21/2021
Iron		0.0250		1.67	2.000	0	83.5	1.626	2.75	09/15/2021
Lead		0.0010		0.470	0.5000	0	93.9	0.4733	0.80	09/15/2021
Manganese		0.0020		0.458	0.5000	0	91.6	0.4606	0.59	09/15/2021
Molybdenum		0.0015		0.440	0.5000	0	88.0	0.4462	1.39	09/21/2021
Nickel		0.0010		0.476	0.5000	0	95.2	0.4720	0.88	09/16/2021
Selenium		0.0010		0.477	0.5000	0	95.3	0.4756	0.20	09/17/2021
Silver		0.0010		0.0417	0.0500	0	83.4	0.04060	2.69	09/15/2021
Thallium		0.0020		0.229	0.2500	0	91.5	0.2244	1.96	09/15/2021
Vanadium		0.0050		0.437	0.5000	0	87.4	0.4382	0.25	09/15/2021
Zinc		0.0150		0.425	0.5000	0	85.0	0.4226	0.59	09/15/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181873		SampType: MBLK		Units mg/L							Date Analyzed	
SampID: MBLK-181873												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	09/21/2021		
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	09/18/2021		
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	09/18/2021		
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	09/18/2021		
Boron		0.0250		< 0.0250	0.0150	0	0	-100	100	09/21/2021		
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	09/18/2021		
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	09/18/2021		
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	09/18/2021		
Copper		0.0010		< 0.0010	0.0003	0	0	-100	100	09/18/2021		
Iron		0.0250		< 0.0250	0.0115	0	0	-100	100	09/18/2021		
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	09/18/2021		
Manganese		0.0020		< 0.0020	0.0008	0	0	-100	100	09/18/2021		
Nickel		0.0010		< 0.0010	0.0004	0	0	-100	100	09/18/2021		
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	09/18/2021		
Silver		0.0010		< 0.0010	0.0001	0	0	-100	100	09/18/2021		
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	09/23/2021		
Vanadium		0.0050		< 0.0050	0.0028	0	0	-100	100	09/21/2021		
Zinc		0.0150		< 0.0150	0.0059	0	0	-100	100	09/21/2021		



Quality Control Results

<http://www.teklabinc.com/>

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181873 SampType: LCS

Units mg/L

SampID: LCS-181873

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.444	0.5000	0	88.9	80	120	09/21/2021
Arsenic		0.0010		0.456	0.5000	0	91.1	80	120	09/18/2021
Barium		0.0010		1.94	2.000	0	97.0	80	120	09/18/2021
Beryllium		0.0010		0.0406	0.0500	0	81.2	80	120	09/18/2021
Boron		0.0250		0.461	0.5000	0	92.2	80	120	09/21/2021
Cadmium		0.0010		0.0422	0.0500	0	84.4	80	120	09/18/2021
Chromium		0.0015		0.166	0.2000	0	83.1	80	120	09/18/2021
Cobalt		0.0010		0.417	0.5000	0	83.5	80	120	09/18/2021
Copper		0.0010		0.216	0.2500	0	86.4	80	120	09/18/2021
Iron		0.0250		1.62	2.000	0	80.9	80	120	09/18/2021
Lead		0.0010		0.441	0.5000	0	88.1	80	120	09/18/2021
Manganese		0.0020		0.447	0.5000	0	89.5	80	120	09/18/2021
Nickel		0.0010		0.417	0.5000	0	83.4	80	120	09/18/2021
Selenium		0.0010		0.460	0.5000	0	91.9	80	120	09/18/2021
Silver		0.0010		0.0470	0.0500	0	94.1	80	120	09/18/2021
Thallium		0.0020		0.237	0.2500	0	94.8	80	120	09/23/2021
Vanadium		0.0050		0.449	0.5000	0	89.9	80	120	09/21/2021
Zinc		0.0150		0.434	0.5000	0	86.7	80	120	09/21/2021

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181873 **SampType:** MS

Units mg/L

SampID: 21081266-015DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.466	0.5000	0	93.2	75	125	09/21/2021
Arsenic		0.0010		0.484	0.5000	0	96.8	75	125	09/21/2021
Barium		0.0010		2.05	2.000	0.07375	98.9	75	125	09/21/2021
Beryllium		0.0010		0.0433	0.0500	0	86.6	75	125	09/21/2021
Boron		0.0250		0.564	0.5000	0.1175	89.3	75	125	09/21/2021
Cadmium		0.0010		0.0442	0.0500	0	88.3	75	125	09/21/2021
Chromium		0.0015		0.178	0.2000	0	88.8	75	125	09/21/2021
Cobalt		0.0010		0.452	0.5000	0.0001438	90.3	75	125	09/21/2021
Copper		0.0010		0.228	0.2500	0.002347	90.2	75	125	09/21/2021
Iron		0.0250		1.65	2.000	0	82.4	75	125	09/21/2021
Lead		0.0010		0.487	0.5000	0	97.5	75	125	09/21/2021
Manganese		0.0020		0.464	0.5000	0	92.8	75	125	09/21/2021
Nickel		0.0010		0.472	0.5000	0.001356	94.1	75	125	09/23/2021
Selenium		0.0010		0.453	0.5000	0	90.5	75	125	09/21/2021
Silver		0.0010		0.0402	0.0500	0	80.5	75	125	09/21/2021
Thallium		0.0020		0.249	0.2500	0	99.6	75	125	09/23/2021
Zinc		0.0150		0.433	0.5000	0	86.7	75	125	09/21/2021

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181873		SampType: MSD		Units mg/L			RPD Limit: 20			
SampleID: 21081266-015DMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.472	0.5000	0	94.4	0.4661	1.20	09/21/2021
Arsenic		0.0010		0.479	0.5000	0	95.9	0.4838	0.91	09/21/2021
Barium		0.0010		2.06	2.000	0.07375	99.5	2.053	0.58	09/21/2021
Beryllium		0.0010		0.0431	0.0500	0	86.1	0.04330	0.52	09/21/2021
Boron		0.0250		0.577	0.5000	0.1175	91.9	0.5640	2.28	09/21/2021
Cadmium		0.0010		0.0442	0.0500	0	88.3	0.04417	0.03	09/21/2021
Chromium		0.0015		0.177	0.2000	0	88.6	0.1775	0.22	09/21/2021
Cobalt		0.0010		0.456	0.5000	0.0001438	91.2	0.4516	1.03	09/21/2021
Copper		0.0010		0.227	0.2500	0.002347	89.8	0.2278	0.38	09/21/2021
Iron		0.0250		1.69	2.000	0	84.3	1.648	2.30	09/21/2021
Lead		0.0010		0.475	0.5000	0	95.0	0.4875	2.56	09/21/2021
Manganese		0.0020		0.462	0.5000	0	92.3	0.4638	0.45	09/21/2021
Nickel		0.0010		0.465	0.5000	0.001356	92.7	0.4716	1.40	09/23/2021
Selenium		0.0010		0.449	0.5000	0	89.8	0.4527	0.85	09/21/2021
Silver		0.0010		0.0401	0.0500	0	80.3	0.04023	0.26	09/21/2021
Thallium		0.0020		0.247	0.2500	0	98.9	0.2489	0.64	09/23/2021
Zinc		0.0150		0.432	0.5000	0	86.3	0.4334	0.43	09/21/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181873		SampType: MS		Units mg/L							Date Analyzed	
SampID: 21081266-020DMS												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Antimony		0.0010		0.475	0.5000	0.001452	94.7	75	125			
Arsenic		0.0010		0.484	0.5000	0.001151	96.6	75	125			
Barium		0.0010		2.09	2.000	0.07700	100.5	75	125			
Beryllium		0.0010		0.0429	0.0500	0	85.7	75	125			
Boron		0.0250	S	4.35	0.5000	4.000	69.3	75	125			
Cadmium		0.0010		0.0445	0.0500	0	88.9	75	125			
Chromium		0.0015		0.179	0.2000	0.001370	88.9	75	125			
Cobalt		0.0010		0.457	0.5000	0.0004484	91.3	75	125			
Copper		0.0010		0.229	0.2500	0.0007152	91.2	75	125			
Iron		0.0250		1.89	2.000	0.2403	82.7	75	125			
Lead		0.0010		0.492	0.5000	0	98.5	75	125			
Manganese		0.0020		0.587	0.5000	0.1225	92.9	75	125			
Nickel		0.0010		0.489	0.5000	0.001956	97.5	75	125			
Selenium		0.0010		0.470	0.5000	0.01707	90.5	75	125			
Silver		0.0010		0.0405	0.0500	0	80.9	75	125			
Thallium		0.0020		0.244	0.2500	0	97.5	75	125			
Zinc		0.0150		0.441	0.5000	0	88.2	75	125			



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181873		SampType: MSD		Units mg/L			RPD Limit: 20			
SampID: 21081266-020DMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.486	0.5000	0.001452	97.0	0.4752	2.29	09/21/2021
Arsenic		0.0010		0.487	0.5000	0.001151	97.2	0.4842	0.61	09/21/2021
Barium		0.0010		2.11	2.000	0.07700	101.7	2.087	1.14	09/21/2021
Beryllium		0.0010		0.0441	0.0500	0	88.1	0.04286	2.74	09/21/2021
Boron		0.0250	S	4.33	0.5000	4.000	65.1	4.347	0.49	09/21/2021
Cadmium		0.0010		0.0452	0.0500	0	90.4	0.04446	1.71	09/21/2021
Chromium		0.0015		0.182	0.2000	0.001370	90.2	0.1792	1.42	09/21/2021
Cobalt		0.0010		0.462	0.5000	0.0004484	92.3	0.4571	1.06	09/21/2021
Copper		0.0010		0.232	0.2500	0.0007152	92.7	0.2288	1.58	09/21/2021
Iron		0.0250		2.05	2.000	0.2403	90.6	1.894	7.97	09/21/2021
Lead		0.0010		0.501	0.5000	0	100.2	0.4925	1.67	09/21/2021
Manganese		0.0020		0.593	0.5000	0.1225	94.2	0.5871	1.08	09/21/2021
Nickel		0.0010		0.489	0.5000	0.001956	97.4	0.4894	0.07	09/23/2021
Selenium		0.0010		0.474	0.5000	0.01707	91.5	0.4695	1.05	09/21/2021
Silver		0.0010		0.0406	0.0500	0	81.2	0.04045	0.32	09/21/2021
Thallium		0.0020		0.249	0.2500	0	99.5	0.2437	2.01	09/23/2021
Zinc		0.0150		0.444	0.5000	0	88.9	0.4408	0.79	09/21/2021

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181874		SampType: MBLK		Units mg/L							Date Analyzed	
SampID: MBLK-181874												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Aluminum		0.0250		< 0.0250	0.0125	0	0	-100	100	09/18/2021		
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	09/18/2021		
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	09/18/2021		
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	09/18/2021		
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	09/18/2021		
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	09/18/2021		
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	09/18/2021		
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	09/18/2021		
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	09/18/2021		
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	09/18/2021		
Copper		0.0010		< 0.0010	0.0003	0	0	-100	100	09/18/2021		
Iron		0.0250		< 0.0250	0.0040	0	0	-100	100	09/18/2021		
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	09/18/2021		
Manganese		0.0020		< 0.0020	0.0008	0	0	-100	100	09/18/2021		
Nickel		0.0010		< 0.0010	0.0004	0	0	-100	100	09/18/2021		
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	09/18/2021		
Silver		0.0010		< 0.0010	0.0001	0	0	-100	100	09/18/2021		
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	09/17/2021		
Vanadium		0.0050		< 0.0050	0.0028	0	0	-100	100	09/17/2021		
Zinc		0.0150		< 0.0150	0.0059	0	0	-100	100	09/17/2021		

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181874 **SampType:** LCS

Units mg/L

SampleID: LCS-181874

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		0.0250		1.95	2.000	0	97.4	80	120	09/18/2021
Antimony		0.0010		0.471	0.5000	0	94.3	80	120	09/18/2021
Arsenic		0.0010		0.488	0.5000	0	97.7	80	120	09/18/2021
Arsenic		0.0010		0.480	0.5000	0	96.0	80	120	09/18/2021
Barium		0.0010		2.00	2.000	0	99.9	80	120	09/18/2021
Beryllium		0.0010		0.0418	0.0500	0	83.7	80	120	09/18/2021
Boron		0.0250		0.436	0.5000	0	87.3	80	120	09/18/2021
Cadmium		0.0010		0.0425	0.0500	0	85.0	80	120	09/18/2021
Chromium		0.0015		0.174	0.2000	0	86.8	80	120	09/18/2021
Cobalt		0.0010		0.442	0.5000	0	88.4	80	120	09/18/2021
Copper		0.0010		0.226	0.2500	0	90.5	80	120	09/18/2021
Iron		0.0250		1.69	2.000	0	84.4	80	120	09/18/2021
Lead		0.0010		0.461	0.5000	0	92.3	80	120	09/18/2021
Manganese		0.0020		0.470	0.5000	0	93.9	80	120	09/18/2021
Nickel		0.0010		0.438	0.5000	0	87.5	80	120	09/18/2021
Selenium		0.0010		0.473	0.5000	0	94.5	80	120	09/18/2021
Silver		0.0010		0.0471	0.0500	0	94.2	80	120	09/18/2021
Thallium		0.0020		0.223	0.2500	0	89.1	80	120	09/17/2021
Vanadium		0.0050		0.465	0.5000	0	93.0	80	120	09/17/2021
Zinc		0.0150		0.468	0.5000	0	93.7	80	120	09/17/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181874 SampType: MS

Units mg/L

SampleID: 21081266-036EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.481	0.5000	0	96.2	75	125	09/20/2021
Arsenic		0.0010		0.496	0.5000	0	99.2	75	125	09/20/2021
Barium		0.0010		2.09	2.000	0.06081	101.6	75	125	09/18/2021
Beryllium		0.0010		0.0432	0.0500	0	86.4	75	125	09/18/2021
Boron		0.0250		0.671	0.5000	0.2236	89.5	75	125	09/18/2021
Cadmium		0.0010		0.0446	0.0500	0.0005411	88.1	75	125	09/18/2021
Chromium		0.0015		0.176	0.2000	0	87.8	75	125	09/18/2021
Cobalt		0.0010		0.442	0.5000	0.0005000	88.2	75	125	09/18/2021
Copper		0.0010		0.224	0.2500	0.001851	88.9	75	125	09/18/2021
Iron		0.0250		1.74	2.000	0	87.0	75	125	09/18/2021
Lead		0.0010		0.472	0.5000	0	94.4	75	125	09/18/2021
Manganese		0.0020		0.474	0.5000	0	94.8	75	125	09/18/2021
Nickel		0.0010		0.438	0.5000	0.003447	86.9	75	125	09/18/2021
Selenium		0.0010		0.472	0.5000	0	94.3	75	125	09/20/2021
Silver		0.0010		0.0490	0.0500	0	97.9	75	125	09/18/2021
Thallium		0.0020		0.230	0.2500	0	91.9	75	125	09/17/2021
Vanadium		0.0050		0.471	0.5000	0	94.2	75	125	09/17/2021
Zinc		0.0150		0.461	0.5000	0	92.2	75	125	09/17/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181874		SampType: MSD		Units mg/L				RPD Limit: 20		
SampID: 21081266-036EMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.482	0.5000	0	96.4	0.4809	0.19	09/20/2021
Arsenic		0.0010		0.494	0.5000	0	98.7	0.4959	0.46	09/20/2021
Barium		0.0010		2.09	2.000	0.06081	101.2	2.093	0.36	09/18/2021
Beryllium		0.0010		0.0431	0.0500	0	86.2	0.04322	0.27	09/18/2021
Boron		0.0250		0.688	0.5000	0.2236	92.9	0.6711	2.47	09/18/2021
Cadmium		0.0010		0.0440	0.0500	0.0005411	86.9	0.04458	1.34	09/18/2021
Chromium		0.0015		0.171	0.2000	0	85.3	0.1755	2.88	09/18/2021
Cobalt		0.0010		0.437	0.5000	0.0005000	87.2	0.4416	1.14	09/18/2021
Copper		0.0010		0.221	0.2500	0.001851	87.5	0.2241	1.60	09/18/2021
Iron		0.0250		1.72	2.000	0	86.2	1.740	0.99	09/18/2021
Lead		0.0010		0.458	0.5000	0	91.7	0.4719	2.94	09/18/2021
Manganese		0.0020		0.468	0.5000	0	93.6	0.4742	1.29	09/18/2021
Nickel		0.0010		0.431	0.5000	0.003447	85.5	0.4378	1.52	09/18/2021
Selenium		0.0010		0.471	0.5000	0	94.1	0.4717	0.24	09/20/2021
Silver		0.0010		0.0483	0.0500	0	96.6	0.04895	1.36	09/18/2021
Thallium		0.0020		0.228	0.2500	0	91.4	0.2297	0.51	09/17/2021
Vanadium		0.0050		0.466	0.5000	0	93.1	0.4712	1.19	09/17/2021
Zinc		0.0150		0.462	0.5000	0	92.3	0.4611	0.12	09/17/2021

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

Batch 181826		SampType: MBLK		Units mg/L							Date Analyzed
SampID: MBLK-181826											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	09/16/2021	
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	09/16/2021	
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	09/16/2021	
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	09/16/2021	
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	09/17/2021	
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	09/16/2021	
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	09/16/2021	
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	09/16/2021	
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	09/16/2021	
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	09/16/2021	
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	09/16/2021	
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	09/16/2021	
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	09/17/2021	



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181826 SampType: LCS Units mg/L

SampID: LCS-181826

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.498	0.5000	0	99.6	85	115	09/16/2021
Arsenic		0.0010		0.531	0.5000	0	106.2	85	115	09/16/2021
Barium		0.0010		2.06	2.000	0	102.9	85	115	09/16/2021
Beryllium		0.0010		0.0502	0.0500	0	100.3	85	115	09/16/2021
Boron		0.0250		0.520	0.5000	0	104.1	85	115	09/20/2021
Cadmium		0.0010		0.0551	0.0500	0	110.2	85	115	09/16/2021
Chromium		0.0015		0.205	0.2000	0	102.5	85	115	09/16/2021
Cobalt		0.0010		0.510	0.5000	0	101.9	85	115	09/16/2021
Lead		0.0010		0.525	0.5000	0	105.0	85	115	09/16/2021
Lithium	*	0.0030		0.526	0.5000	0	105.2	85	115	09/16/2021
Molybdenum		0.0015		0.495	0.5000	0	99.0	85	115	09/16/2021
Selenium		0.0010		0.455	0.5000	0	91.1	85	115	09/16/2021
Thallium		0.0020		0.235	0.2500	0	93.9	85	115	09/16/2021

Batch 181826 SampType: MS Units mg/L

SampID: 21081266-041CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.470	0.5000	0	93.9	75	125	09/16/2021
Arsenic		0.0010		0.496	0.5000	0.0006075	99.0	75	125	09/16/2021
Barium		0.0010		2.05	2.000	0.09765	97.8	75	125	09/16/2021
Beryllium		0.0010		0.0503	0.0500	0	100.7	75	125	09/16/2021
Boron		0.0250		1.22	0.5000	0.6961	104.7	75	125	09/20/2021
Cadmium		0.0010		0.0487	0.0500	0.001544	94.4	75	125	09/16/2021
Chromium		0.0015		0.194	0.2000	0	96.9	75	125	09/16/2021
Cobalt		0.0010		0.486	0.5000	0.006753	95.9	75	125	09/16/2021
Lead		0.0010		0.488	0.5000	0	97.7	75	125	09/16/2021
Lithium	*	0.0030		0.540	0.5000	0.01967	104.1	75	125	09/21/2021
Molybdenum		0.0015		0.529	0.5000	0.03575	98.7	75	125	09/16/2021
Selenium		0.0010		0.446	0.5000	0	89.2	75	125	09/16/2021
Thallium		0.0020		0.234	0.2500	0	93.7	75	125	09/16/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181826		SampType: MSD		Units mg/L				RPD Limit: 20		
SampleID: 21081266-041CMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.491	0.5000	0	98.1	0.4695	4.37	09/16/2021
Arsenic		0.0010		0.515	0.5000	0.0006075	102.8	0.4957	3.73	09/16/2021
Barium		0.0010		2.13	2.000	0.09765	101.7	2.054	3.65	09/16/2021
Beryllium		0.0010		0.0517	0.0500	0	103.3	0.05033	2.64	09/16/2021
Boron		0.0250		1.26	0.5000	0.6961	112.8	1.219	3.29	09/20/2021
Cadmium		0.0010		0.0507	0.0500	0.001544	98.3	0.04874	3.93	09/16/2021
Chromium		0.0015		0.201	0.2000	0	100.7	0.1937	3.92	09/16/2021
Cobalt		0.0010		0.506	0.5000	0.006753	99.8	0.4864	3.92	09/16/2021
Lead		0.0010		0.505	0.5000	0	101.0	0.4883	3.39	09/16/2021
Lithium	*	0.0030		0.537	0.5000	0.01967	103.4	0.5404	0.71	09/21/2021
Molybdenum		0.0015		0.558	0.5000	0.03575	104.4	0.5294	5.19	09/16/2021
Selenium		0.0010		0.465	0.5000	0	93.0	0.4458	4.25	09/16/2021
Thallium		0.0020		0.246	0.2500	0	98.5	0.2343	4.96	09/16/2021

Batch 181937		SampType: MBLK		Units mg/L						
SampleID: MBLK-181937										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	09/21/2021
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	09/21/2021
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	09/21/2021
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	09/21/2021
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	09/21/2021
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	09/21/2021
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	09/21/2021
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	09/21/2021
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	09/21/2021
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	09/21/2021
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	09/21/2021
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	09/21/2021
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	09/23/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181937 SampType: LCS Units mg/L

SampleID: LCS-181937

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.495	0.5000	0	99.1	80	120	09/23/2021
Arsenic		0.0010		0.530	0.5000	0	105.9	80	120	09/21/2021
Barium		0.0010		2.17	2.000	0	108.5	80	120	09/21/2021
Beryllium		0.0010		0.0518	0.0500	0	103.5	80	120	09/21/2021
Boron		0.0250		0.507	0.5000	0	101.4	80	120	09/21/2021
Cadmium		0.0010		0.0575	0.0500	0	114.9	80	120	09/21/2021
Chromium		0.0015		0.205	0.2000	0	102.4	80	120	09/21/2021
Cobalt		0.0010		0.529	0.5000	0	105.7	80	120	09/21/2021
Lead		0.0010		0.508	0.5000	0	101.6	80	120	09/21/2021
Lithium	*	0.0030		0.533	0.5000	0	106.6	80	120	09/21/2021
Molybdenum		0.0015		0.506	0.5000	0	101.2	80	120	09/21/2021
Selenium		0.0010		0.493	0.5000	0	98.7	80	120	09/21/2021
Thallium		0.0020		0.273	0.2500	0	109.2	80	120	09/23/2021

Batch 181937 SampType: MS Units mg/L

SampleID: 21081266-009DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.523	0.5000	0	104.5	75	125	09/24/2021
Arsenic		0.0010		0.535	0.5000	0	107.1	75	125	09/24/2021
Barium		0.0010		2.21	2.000	0.08785	106.3	75	125	09/24/2021
Beryllium		0.0010		0.0548	0.0500	0	109.7	75	125	09/24/2021
Boron		0.0250		0.650	0.5000	0.1137	107.3	75	125	09/27/2021
Cadmium		0.0010		0.0493	0.0500	0.0002488	98.2	75	125	09/24/2021
Chromium		0.0015		0.199	0.2000	0	99.5	75	125	09/24/2021
Cobalt		0.0010		0.494	0.5000	0.004875	97.8	75	125	09/24/2021
Lead		0.0010		0.513	0.5000	0	102.6	75	125	09/24/2021
Lithium	*	0.0030		0.566	0.5000	0.01313	110.5	75	125	09/24/2021
Molybdenum		0.0015		0.497	0.5000	0.001136	99.2	75	125	09/24/2021
Selenium		0.0010		0.498	0.5000	0	99.5	75	125	09/24/2021
Thallium		0.0020		0.251	0.2500	0	100.6	75	125	09/24/2021



Quality Control Results

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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181937		SampType: MSD		Units mg/L				RPD Limit: 20			
SampID: 21081266-009DMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Antimony		0.0010		0.529	0.5000	0	105.8	0.5227	1.17	09/24/2021	
Arsenic		0.0010		0.536	0.5000	0	107.3	0.5354	0.17	09/24/2021	
Barium		0.0010		2.24	2.000	0.08785	107.4	2.214	1.03	09/24/2021	
Beryllium		0.0010		0.0543	0.0500	0	108.7	0.05484	0.92	09/24/2021	
Boron		0.0250		0.675	0.5000	0.1137	112.3	0.6502	3.76	09/27/2021	
Cadmium		0.0010		0.0499	0.0500	0.0002488	99.4	0.04933	1.19	09/24/2021	
Chromium		0.0015		0.199	0.2000	0	99.3	0.1989	0.18	09/24/2021	
Cobalt		0.0010		0.494	0.5000	0.004875	97.8	0.4937	0.01	09/24/2021	
Lead		0.0010		0.514	0.5000	0	102.9	0.5131	0.24	09/24/2021	
Lithium	*	0.0030		0.556	0.5000	0.01313	108.5	0.5659	1.80	09/24/2021	
Molybdenum		0.0015		0.497	0.5000	0.001136	99.2	0.4974	0.06	09/24/2021	
Selenium		0.0010		0.502	0.5000	0	100.4	0.4977	0.87	09/24/2021	
Thallium		0.0020		0.253	0.2500	0	101.4	0.2514	0.79	09/24/2021	

Batch 181937		SampType: MS		Units mg/L						
SampID: 21081266-012CMS										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		0.0010		0.534	0.5000	0	106.8	75	125	09/24/2021
Barium		0.0010		2.18	2.000	0.05559	106.0	75	125	09/24/2021
Boron		0.0250		0.761	0.5000	0.2242	107.4	75	125	09/27/2021
Cadmium		0.0010		0.0486	0.0500	0	97.2	75	125	09/24/2021
Chromium		0.0015		0.198	0.2000	0.0009706	98.5	75	125	09/24/2021
Cobalt		0.0010		0.482	0.5000	0	96.4	75	125	09/24/2021
Lead		0.0010		0.506	0.5000	0	101.2	75	125	09/24/2021
Lithium	*	0.0030		0.548	0.5000	0.01209	107.1	75	125	09/24/2021
Molybdenum		0.0015		0.515	0.5000	0.02598	97.9	75	125	09/24/2021
Selenium		0.0010		0.502	0.5000	0.0006941	100.3	75	125	09/24/2021

Client: Vistra Energy

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

Batch 181937		SampType: MSD		Units mg/L				RPD Limit: 20		
SampleID: 21081266-012CMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic		0.0010		0.531	0.5000	0	106.3	0.5339	0.49	09/24/2021
Barium		0.0010		2.16	2.000	0.05559	105.1	2.175	0.84	09/24/2021
Boron		0.0250		0.770	0.5000	0.2242	109.1	0.7611	1.11	09/27/2021
Cadmium		0.0010		0.0490	0.0500	0	98.0	0.04858	0.82	09/24/2021
Chromium		0.0015		0.198	0.2000	0.0009706	98.6	0.1980	0.09	09/24/2021
Cobalt		0.0010		0.484	0.5000	0	96.9	0.4822	0.43	09/24/2021
Lead		0.0010		0.506	0.5000	0	101.3	0.5061	0.05	09/24/2021
Lithium	*	0.0030		0.539	0.5000	0.01209	105.4	0.5478	1.58	09/24/2021
Molybdenum		0.0015		0.514	0.5000	0.02598	97.5	0.5153	0.34	09/24/2021
Selenium		0.0010		0.505	0.5000	0.0006941	100.8	0.5022	0.49	09/24/2021

Batch 181947		SampType: MBLK		Units mg/L							
SampleID: MBLK-181947											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	09/21/2021	
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	09/21/2021	
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	09/21/2021	
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	09/21/2021	
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	09/21/2021	
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	09/21/2021	
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	09/21/2021	
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	09/21/2021	
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	09/21/2021	
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	09/21/2021	
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	09/21/2021	
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	09/21/2021	
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	09/23/2021	



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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

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

Batch 181947 SampType: LCS Units mg/L

SampID: LCS-181947

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.528	0.5000	0	105.7	80	120	09/21/2021
Arsenic		0.0010		0.519	0.5000	0	103.7	80	120	09/21/2021
Barium		0.0010		2.20	2.000	0	110.2	80	120	09/21/2021
Beryllium		0.0010		0.0459	0.0500	0	91.8	80	120	09/21/2021
Boron		0.0250		0.460	0.5000	0	92.0	80	120	09/21/2021
Cadmium		0.0010		0.0491	0.0500	0	98.2	80	120	09/21/2021
Chromium		0.0015		0.193	0.2000	0	96.6	80	120	09/21/2021
Cobalt		0.0010		0.496	0.5000	0	99.2	80	120	09/21/2021
Lead		0.0010		0.534	0.5000	0	106.9	80	120	09/21/2021
Lithium	*	0.0030		0.471	0.5000	0	94.1	80	120	09/21/2021
Molybdenum		0.0015		0.511	0.5000	0	102.1	80	120	09/21/2021
Selenium		0.0010		0.490	0.5000	0	98.0	80	120	09/21/2021
Thallium		0.0020		0.257	0.2500	0	102.8	80	120	09/23/2021

Batch 181947 SampType: MS Units mg/L

SampID: 21081266-005CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.519	0.5000	0	103.8	75	125	09/21/2021
Arsenic		0.0010		0.520	0.5000	0.001073	103.7	75	125	09/21/2021
Barium		0.0010		2.21	2.000	0.05243	108.1	75	125	09/21/2021
Boron		0.0250		1.19	0.5000	0.7149	95.9	75	125	09/21/2021
Cadmium		0.0010		0.0478	0.0500	0.0002589	95.2	75	125	09/21/2021
Chromium		0.0015		0.189	0.2000	0	94.4	75	125	09/21/2021
Cobalt		0.0010		0.480	0.5000	0.0002782	95.9	75	125	09/21/2021
Lead		0.0010		0.519	0.5000	0	103.8	75	125	09/21/2021
Lithium	*	0.0030		0.499	0.5000	0.04025	91.7	75	125	09/21/2021
Molybdenum		0.0015		0.530	0.5000	0.01926	102.2	75	125	09/21/2021
Selenium		0.0010		0.494	0.5000	0.003437	98.2	75	125	09/21/2021



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Report Date: 15-Oct-21

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

Batch 181947		SampType: MSD		Units mg/L				RPD Limit: 20		
SampID: 21081266-005CMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.507	0.5000	0	101.5	0.5188	2.22	09/21/2021
Arsenic		0.0010		0.512	0.5000	0.001073	102.2	0.5196	1.44	09/21/2021
Barium		0.0010		2.19	2.000	0.05243	106.9	2.214	1.09	09/21/2021
Boron		0.0250		1.15	0.5000	0.7149	86.4	1.194	4.05	09/21/2021
Cadmium		0.0010		0.0469	0.0500	0.0002589	93.2	0.04785	2.07	09/21/2021
Chromium		0.0015		0.191	0.2000	0	95.6	0.1888	1.27	09/21/2021
Cobalt		0.0010		0.479	0.5000	0.0002782	95.8	0.4797	0.14	09/21/2021
Lead		0.0010		0.523	0.5000	0	104.7	0.5188	0.88	09/21/2021
Lithium	*	0.0030		0.498	0.5000	0.04025	91.5	0.4988	0.18	09/21/2021
Molybdenum		0.0015		0.507	0.5000	0.01926	97.6	0.5302	4.41	09/21/2021
Selenium		0.0010		0.483	0.5000	0.003437	95.9	0.4944	2.36	09/21/2021

SW-846 7470A (DISSOLVED)

Batch 181944		SampType: MS		Units mg/L							
SampID: 21081266-006CMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		0.00490	0.0050	0	98.0	75	125	09/17/2021	

Batch 181944		SampType: MSD		Units mg/L				RPD Limit: 15				Date Analyzed
SampID: 21081266-006CMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Mercury			0.00020		0.00469	0.0050	0	93.7	0.004901	4.46	09/17/2021	

Batch 181944		SampType: MS		Units mg/L							Date Analyzed
SampID: 21081266-009EMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		0.00511	0.0050	0	102.2	75	125		

Batch 181944		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed
SampID: 21081266-009EMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Mercury			0.00020		0.00499	0.0050	0	99.7	0.005112	2.50	09/17/2021



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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 7470A (DISSOLVED)

Batch 181945		SampType: MS		Units mg/L							
SampID: 21081266-020DMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		0.00503	0.0050	0	100.6	75	125	09/17/2021	

Batch 181945		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-020DMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.00020		0.00517	0.0050	0	103.5	0.005030	2.83	09/17/2021

SW-846 7470A (TOTAL)

Batch 181879		SampType: MBLK		Units mg/L							
SampID: MBLK-181879											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	09/16/2021	

Batch 181879		SampType: LCS		Units mg/L							
SampID: LCS-181879											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		0.00492	0.0050	0	98.4	85	115	09/16/2021	

Batch 181879		SampType: MS		Units mg/L							
SampID: 21081266-007DMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00493	0.0050	0	98.5	75	125	09/16/2021	

Batch 181879		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-007DMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.00020		0.00485	0.0050	0	96.9	0.004927	1.63	09/16/2021

Batch 181879		SampType: MS		Units mg/L							
SampID: 21081266-041CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00501	0.0050	0	100.2	75	125	09/16/2021	



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Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

SW-846 7470A (TOTAL)

Batch 181879		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed
SampID: 21081266-041CMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Mercury		0.00020		0.00494	0.0050	0	98.7	0.005009	1.48	09/16/2021	

Batch 181944		SampType: MBLK		Units mg/L							Date Analyzed
SampID: MBLK-181944											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	09/18/2021	
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	09/18/2021	

Batch 181944		SampType: LCS		Units mg/L							
SampID: LCS-181944											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		0.00497	0.0050	0	99.3	85	115	09/17/2021	

Batch 181945		SampType: MBLK		Units mg/L							
SampID: MBLK-181945											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	09/17/2021	

Batch 181945		SampType: LCS		Units mg/L							Date Analyzed
SampID: LCS-181945											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		0.00505	0.0050	0	101.0	85	115	09/17/2021	

Batch 181945		SampType: MS		Units mg/L							
SampID: 21081266-032CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00468	0.0050	0	93.7	75	125	09/17/2021	

Batch 181945		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 21081266-032CMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.00020		0.00459	0.0050	0	91.9	0.004684	1.94	09/17/2021



Receiving Check List

<http://www.teklabinc.com/>

Client: Vistra Energy

Work Order: 21081266

Client Project: Hennepin GW Q3 2021

Report Date: 15-Oct-21

Carrier: Joe Riley

Received By: MEK

Completed by:

On:

10-Sep-21

Mary E. Kemp

Reviewed by:

On:

10-Sep-21

Elizabeth A. Hurley

Pages to follow: Chain of custody

Extra pages included

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐	Temp °C 2.8
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 – 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 #77366/75846. - ERH/MKemp - 9/10/2021 4:45:11 PM

Additional nitric acid (78237) was needed in 02, 08, 08D, 32, and 51, and additional sodium hydroxide (78386) was needed in all samples for cyanide analysis but the Field Blank upon arrival at the laboratory. - ERH/MKemp - 9/10/2021 4:45:27 PM

CHAIN OF CUSTODY

Pg 1 of 1 Workorder # 21081266

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

HS^{ok} vial 10

Client: <u>Vistra Energy</u> Address: <u>1500 Eastport Plaza Drive</u> City/State/Zip: <u>Collinsville, IL 62234</u> Contact: <u>Brian Voelker</u> Phone: <u>(217) 412-6605</u> Email: <u>brian.voelker@vistraenergy.com</u> Fax: _____				Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE <u>2.8</u> °C LTG# <u>5</u> Preserved in: ☒ LAB ☐ FIELD <u>FOR LAB USE ONLY</u> LAB NOTES: <u>ANDs (78237) to 02, 08, 08D, 32, 51</u> <u>NaOH (78380) to all but FB 77300 / 75840</u> Client Comments: _____ Field measurements required: pH, conductivity, temperature, ORP, DO, turbidity, and depths Metals determined by program requirements.																																																																																																																																																																																																																																																																																																																				
Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☒ No Are these samples known to be hazardous? ☐ Yes ☒ No Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in the comment section: ☐ Yes ☒ No				PROJECT NAME/NUMBER <u>Hennepin GW Q3 2021</u> SAMPLE COLLECTOR'S NAME <u>J. RILEY J. WILSON</u>																																																																																																																																																																																																																																																																																																																				
RESULTS REQUESTED ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other _____ ☐ 3 Day (50% Surcharge)		BILLING INSTRUCTIONS <u>Vistra PO#s</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="4"># and Type of Containers</th> <th colspan="12">INDICATE ANALYSIS REQUESTED</th> </tr> <tr> <th>UNP</th> <th>HNO3</th> <th>NaOH</th> <th>H2SO4</th> <th>HCL</th> <th>MeOH</th> <th>NaHSO4</th> <th>TSP</th> <th>Other</th> <th>(T) Cl, SO4, F-</th> <th>Total TDS</th> <th>Diss. Cl, SO4</th> <th>Diss. F-</th> <th>Diss. TDS</th> <th>Total Alkalinity</th> <th>Bicarb/Carb.</th> <th>Nitrate</th> <th>Metals</th> <th>Total Cyanide</th> <th>Phenol</th> <th>Ammonia</th> <th>BTEX</th> <th>Perchlorate</th> </tr> </table>				# and Type of Containers				INDICATE ANALYSIS REQUESTED												UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	(T) Cl, SO4, F-	Total TDS	Diss. Cl, SO4	Diss. F-	Diss. TDS	Total Alkalinity	Bicarb/Carb.	Nitrate	Metals	Total Cyanide	Phenol	Ammonia	BTEX	Perchlorate																																																																																																																																																																																																																																																																										
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UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	(T) Cl, SO4, F-	Total TDS	Diss. Cl, SO4	Diss. F-	Diss. TDS	Total Alkalinity	Bicarb/Carb.	Nitrate	Metals	Total Cyanide	Phenol	Ammonia	BTEX	Perchlorate																																																																																																																																																																																																																																																																																																		
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*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

CoC Rev C Aug 2020

EH
9/10/21

Pg 2 of 4 Workorder # 21081266

Client: Vistra Energy
Address: 1500 Eastport Plaza Drive
City/State/Zip: Collinsville, IL 62234
Contact: Brian Voelker Phone: (217) 412-6605
Email: brian.voelker@vistraenergy.com Fax: _____

Preserved in: ☐ LAB ☐ FIELD **FOR LAB USE ONLY**

LAB NOTES:

Client Comments:

Field measurements required: pH, conductivity, temperature, ORP, DO, turbidity, and depths
Metals determined by program requirements.

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

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

PROJECT NAME/NUMBER	Hennepin GW Q3 2021

SAMPLE COLLECTOR'S NAME

#	Type of Containers
1	100% Plastic
2	90% Plastic, 10% Metal
3	80% Plastic, 20% Metal
4	70% Plastic, 30% Metal
5	60% Plastic, 40% Metal
6	50% Plastic, 50% Metal
7	40% Plastic, 60% Metal
8	30% Plastic, 70% Metal
9	20% Plastic, 80% Metal
10	10% Plastic, 90% Metal
11	100% Metal

INDICATE ANALYSIS REQUESTED

RESULTS REQUESTED

☒ Standard ☐ 1-2 Day (100% Surcharge)

☐ Other ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS
Vistra PO#s

Percarbonate										✓	✓
BTEX										✓	✓
Ammonia	✓	✓									
Phenol	✓	✓									
Total Cyanide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Metals	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nitrate	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Bicarb./Carb.	✓	✓			✓	✓	✓	✓	✓	✓	✓
Total Alkalinity	✓	✓									
Diss. TDS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Diss. SO ₄ , F-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Diss. Cl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Total TDS	✓	✓			✓	✓	✓	✓	✓	✓	✓
(T) Cl, SO ₄ , F-	✓	✓			✓	✓	✓	✓	✓	✓	✓
Other											
TSP											
NaHSO ₄											
MeOH											
HCL								3			
H ₂ SO ₄	2	2						3			
NaOH	1	1	1					1			
HNO ₃	2	2	1	2	1			2	2		
UNP	2	2	2	2	2	3		3	2	2	2

Relinquished By	Date/Time
	9/10/21 1425

Received By	Date/Time
Mary Kemp	9/10/21 1425

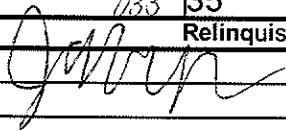
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CoC Rev C Aug 2020

CHAIN OF CUSTODY

Pg 3 of 4 Workorder # 21081266

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

Client: <u>Vistra Energy</u> Address: <u>1500 Eastport Plaza Drive</u> City/State/Zip: <u>Collinsville, IL 62234</u> Contact: <u>Brian Voelker</u> Phone: <u>(217) 412-6605</u> Email: <u>brian.voelker@vistraenergy.com</u> Fax: _____				Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C LTG# _____ Preserved in: ☐ LAB ☐ FIELD <u>FOR LAB USE ONLY</u> LAB NOTES: _____													
Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☒ No Are these samples known to be hazardous? ☐ Yes ☒ No Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in the comment section: ☐ Yes ☒ No				Client Comments: Field measurements required: pH, conductivity, temperature, ORP, DO, turbidity, and depths Depths only: 25, 26, 30, 31, and 33 Metals determined by program requirements.													
PROJECT NAME/NUMBER <u>Hennepin GW Q3 2021</u>		SAMPLE COLLECTOR'S NAME _____		# and Type of Containers UNP HNO3 NaOH H2SO4 HCL MeOH NaHSO4 TSP Other		INDICATE ANALYSIS REQUESTED Total TDS Diss. SO4, F- Diss. TDS Total Alkalinity Bicarb/Carb. Nitrate Metals Total Cyanide Phenol Ammonia BTEX Perchlorate											
RESULTS REQUESTED ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other _____ ☐ 3 Day (50% Surcharge)		BILLING INSTRUCTIONS <u>Vistra PO#s</u>															
Lab Use Only	Sample ID	Date/Time Sampled	Matrix														
21081266-023	22D	9/8/21 1401	Groundwater	2	2												
024	23	9/9/21 1112	Groundwater	2	2												
025	25	9/8/21 1615	Groundwater														
026	26	9/8/21 1616	Groundwater														
027	27	9/9/21 0824	Groundwater	2	2												
028	30	9/8/21 1455	Groundwater														
029	31	9/8/21 1456	Groundwater														
030	32	9/9/21 0848	Groundwater	2	2												
031	33	9/8/21 1508	Groundwater														
032	34	9/9/21 0935	Groundwater	2	2												
033	35	9/8/21 1602	Groundwater	2	2												
Relinquished By 		Date/Time <u>9/10/21 1425</u>		Received By <u>Mary Kemp</u>		Date/Time <u>9/10/21 1425</u>											

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

CHAIN OF CUSTODY

Pg 4 of 4 Workorder # 21081266

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

Client: Vistra Energy
 Address: 1500 Eastport Plaza Drive
 City/State/Zip: Collinsville, IL 62234
 Contact: Brian Voelker Phone: (217) 412-6605
 Email: brian.voelker@vistraenergy.com Fax:

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE °C LTG# _____
 Preserved in: ☐ LAB ☐ FIELD **FOR LAB USE ONLY**
 LAB NOTES:

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

Client Comments:
 Field measurements required: pH, conductivity, temperature, ORP, DO, turbidity, and depths
 Depths only: 36
 Metals determined by program requirements.

PROJECT NAME/NUMBER: Hennepin GW Q3 2021
 SAMPLE COLLECTOR'S NAME: _____
 RESULTS REQUESTED: ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other _____
 BILLING INSTRUCTIONS: Vistra PO#s
☐ 3 Day (50% Surcharge)

# and Type of Containers									INDICATE ANALYSIS REQUESTED													
UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	(T) Cl, SO4, F-	Total TDS	Diss. Cl	Diss. SO4, F-	Diss. TDS	Total Alkalinity	Bicarb/Carb.	Nitrate	Metals	Total Cyanide	Phenol	Ammonia	BTEX	Perchlorate
2	2	1	2																			
3	2	1		3																		
1	1																					
1	1																					
1	1																					
2	2																					
2	2																					
2	2																					
2	2																					
3	2	1	2	3																		

Lab Use Only	Sample ID	Date/Time Sampled	Matrix
21081266-034	36	9/8/21 1619	Groundwater
035	40S	9/9/21 1626	Groundwater
036	45S	9/9/21 1024	Groundwater
037	46	9/9/21 1501	Groundwater
038	47	9/9/21 1203	Groundwater
039	48	9/10/21 0955	Groundwater
040	49	9/8/21 1635	Groundwater
041	50	9/8/21 1313	Groundwater
042	51	9/9/21 1044	Groundwater
043	Field Blank	9/10/21 1045	Groundwater
			Groundwater

Relinquished By: [Signature] Date/Time: 9/10/21 1425

Received By: Mary Lup Date/Time: 9/10/21 1425

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

June 01, 2022

Eric Bauer
Ramboll
234 W. Florida St.
5th Floor
Milwaukee, WI 53204
TEL: (414) 837-3607
FAX:



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

RE: Hennepin Q1 Groundwater

WorkOrder: 22030530

Dear Eric Bauer:

TEKLAB, INC received 49 samples on 3/24/2022 7:50:00 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
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

This reporting package includes the following:

Cover Letter	1
Report Contents	2
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Accreditations	6
Laboratory Results	7
Sample Summary	19
Dates Report	20
Quality Control Results	32
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Chain of Custody	Appended

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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)

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Cooler Receipt Temp: 1.8 °C

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

Perchlorate analysis was performed by Keystone Laboratories, Inc. See attached report for QC summary.

Mercury (total) was omitted from 12 in error at sample log in and will be prepped/analyzed out of hold time. EAH 4/26/22

Hennepin Landfill CCR 801 data is included in this report. EAH 5/2/22

This report was revised on June 1, 2022 per Eric Bauer (Ramboll)'s request. The reason for the revision is to corrected elevation values for 08D, 22, and 22D and to correct the Thallium result for 22D. Please replace reports dated May 2, 2022 and May 3, 2022 with these program reports. EAH 6/1/22

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
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

Springfield

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

Chicago

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

Kansas City

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

Client: Ramboll**Work Order:** 22030530**Client Project:** Hennepin Q1 Groundwater**Report Date:** 01-Jun-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2023	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	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Kentucky	UST	0073		1/31/2023	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-004
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22
 Client Sample ID: 05DR
 Collection Date: 03/23/2022 11:21

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		40.62	ft	4	09/14/1011 4924	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4.00		7.34		4	09/19/1011 44214	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4.0		< 1.0	NTU	4	09/19/1011 44214	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	5	-900		-88	mV	4	09/19/1011 44214	* 90R366
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	5	0		1210	µS/cm	4	09/19/1011 44214	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		16.7	°C	4	09/19/1011 44214	* 90R366
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	5	0		0.21	mg/L	4	09/19/1011 44214	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		242	mg/L	4	09/13/1011 6294	* 90R387
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	4	09/13/1011 6294	* 90R387
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	10		478	mg/L	4	09/90/1011 R2 7	* 9030: 9
SW-846 9036 (TOTAL)								
Sulfate	NELAP	70		76	mg/L	7	09/17/1011 10293	* 90R346
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.40		0.16	mg/L	4	09/94/1011 44207	* 90R3RR
SW-846 9251 (TOTAL)								
Chloride	NELAP	7		79	mg/L	7	09/17/1011 10293	* 90R34R
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.400		90.4	mg/L	4	09/90/1011 3216 4RR	389
Magnesium	NELAP	0.0700		31.8	mg/L	4	09/90/1011 3216 4RR	389
Potassium	NELAP	0.400		7.16	mg/L	4	09/90/1011 3216 4RR	389
Sodium	NELAP	0.0700		50.0	mg/L	4	09/90/1011 3216 4RR	389
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	0.0170		0.880	mg/L	7	09/90/1011 10297 4RR	389

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-005
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22
 Client Sample ID: 05R
 Collection Date: 03/23/2022 11:08

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		40.59	ft	4	09/14/1011 4924	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4.00		7.53		4	09/19/1011 4420R	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4.0		0.96	NTU	4	09/19/1011 4420R	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	5	-900		-94	mV	4	09/19/1011 4420R	* 90R366
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	5	0		1210	µS/cm	4	09/19/1011 4420R	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		16.7	°C	4	09/19/1011 4420R	* 90R366
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	5	0		0.22	mg/L	4	09/19/1011 4420R	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	N8 LAP	0		250	mg/L	4	09/13/1011 629E	* 90R367
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	N8 LAP	0		0	mg/L	4	09/13/1011 629E	* 90R367
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	N8 LAP	10		490	mg/L	4	09/90/1011 R2 E	* 9030: 9
SW-846 9036 (TOTAL)								
Sulfate	N8 LAP	10		80	mg/L	1	09/17/1011 102 6	* 90R346
SW-846 9214 (TOTAL)								
Fluoride	N8 LAP	0.40		0.14	mg/L	4	09/94/1011 44206	* 90R3RR
SW-846 9251 (TOTAL)								
Chloride	N8 LAP	1		75	mg/L	1	09/17/1011 102 6	* 90R34R
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	N8 LAP	0.400		88.2	mg/L	4	09/90/1011 3214 4RR3E9	
Magnesium	N8 LAP	0.0700		31.5	mg/L	4	09/90/1011 3214 4RR3E9	
Potassium	N8 LAP	0.400		9.79	mg/L	4	09/90/1011 3214 4RR3E9	
Sodium	N8 LAP	0.0700		49.1	mg/L	4	09/90/1011 3214 4RR3E9	
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	N8 LAP	0.0170		0.921	mg/L	7	09/90/1011 10293 4RR3E9	

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-007
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22
 Client Sample ID: 07
 Collection Date: 03/22/2022 15:31

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		67.62	ft	4	09/14/1011 42:10	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4y00		6.81		4	09/11/1011 4. :94	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4y0		7.8	UTO	4	09/11/1011 4. :94	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
oxidation-reduction Potential	5	0900		50	mS	4	09/11/1011 4. :94	* 90R366
STANDARD METHODS 2510 B FIELD								
Conductivity	5	0		1350	°C/Vm	4	09/11/1011 4. :94	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		11.2	°C	4	09/11/1011 4. :94	* 90R366
STANDARD METHODS 4500-O G FIELD								
Ammonia Nitrogen	5	0		4.93	mg/L	4	09/11/1011 4. :94	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8ABP	0		390	mg/L	4	09/13/1011 6:24	* 90R377
STANDARD METHODS 2320 B 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8ABP	0		0	mg/L	4	09/13/1011 6:24	* 90R377
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	U8ABP	10		582	mg/L	4	09/14/1011 42:12	* 903096
SW-846 9036 (TOTAL)								
Sulfate	U8ABP	10		56	mg/L	1	09/14/1011 10:00	* 90R346
SW-846 9214 (TOTAL)								
Fluoride	U8ABP	0y40		0.12	mg/L	4	09/04/1011 44:40	* 90R33R
SW-846 9251 (TOTAL)								
Chloride	U8ABP	1		49	mg/L	1	09/14/1011 10:23	* 90R34R
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Aluminum	U8ABP	0y400		140	mg/L	4	09/09/1011 3:12	4RR379
Magnesium	U8ABP	0y0.00		49.8	mg/L	4	09/09/1011 3:12	4RR379
Potassium	U8ABP	0y400		2.53	mg/L	4	09/09/1011 3:12	4RR379
Sodium	U8ABP	0y0.00		22.3	mg/L	4	09/09/1011 3:12	4RR379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Chromium	U8ABP	0y01.0		0.0755	mg/L	.	09/04/1011 42:07	4RR379

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-008
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22
 Client Sample ID: 08
 Collection Date: 03/22/2022 14:24

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		53.48	ft	4	09/14/1011 41:9R	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4y00		6.69		4	09/11/1011 42:12	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4y0		0.09	UTO	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
oxidation-reduction Potential	5	0900		15	mS	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 2510 B FIELD								
Conductivity	5	0		2690	°C/Vm	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		13.2	°C	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 4500-O G FIELD								
Ammonia Nitrogen	5	0		1.07	mg/L	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8ABP	0		545	mg/L	4	09/13/1011 6:26	* 90R377
STANDARD METHODS 2320 B 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8ABP	0		0	mg/L	4	09/13/1011 6:26	* 90R377
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	U8ABP	10		1170	mg/L	4	09/11/1011 42:12	* 903096
SW-846 9036 (TOTAL)								
Sulfate	U8ABP	400		153	mg/L	40	09/11/1011 10:11	* 90R346
SW-846 9214 (TOTAL)								
Fluoride	U8ABP	0.40		0.11	mg/L	4	09/04/1011 44:49	* 90R33R
SW-846 9251 (TOTAL)								
Chloride	U8ABP	40		247	mg/L	40	09/11/1011 10:11	* 90R34R
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Aluminum	U8ABP	0.400		207	mg/L	4	09/09/1011 3:1R	4RR379
Magnesium	U8ABP	0.00		57.5	mg/L	4	09/09/1011 3:1R	4RR379
Potassium	U8ABP	0.400		6.07	mg/L	4	09/09/1011 3:1R	4RR379
Sodium	U8ABP	0.00		192	mg/L	4	09/09/1011 3:1R	4RR379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Chromium	U8ABP	0.010		0.124	mg/L	.	09/04/1011 4:01	4RR379

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-009
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22
 Client Sample ID: 08 Duplicate
 Collection Date: 03/22/2022 14:24

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		53.48	ft	4	09/14/1011 41:9R	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4y00		6.69		4	09/11/1011 42:12	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4y0		0.09	UTO	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
oxidation-reduction Potential	5	0900		15	mS	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 2510 B FIELD								
Conductivity	5	0		2690	°C/Vm	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		13.2	°C	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 4500-O G FIELD								
Ammonia Nitrogen	5	0		1.07	mg/L	4	09/11/1011 42:12	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8ABP	0		544	mg/L	4	09/13/1011 6:2	* 90R377
STANDARD METHODS 2320 B 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8ABP	0		0	mg/L	4	09/13/1011 6:2	* 90R377
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	U8ABP	10		1190	mg/L	4	09/11/1011 42:1	* 903096
SW-846 9036 (TOTAL)								
Sulfate	U8ABP	400		154	mg/L	40	09/11/1011 10:1	* 90R346
SW-846 9214 (TOTAL)								
Fluoride	U8ABP	0.40		0.11	mg/L	4	09/04/1011 44:4	* 90R33R
SW-846 9251 (TOTAL)								
Chloride	U8ABP	40		246	mg/L	40	09/11/1011 10:6	* 90R34R
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Aluminum	U8ABP	0.400		207	mg/L	4	09/09/1011 3:91	4RR379
Magnesium	U8ABP	0.00		57.4	mg/L	4	09/09/1011 3:91	4RR379
Potassium	U8ABP	0.400		6.10	mg/L	4	09/09/1011 3:91	4RR379
Sodium	U8ABP	0.00		191	mg/L	4	09/09/1011 3:91	4RR379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Chromium	U8ABP	0.010		0.128	mg/L	.	09/04/1011 4:0R	4RR379

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-010
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22
 Client Sample ID: 08D
 Collection Date: 03/22/2022 14:04

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		53.49	ft	4	09/14/1011 41:96	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4y00		6.64		4	09/11/1011 42:02	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4y0		3.0	UTO	4	09/11/1011 42:02	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
oxidation-reduction Potential	5	0900		8	mS	4	09/11/1011 42:02	* 90R366
STANDARD METHODS 2510 B FIELD								
Conductivity	5	0		2790	°C/Vm	4	09/11/1011 42:02	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		13.2	°C	4	09/11/1011 42:02	* 90R366
STANDARD METHODS 4500-O G FIELD								
Ammonia Nitrogen	5	0		0.32	mg/L	4	09/11/1011 42:02	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8ABP	0		544	mg/L	4	09/13/1011 R00	* 90R377
STANDARD METHODS 2320 B 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8ABP	0		0	mg/L	4	09/13/1011 R00	* 90R377
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	U8ABP	10		1210	mg/L	4	09/14/1011 47:27	* 903096
SW-846 9036 (TOTAL)								
Sulfate	U8ABP	400		174	mg/L	40	09/14/1011 14:00	* 90R346
SW-846 9214 (TOTAL)								
Fluoride	U8ABP	0.40		0.11	mg/L	4	09/04/1011 44:48	* 90R338
SW-846 9251 (TOTAL)								
Chloride	U8ABP	40		257	mg/L	40	09/14/1011 14:00	* 90R346
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Aluminum	U8ABP	0.400		208	mg/L	4	09/09/1011 3:39	4RR379
Magnesium	U8ABP	0.00		59.7	mg/L	4	09/09/1011 3:39	4RR379
Potassium	U8ABP	0.400		4.50	mg/L	4	09/09/1011 3:39	4RR379
Sodium	U8ABP	0.00		192	mg/L	4	09/09/1011 3:39	4RR379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Chromium	U8ABP	0.010		0.112	mg/L	.	09/04/1011 4:42	4RR379

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-015
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22
 Client Sample ID: 16
 Collection Date: 03/22/2022 14:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		53.92	ft	4	09/14/1011 41:11	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4y00		7.22		4	09/11/1011 42:00	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4y0		< 1.0	UTO	4	09/11/1011 42:00	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
oxidation-reduction Potential	5	0900		-61	mS	4	09/11/1011 42:00	* 90R366
STANDARD METHODS 2510 B FIELD								
Conductivity	5	0		1140	°C/Vm	4	09/11/1011 42:00	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		17.4	°C	4	09/11/1011 42:00	* 90R366
STANDARD METHODS 4500-O G FIELD								
Ammonia Nitrogen	5	0		0.26	mg/L	4	09/11/1011 42:00	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8 ABP	0		263	mg/L	4	09/13/1011 R17	* 90R17
STANDARD METHODS 2320 B 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8 ABP	0		0	mg/L	4	09/13/1011 R17	* 90R17
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	U8 ABP	10		474	mg/L	4	09/14/1011 47:28	* 903096
SW-846 9036 (TOTAL)								
Sulfate	U8 ABP	10		61	mg/L	1	09/14/1011 14:09	* 90R146
SW-846 9214 (TOTAL)								
Fluoride	U8 ABP	0y40		0.26	mg/L	4	09/04/1011 44:09	* 90R3RR
SW-846 9251 (TOTAL)								
Chloride	U8 ABP	1		75	mg/L	1	09/14/1011 14:09	* 90R14R
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Aluminum	U8 ABP	0y400		91.5	mg/L	4	09/09/1011 40:29	4RR379
Magnesium	U8 ABP	0y0.00		32.2	mg/L	4	09/09/1011 40:29	4RR379
Potassium	U8 ABP	0y400		4.81	mg/L	4	09/09/1011 40:29	4RR379
Sodium	U8 ABP	0y0.00		50.9	mg/L	4	09/09/1011 40:29	4RR379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Chromium	U8 ABP	0y01.0		0.216	mg/L	.	09/04/1011 4:10	4RR379

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-016
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22

Client Sample ID: 17

Collection Date: 03/22/2022 15:04

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		57.70	ft	4	09/14/1011 412 :	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4y00		7.02		4	09/11/1011 4: 20:	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4y0		< 1.0	UTO	4	09/11/1011 4: 20:	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
oxidation-reduction Potential	5	0900		-45	mS	4	09/11/1011 4: 20:	* 90R366
STANDARD METHODS 2510 B FIELD								
Conductivity	5	0		1530	°C/Vm	4	09/11/1011 4: 20:	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		18.8	°C	4	09/11/1011 4: 20:	* 90R366
STANDARD METHODS 4500-O G FIELD								
Ammonia Nitrogen	5	0		0.69	mg/L	4	09/11/1011 4: 20:	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8 ABP	0		424	mg/L	4	09/13/1011 R294	* 90R377
STANDARD METHODS 2320 B 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8 ABP	0		0	mg/L	4	09/13/1011 R294	* 90R377
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	U8 ABP	10		628	mg/L	4	09/14/1011 472 R	* 903096
SW-846 9036 (TOTAL)								
Sulfate	U8 ABP	10		66	mg/L	1	09/11/1011 142 :	* 90R346
SW-846 9214 (TOTAL)								
Fluoride	U8 ABP	0y40		0.18	mg/L	4	09/04/1011 4420:	* 90R33R
SW-846 9251 (TOTAL)								
Chloride	U8 ABP	1		88	mg/L	1	09/11/1011 142 :	* 90R34R
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Aluminum	U8 ABP	0y400		132	mg/L	4	09/09/1011 402 7 4RR379	
Magnesium	U8 ABP	0y0: 00		54.4	mg/L	4	09/09/1011 402 7 4RR379	
Potassium	U8 ABP	0y400		5.30	mg/L	4	09/09/1011 402 7 4RR379	
Sodium	U8 ABP	0y0: 00		52.9	mg/L	4	09/09/1011 402 7 4RR379	
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Chromium	U8 ABP	0y01: 0		0.167	mg/L	:	09/04/1011 4: 217 4RR379	

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-035
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22
 Client Sample ID: 40S
 Collection Date: 03/23/2022 10:41

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		39.87	ft	4	09/14/1011 49217	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4y00		7.64		4	09/19/1011 402 4	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4y0		1.2	UTO	4	09/19/1011 402 4	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
oxidation-reduction Potential	5	0900		-75	mS	4	09/19/1011 402 4	* 90R366
STANDARD METHODS 2510 B FIELD								
Conductivity	5	0		1180	°C/Vm	4	09/19/1011 402 4	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		16.4	°C	4	09/19/1011 402 4	* 90R366
STANDARD METHODS 4500-O G FIELD								
Ammonia Nitrogen	5	0		0.29	mg/L	4	09/19/1011 402 4	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8 ABP	0		186	mg/L	4	09/13/1011 32	* 90R366
STANDARD METHODS 2320 B 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8 ABP	0		0	mg/L	4	09/13/1011 32	* 90R366
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	U8 ABP	10		506	mg/L	4	09/13/1011 4. 210	* 903093
SW-846 9036 (TOTAL)								
Sulfate	U8 ABP	10		118	mg/L	4	09/13/1011 112 1	* 90R366
SW-846 9214 (TOTAL)								
Fluoride	U8 ABP	0.40		0.16	mg/L	4	09/14/1011 4120	* 90R366
SW-846 9251 (TOTAL)								
Chloride	U8 ABP	10		80	mg/L	4	09/13/1011 112 1	* 90R366
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Aluminum	U8 ABP	0.400	C	78.2	mg/L	4	09/13/1011 1920	4RR3R0
Magnesium	U8 ABP	0.000	C	31.7	mg/L	4	09/13/1011 1920	4RR3R0
Potassium	U8 ABP	0.400		7.37	mg/L	4	09/16/1011 44210	4RR3R0
Sodium	U8 ABP	0.000	C	47.9	mg/L	4	09/13/1011 1920	4RR3R0
<i>Matrix spike control limits for Ca, Mg, and Na are not applicable due to high sample/spike ratio.</i>								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Chromium	U8 ABP	0.010		2.17	mg/L	4	09/14/1011 1206	4RR3R0

Client: Ramboll
 Client Project: Hennepin Q1 Groundwater
 Lab ID: 22030530-039
 Matrix: GROUNDWATER

Work Order: 22030530
 Report Date: 01-Jun-22
 Client Sample ID: 48
 Collection Date: 03/23/2022 10:56

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		39.58	ft	4	09/14/1011 4924	* 90R366
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	4y00		7.52		4	09/19/1011 402 7	* 90R366
STANDARD METHODS 2130 B FIELD								
Turbidity	5	4y0		0.74	UTO	4	09/19/1011 402 7	* 90R366
STANDARD METHODS 18TH ED. 2580 B FIELD								
oxidation-reduction Potential	5	0900		-93	mS	4	09/19/1011 402 7	* 90R366
STANDARD METHODS 2510 B FIELD								
Conductivity	5	0		1200	°C/Vm	4	09/19/1011 402 7	* 90R366
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		16.9	°C	4	09/19/1011 402 7	* 90R366
STANDARD METHODS 4500-O G FIELD								
Ammonia Nitrogen	5	0		0.20	mg/L	4	09/19/1011 402 7	* 90R366
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8 ABP	0		251	mg/L	4	09/13/1011 40201	* 90R366
STANDARD METHODS 2320 B 1997, 2011								
Bicarbonate, carbonate, and chloride as calcium carbonate	U8 ABP	0		0	mg/L	4	09/13/1011 40201	* 90R366
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	U8 ABP	10		502	mg/L	4	09/13/1011 4. 214	* 903093
SW-846 9036 (TOTAL)								
Sulfate	U8 ABP	0		77	mg/L	4	09/17/1011 0203	* 90R366
SW-846 9214 (TOTAL)								
Fluoride	U8 ABP	0y40		0.17	mg/L	4	09/94/1011 492 0	* 90R366
SW-846 9251 (TOTAL)								
Chloride	U8 ABP	0		76	mg/L	4	09/17/1011 0203	* 90R366
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Aluminum	U8 ABP	0y400		84.9	mg/L	4	09/13/1011 19243	4RR3R0
Magnesium	U8 ABP	0y0: 00		29.3	mg/L	4	09/13/1011 19243	4RR3R0
Potassium	U8 ABP	0y400		6.29	mg/L	4	09/94/1011 4120R	4RR3R0
Sodium	U8 ABP	0y0: 00		47.5	mg/L	4	09/13/1011 19243	4RR3R0
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Chromium	U8 ABP	0y01: 0		1.18	mg/L	4	09/94/1011 4R24	4RR3R0

Client: Ramboll
Client Project: Hennepin Q1 Groundwater
Lab ID: 22030530-044
Matrix: GROUNDWATER

Work Order: 22030530
Report Date: 01-Jun-22
Client Sample ID: SG02
Collection Date: 03/21/2022 14:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		444.50	ft	4	09/14/1011 4. 204	* 90R366

Client: Ramboll
Client Project: Hennepin Q1 Groundwater
Lab ID: 22030530-049
Matrix: GROUNDWATER

Work Order: 22030530
Report Date: 01-Jun-22
Client Sample ID: Field Blank
Collection Date: 03/23/2022 13:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
BikalininitF(iVarbonate)as , a, x 9E	U8ABP	0		2	mg/A	4	09/13/1011 402 7 * 90R7:	
STANDARD METHODS 2320 B 1997, 2011								
BikalininitF, arbonate)as , a, x 9E	U8ABP	0		0	mg/A	4	09/13/1011 402 7 * 90R7:	
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total DissolLed Colids	U8ABP	10		< 20	mg/A	4	09/90/1011 R2 3 * 9030. 9	
SW-846 9036 (TOTAL)								
Culfate	U8ABP	40		< 10	mg/A	4	09/17/1011 4209 * 90R46	
SW-846 9214 (TOTAL)								
pluoride	U8ABP	0y40		< 0.10	mg/A	4	09/94/1011 4. 211 * 90R3RR	
SW-846 9251 (TOTAL)								
, hloride	U8ABP	4		< 1	mg/A	4	09/17/1011 4209 * 90R4R	
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
, alMum	U8ABP	0y400		< 0.100	mg/A	4	09/1R/1011 192 3 4R3007	
Magnesium	U8ABP	0y0: 00		< 0.0500	mg/A	4	09/1R/1011 192 3 4R3007	
Potassium	U8ABP	0y40 (J		0.050	mg/A	4	09/1R/1011 192 3 4R3007	
Codium	U8ABP	0y0: 00		< 0.0500	mg/A	4	09/1R/1011 192 3 4R3007	
<i>Contamination present in the MBLK for K. Sample results below the reporting limit are reportable per the TNI Standard.</i>								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
(oron	U8ABP	0y01: 0		< 0.0250	mg/A	:	09/94/1011 43213 4R3007	

Client: Ramboll**Work Order:** 22030530**Client Project:** Hennepin Q1 Groundwater**Report Date:** 01-Jun-22

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
22030530-004	05DR	Groundwater	10	03/23/2022 11:21
22030530-005	05R	Groundwater	10	03/23/2022 11:08
22030530-007	07	Groundwater	7	03/22/2022 15:31
22030530-008	08	Groundwater	12	03/22/2022 14:24
22030530-009	08 Duplicate	Groundwater	12	03/22/2022 14:24
22030530-010	08D	Groundwater	12	03/22/2022 14:04
22030530-015	16	Groundwater	5	03/22/2022 14:50
22030530-016	17	Groundwater	5	03/22/2022 15:04
22030530-035	40S	Groundwater	10	03/23/2022 10:41
22030530-039	48	Groundwater	2	03/23/2022 10:56
22030530-044	SG02	Groundwater	1	03/21/2022 14:01
22030530-049	Field Blank	Groundwater	13	03/23/2022 13:30

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22030530-004A	05DR	03/23/2022 11:21	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 13:14
	Standard Method 4500-H B 2001 Field				03/23/2022 11:21
	Standard Methods 2130 B Field				03/23/2022 11:21
	Standard Methods 2320 B 1997, 2011				03/29/2022 7:31
	Standard Methods 18th Ed. 2580 B Field				03/23/2022 11:21
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 7:31
	Standard Methods 2320 B 1997, 2011				03/29/2022 7:31
	Standard Methods 2510 B Field				03/23/2022 11:21
	Standard Methods 2540 C (Total) 1997, 2011				03/30/2022 8:45
	Standard Methods 2550 B Field				03/23/2022 11:21
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:48
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 12:44
	Standard Methods 4500-O G Field				03/23/2022 11:21
	SW-846 9036 (Total)				03/25/2022 20:39
	SW-846 9214 (Total)				03/31/2022 11:05
	SW-846 9251 (Total)				03/25/2022 20:39
22030530-004B	05DR	03/23/2022 11:21	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				03/25/2022 16:37
	SW-846 9214 (Dissolved)				03/31/2022 14:22
	SW-846 9251 (Dissolved)				03/25/2022 16:36
22030530-004C	05DR	03/23/2022 11:21	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 11:27	03/30/2022 9:17
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/30/2022 20:35
22030530-004D	05DR	03/23/2022 11:21	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/25/2022 13:22	03/29/2022 5:04
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	03/31/2022 19:54
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 17:15
	SW-846 7470A (Dissolved)			03/24/2022 11:41	03/24/2022 18:07
22030530-004E	05DR	03/23/2022 11:21	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 11:09
22030530-004F	05DR	03/23/2022 11:21	03/24/2022 7:50		
	SW-846 9012A (Dissolved)			03/25/2022 13:27	03/28/2022 11:57
22030530-004G	05DR	03/23/2022 11:21	03/24/2022 7:50		
	SW-846 9066 (Total)				03/28/2022 11:56
22030530-004H	05DR	03/23/2022 11:21	03/24/2022 7:50		
	SW-846 9066 (Dissolved)				03/28/2022 11:08

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22030530-004I	05DR	03/23/2022 11:21	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/25/2022 18:30
22030530-004J	05DR	03/23/2022 11:21	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Dissolved) 1997, 2011				03/25/2022 17:36
22030530-005A	05R	03/23/2022 11:08	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 13:14
	Standard Method 4500-H B 2001 Field				03/23/2022 11:08
	Standard Methods 2130 B Field				03/23/2022 11:08
	Standard Methods 2320 B 1997, 2011				03/29/2022 7:36
	Standard Methods 18th Ed. 2580 B Field				03/23/2022 11:08
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 7:36
	Standard Methods 2320 B 1997, 2011				03/29/2022 7:36
	Standard Methods 2510 B Field				03/23/2022 11:08
	Standard Methods 2540 C (Total) 1997, 2011				03/30/2022 8:46
	Standard Methods 2550 B Field				03/23/2022 11:08
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:49
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 12:47
	Standard Methods 4500-O G Field				03/23/2022 11:08
	SW-846 9036 (Total)				03/25/2022 20:47
	SW-846 9214 (Total)				03/31/2022 11:07
	SW-846 9251 (Total)				03/25/2022 20:47
22030530-005B	05R	03/23/2022 11:08	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				03/25/2022 16:44
	SW-846 9214 (Dissolved)				03/31/2022 14:24
	SW-846 9251 (Dissolved)				03/25/2022 16:44
22030530-005C	05R	03/23/2022 11:08	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 11:27	03/30/2022 9:21
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/30/2022 20:39
22030530-005D	05R	03/23/2022 11:08	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/25/2022 13:22	03/29/2022 5:08
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	03/31/2022 21:21
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 17:18
	SW-846 7470A (Dissolved)			03/24/2022 11:41	03/24/2022 18:10
22030530-005E	05R	03/23/2022 11:08	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 13:45
22030530-005F	05R	03/23/2022 11:08	03/24/2022 7:50		
	SW-846 9012A (Dissolved)			03/25/2022 13:27	03/28/2022 10:34

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22030530-005G	05R	03/23/2022 11:08	03/24/2022 7:50		
	SW-846 9066 (Total)				03/28/2022 12:22
22030530-005H	05R	03/23/2022 11:08	03/24/2022 7:50		
	SW-846 9066 (Dissolved)				03/28/2022 11:12
22030530-005I	05R	03/23/2022 11:08	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/30/2022 17:53
22030530-005J	05R	03/23/2022 11:08	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Dissolved) 1997, 2011				03/25/2022 17:47
22030530-007A	07	03/22/2022 15:31	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 14:20
	Standard Method 4500-H B 2001 Field				03/22/2022 15:31
	Standard Methods 2130 B Field				03/22/2022 15:31
	Standard Methods 18th Ed. 2580 B Field				03/22/2022 15:31
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 7:41
	Standard Methods 2320 B 1997, 2011				03/29/2022 7:41
	Standard Methods 2510 B Field				03/22/2022 15:31
	Standard Methods 2540 C (Total) 1997, 2011				03/28/2022 14:24
	Standard Methods 2550 B Field				03/22/2022 15:31
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:49
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 12:05
	Standard Methods 4500-O G Field				03/22/2022 15:31
	SW-846 9036 (Total)				03/25/2022 20:50
	SW-846 9214 (Total)				03/31/2022 11:10
	SW-846 9251 (Total)				03/25/2022 20:49
22030530-007B	07	03/22/2022 15:31	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				03/25/2022 16:50
	SW-846 9214 (Dissolved)				03/31/2022 14:29
	SW-846 9251 (Dissolved)				03/25/2022 16:50
22030530-007C	07	03/22/2022 15:31	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 11:27	03/30/2022 9:24
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/29/2022 20:50
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/31/2022 14:56
	SW-846 7470A (Total)			03/24/2022 11:41	03/24/2022 18:14
22030530-007D	07	03/22/2022 15:31	03/24/2022 7:50		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	03/31/2022 22:04
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 17:25
	SW-846 7470A (Dissolved)			03/27/2022 10:12	03/29/2022 17:29

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22030530-007E	07	03/22/2022 15:31	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 13:58
22030530-007F	07	03/22/2022 15:31	03/24/2022 7:50		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/24/2022 13:52
22030530-007G	07	03/22/2022 15:31	03/24/2022 7:50		
	EPA 314.0				04/05/2022 0:00
22030530-008A	08	03/22/2022 14:24	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 12:38
	Standard Method 4500-H B 2001 Field				03/22/2022 14:24
	Standard Methods 2130 B Field				03/22/2022 14:24
	Standard Methods 2320 B 1997, 2011				03/29/2022 7:47
	Standard Methods 18th Ed. 2580 B Field				03/22/2022 14:24
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 7:47
	Standard Methods 2320 B 1997, 2011				03/29/2022 7:47
	Standard Methods 2510 B Field				03/22/2022 14:24
	Standard Methods 2540 C (Total) 1997, 2011				03/28/2022 14:24
	Standard Methods 2550 B Field				03/22/2022 14:24
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:50
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 12:07
	Standard Methods 4500-O G Field				03/22/2022 14:24
	SW-846 9036 (Total)				03/25/2022 20:52
	SW-846 9214 (Total)				03/31/2022 11:13
	SW-846 9251 (Total)				03/25/2022 20:52
22030530-008B	08	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				03/25/2022 16:55
	SW-846 9214 (Dissolved)				03/31/2022 14:40
	SW-846 9251 (Dissolved)				03/25/2022 16:55
22030530-008C	08	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 11:27	03/30/2022 9:28
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/29/2022 20:57
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/31/2022 15:02
	SW-846 7470A (Total)			03/27/2022 10:12	03/28/2022 16:12
22030530-008D	08	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/25/2022 13:22	03/29/2022 5:12
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	03/31/2022 21:33
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 17:46
	SW-846 7470A (Dissolved)			03/27/2022 10:12	03/28/2022 16:15



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22030530-008E	08	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 14:02
22030530-008F	08	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9012A (Dissolved)			03/25/2022 13:27	03/28/2022 12:23
22030530-008G	08	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9066 (Total)				03/28/2022 12:26
22030530-008H	08	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9066 (Dissolved)				03/28/2022 11:17
22030530-008I	08	03/22/2022 14:24	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/25/2022 18:45
22030530-008J	08	03/22/2022 14:24	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Dissolved) 1997, 2011				03/25/2022 17:49
22030530-008K	08	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/24/2022 14:21
22030530-008L	08	03/22/2022 14:24	03/24/2022 7:50		
	EPA 314.0				04/05/2022 0:00
22030530-009A	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 12:38
	Standard Method 4500-H B 2001 Field				03/22/2022 14:24
	Standard Methods 2130 B Field				03/22/2022 14:24
	Standard Methods 2320 B 1997, 2011				03/29/2022 7:54
	Standard Methods 18th Ed. 2580 B Field				03/22/2022 14:24
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 7:54
	Standard Methods 2320 B 1997, 2011				03/29/2022 7:54
	Standard Methods 2510 B Field				03/22/2022 14:24
	Standard Methods 2540 C (Total) 1997, 2011				03/28/2022 14:25
	Standard Methods 2550 B Field				03/22/2022 14:24
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:50
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 12:09
	Standard Methods 4500-O G Field				03/22/2022 14:24
	SW-846 9036 (Total)				03/25/2022 20:58
	SW-846 9214 (Total)				03/31/2022 11:15
	SW-846 9251 (Total)				03/25/2022 20:57
22030530-009B	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				03/25/2022 16:58
	SW-846 9214 (Dissolved)				03/31/2022 14:42

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	SW-846 9251 (Dissolved)				03/25/2022 16:58
22030530-009C	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 11:27	03/30/2022 9:32
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/29/2022 21:03
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/31/2022 15:08
	SW-846 7470A (Total)			03/27/2022 10:12	03/28/2022 16:21
22030530-009D	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/25/2022 13:22	03/29/2022 5:15
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	03/31/2022 21:39
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 17:50
	SW-846 7470A (Dissolved)			03/27/2022 10:12	03/28/2022 16:24
22030530-009E	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 14:06
22030530-009F	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9012A (Dissolved)			03/25/2022 13:27	03/28/2022 12:27
22030530-009G	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9066 (Total)				03/28/2022 12:30
22030530-009H	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 9066 (Dissolved)				03/28/2022 11:25
22030530-009I	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/25/2022 18:47
22030530-009J	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Dissolved) 1997, 2011				03/25/2022 17:52
22030530-009K	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/24/2022 14:51
22030530-009L	08 Duplicate	03/22/2022 14:24	03/24/2022 7:50		
	EPA 314.0				04/05/2022 0:00
22030530-010A	08D	03/22/2022 14:04	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 12:37
	Standard Method 4500-H B 2001 Field				03/22/2022 14:04
	Standard Methods 2130 B Field				03/22/2022 14:04
	Standard Methods 2320 B 1997, 2011				03/29/2022 8:00
	Standard Methods 18th Ed. 2580 B Field				03/22/2022 14:04
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 8:00
	Standard Methods 2320 B 1997, 2011				03/29/2022 8:00
	Standard Methods 2510 B Field				03/22/2022 14:04

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	Standard Methods 2540 C (Total) 1997, 2011				03/28/2022 16:46
	Standard Methods 2550 B Field				03/22/2022 14:04
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:51
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 12:11
	Standard Methods 4500-O G Field				03/22/2022 14:04
	SW-846 9036 (Total)				03/25/2022 21:00
	SW-846 9214 (Total)				03/31/2022 11:18
	SW-846 9251 (Total)				03/25/2022 21:00
22030530-010B	08D	03/22/2022 14:04	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				03/25/2022 17:00
	SW-846 9214 (Dissolved)				03/31/2022 14:44
	SW-846 9251 (Dissolved)				03/25/2022 17:00
22030530-010C	08D	03/22/2022 14:04	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 11:27	03/30/2022 9:35
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/29/2022 21:09
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/31/2022 15:14
	SW-846 7470A (Total)			03/27/2022 10:12	03/28/2022 16:26
22030530-010D	08D	03/22/2022 14:04	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/25/2022 13:22	03/29/2022 5:19
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	03/31/2022 21:46
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 17:53
	SW-846 7470A (Dissolved)			03/27/2022 10:12	03/28/2022 16:28
22030530-010E	08D	03/22/2022 14:04	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 14:11
22030530-010F	08D	03/22/2022 14:04	03/24/2022 7:50		
	SW-846 9012A (Dissolved)			03/25/2022 13:27	03/28/2022 12:31
22030530-010G	08D	03/22/2022 14:04	03/24/2022 7:50		
	SW-846 9066 (Total)				03/28/2022 12:34
22030530-010H	08D	03/22/2022 14:04	03/24/2022 7:50		
	SW-846 9066 (Dissolved)				03/28/2022 11:30
22030530-010I	08D	03/22/2022 14:04	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/25/2022 19:03
22030530-010J	08D	03/22/2022 14:04	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Dissolved) 1997, 2011				03/25/2022 17:54
22030530-010K	08D	03/22/2022 14:04	03/24/2022 7:50		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/24/2022 15:20

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22030530-010L	08D	03/22/2022 14:04	03/24/2022 7:50		
	EPA 314.0				04/05/2022 0:00
22030530-015A	16	03/22/2022 14:50	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 12:52
	Standard Method 4500-H B 2001 Field				03/22/2022 14:50
	Standard Methods 2130 B Field				03/22/2022 14:50
	Standard Methods 18th Ed. 2580 B Field				03/22/2022 14:50
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 8:26
	Standard Methods 2320 B 1997, 2011				03/29/2022 8:26
	Standard Methods 2510 B Field				03/22/2022 14:50
	Standard Methods 2540 C (Total) 1997, 2011				03/28/2022 16:48
	Standard Methods 2550 B Field				03/22/2022 14:50
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:54
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 12:36
	Standard Methods 4500-O G Field				03/22/2022 14:50
	SW-846 9036 (Total)				03/25/2022 21:35
	SW-846 9214 (Total)				03/31/2022 11:33
	SW-846 9251 (Total)				03/25/2022 21:35
22030530-015B	16	03/22/2022 14:50	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				03/25/2022 17:46
	SW-846 9214 (Dissolved)				03/31/2022 14:57
	SW-846 9251 (Dissolved)				03/25/2022 17:46
22030530-015C	16	03/22/2022 14:50	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 11:27	03/30/2022 10:43
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/29/2022 21:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/31/2022 15:20
	SW-846 7470A (Total)			03/27/2022 10:12	03/28/2022 16:56
22030530-015D	16	03/22/2022 14:50	03/24/2022 7:50		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	03/31/2022 23:00
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 18:11
	SW-846 7470A (Dissolved)			03/27/2022 10:12	03/28/2022 16:58
22030530-015E	16	03/22/2022 14:50	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 14:54
22030530-016A	17	03/22/2022 15:04	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 12:55
	Standard Method 4500-H B 2001 Field				03/22/2022 15:04
	Standard Methods 2130 B Field				03/22/2022 15:04

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	Standard Methods 18th Ed. 2580 B Field				03/22/2022 15:04
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 8:31
	Standard Methods 2320 B 1997, 2011				03/29/2022 8:31
	Standard Methods 2510 B Field				03/22/2022 15:04
	Standard Methods 2540 C (Total) 1997, 2011				03/28/2022 16:48
	Standard Methods 2550 B Field				03/22/2022 15:04
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:54
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 12:38
	Standard Methods 4500-O G Field				03/22/2022 15:04
	SW-846 9036 (Total)				03/25/2022 21:45
	SW-846 9214 (Total)				03/31/2022 11:35
	SW-846 9251 (Total)				03/25/2022 21:45
22030530-016B	17	03/22/2022 15:04	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				03/25/2022 18:10
	SW-846 9214 (Dissolved)				03/31/2022 15:07
	SW-846 9251 (Dissolved)				03/25/2022 18:10
22030530-016C	17	03/22/2022 15:04	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 11:27	03/30/2022 10:46
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/29/2022 21:59
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 11:27	03/31/2022 15:26
	SW-846 7470A (Total)			03/27/2022 10:12	03/28/2022 17:00
22030530-016D	17	03/22/2022 15:04	03/24/2022 7:50		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	03/31/2022 23:31
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/04/2022 21:51
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/05/2022 21:02
	SW-846 7470A (Dissolved)			03/27/2022 10:12	03/28/2022 17:02
22030530-016E	17	03/22/2022 15:04	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 14:58
22030530-035A	40S	03/23/2022 10:41	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 13:16
	Standard Method 4500-H B 2001 Field				03/23/2022 10:41
	Standard Methods 2130 B Field				03/23/2022 10:41
	Standard Methods 2320 B 1997, 2011				03/29/2022 9:44
	Standard Methods 18th Ed. 2580 B Field				03/23/2022 10:41
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 9:44
	Standard Methods 2320 B 1997, 2011				03/29/2022 9:44
	Standard Methods 2510 B Field				03/23/2022 10:41

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	Standard Methods 2540 C (Total) 1997, 2011				03/29/2022 14:20
	Standard Methods 2550 B Field				03/23/2022 10:41
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:57
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 13:22
	Standard Methods 4500-O G Field				03/23/2022 10:41
	SW-846 9036 (Total)				03/25/2022 22:52
	SW-846 9214 (Total)				03/31/2022 12:30
	SW-846 9251 (Total)				03/25/2022 22:52
22030530-035B	40S	03/23/2022 10:41	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				03/25/2022 19:19
	SW-846 9214 (Dissolved)				03/31/2022 15:18
	SW-846 9251 (Dissolved)				03/25/2022 19:19
22030530-035C	40S	03/23/2022 10:41	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 15:30	03/29/2022 23:04
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 15:30	04/27/2022 11:20
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 15:30	03/30/2022 20:50
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 15:30	04/01/2022 2:07
22030530-035D	40S	03/23/2022 10:41	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/25/2022 13:22	03/28/2022 20:37
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 0:52
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 19:00
	SW-846 7470A (Dissolved)			03/27/2022 10:16	03/28/2022 17:59
22030530-035E	40S	03/23/2022 10:41	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 11:39
22030530-035F	40S	03/23/2022 10:41	03/24/2022 7:50		
	SW-846 9012A (Dissolved)			03/25/2022 13:27	03/28/2022 12:53
22030530-035G	40S	03/23/2022 10:41	03/24/2022 7:50		
	SW-846 9066 (Total)				03/28/2022 12:52
22030530-035H	40S	03/23/2022 10:41	03/24/2022 7:50		
	SW-846 9066 (Dissolved)				03/28/2022 11:47
22030530-035I	40S	03/23/2022 10:41	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/25/2022 19:23
22030530-035J	40S	03/23/2022 10:41	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Dissolved) 1997, 2011				03/25/2022 18:25
22030530-039A	48	03/23/2022 10:56	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 13:15

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	Standard Method 4500-H B 2001 Field				03/23/2022 10:56
	Standard Methods 2130 B Field				03/23/2022 10:56
	Standard Methods 18th Ed. 2580 B Field				03/23/2022 10:56
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 10:02
	Standard Methods 2320 B 1997, 2011				03/29/2022 10:02
	Standard Methods 2510 B Field				03/23/2022 10:56
	Standard Methods 2540 C (Total) 1997, 2011				03/29/2022 14:21
	Standard Methods 2550 B Field				03/23/2022 10:56
	Standard Methods 4500-O G Field				03/23/2022 10:56
	SW-846 9036 (Total)				03/26/2022 0:09
	SW-846 9214 (Total)				03/31/2022 13:50
	SW-846 9251 (Total)				03/26/2022 0:09
22030530-039B	48	03/23/2022 10:56	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 15:30	03/29/2022 23:19
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/24/2022 15:30	03/31/2022 12:38
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 15:30	03/30/2022 1:18
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/24/2022 15:30	03/31/2022 18:14
	SW-846 7470A (Total)			03/27/2022 10:16	03/28/2022 18:15
22030530-044A	SG02	03/21/2022 14:01	03/24/2022 7:50		
	Field Elevation Measurements				03/21/2022 14:01
22030530-049A	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	Standard Methods 2320 B 1997, 2011				03/29/2022 10:56
	Standard Methods 2320 B (Total) 1997, 2011				03/29/2022 10:56
	Standard Methods 2320 B 1997, 2011				03/29/2022 10:56
	Standard Methods 2540 C (Total) 1997, 2011				03/30/2022 8:49
	Standard Methods 4500-NO2 B (Total) 2000, 2011				03/24/2022 12:58
	Standard Methods 4500-NO3 F (Total) 2000, 2011				03/24/2022 13:45
	SW-846 9036 (Total)				03/26/2022 1:03
	SW-846 9214 (Total)				03/31/2022 14:12
	SW-846 9251 (Total)				03/26/2022 1:03
22030530-049B	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	SW-846 9214 (Dissolved)				03/31/2022 15:22
	SW-846 9251 (Dissolved)				03/25/2022 20:07
22030530-049C	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/25/2022 11:06	03/28/2022 23:49
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/25/2022 11:06	03/29/2022 20:26
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/25/2022 11:06	03/31/2022 19:29

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	SW-846 7470A (Total)			03/27/2022 10:20	03/29/2022 17:43
22030530-049D	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			03/25/2022 13:22	03/28/2022 21:47
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			03/25/2022 13:22	04/01/2022 14:14
	SW-846 7470A (Dissolved)			03/27/2022 10:20	03/29/2022 17:45
22030530-049E	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	SW-846 9012A (Total)			03/25/2022 13:27	03/28/2022 15:16
22030530-049F	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	SW-846 9012A (Dissolved)			03/25/2022 13:27	03/28/2022 12:57
22030530-049G	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	SW-846 9066 (Total)				03/28/2022 12:55
22030530-049H	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	SW-846 9066 (Dissolved)				03/28/2022 11:52
22030530-049I	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				03/25/2022 19:25
22030530-049J	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	Standard Methods 4500-NH3 G (Dissolved) 1997, 2011				03/25/2022 18:27
22030530-049K	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				03/24/2022 12:53
22030530-049L	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	EPA 314.0				04/05/2022 0:00
22030530-049M	Field Blank	03/23/2022 13:30	03/24/2022 7:50		
	SW-846 9036 (Dissolved)				04/06/2022 13:18

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

STANDARD METHOD 4500-H B 2001 FIELD

Batch R308977		SampType: LCS		Units							
SampID: LCS-R308977											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
pH	*	1.00		7.06	7.000	0	100.9	98.57	101.4	03/22/2022	
pH	*	1.00		7.05	7.000	0	100.7	98.57	101.4	03/23/2022	

STANDARD METHODS 2510 B FIELD

Batch R308977		SampType: LCS		Units $\mu\text{S/cm}$							Date Analyzed
SampID: LCS-R308977											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Spec. Conductance, Field	*	0		1460	1409	0	103.3	90	110	03/23/2022	
Spec. Conductance, Field	*	0		1510	1409	0	107.4	90	110	03/22/2022	

STANDARD METHODS 2320 B 1997, 2011

Batch R308865		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						03/29/2022

Batch R308865		SampType: LCS		Units mg/L							
SampID: LCS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Alkalinity, Total (as CaCO3)		0		235	236.0	0	99.6	90	110	03/29/2022	

Batch R308865		SampType: DUP		Units mg/L					RPD Limit: 10		
SampID: 22030530-013ADUP											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Alkalinity, Total (as CaCO3)			0		239				232.0	2.97	03/29/2022

Batch R308865		SampType: DUP		Units mg/L					RPD Limit: 10		
SampID: 22030530-049ADUP											Date Analyzed
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Alkalinity, Total (as CaCO3)			0		2				2.000	0.00	03/29/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R309037		SampType: MBLK		Units mg/L							
SampID: MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Total Dissolved Solids		20	J	16	16.00	0	100.0	-100	100	03/28/2022	
Total Dissolved Solids		20	J	16	16.00	0	100.0	-100	100	03/28/2022	

Batch R309037		SampType: LCS		Units mg/L							
SampID: LCS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Total Dissolved Solids		20		944	1000	0	94.4	90	110	03/28/2022	
Total Dissolved Solids		20		980	1000	0	98.0	90	110	03/28/2022	

Batch R309037		SampType: DUP		Units mg/L				RPD Limit: 5			
SampID: 22030530-011ADUP											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids			20		438				456.0	4.03	03/28/2022

Batch R309037		SampType: DUP		Units mg/L				RPD Limit: 5			
SampID: 22030530-030ADUP											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Total Dissolved Solids		20		514				514.0	0.00	03/28/2022	

Batch R309039		SampType: MBLK		Units mg/L							
SampID: MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	03/29/2022	

Batch R309039		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		944	1000	0	94.4	90	110	03/29/2022	

Batch R309039		SampType: DUP		Units mg/L					RPD Limit: 5		
SampID: 22030530-003ADUP											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids			20		468				470.0	0.43	03/29/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R309043 SampType: MBLK Units mg/L

SampleID: 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	03/30/2022
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	03/30/2022

Batch R309043 SampType: LCS Units mg/L

SampleID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		956	1000	0	95.6	90	110	03/30/2022
Total Dissolved Solids		20		940	1000	0	94.0	90	110	03/30/2022

Batch R309043 SampType: DUP Units mg/L

SampleID: 22030530-002ADUP

RPD Limit: 5

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		518				522.0	0.77	03/30/2022

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

Batch R308756 SampType: MS Units mg/L

SampleID: 22030530-004JMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10		1.83	2.000	0.03000	90.0	90	110	03/25/2022

Batch R308756 SampType: MSD Units mg/L

SampleID: 22030530-004JMSD

RPD Limit: 10

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Ammonia (as N)		0.10		1.83	2.000	0.03000	90.2	1.830	0.16	03/25/2022

Batch R308756 SampType: MS Units mg/L

SampleID: 22030530-011IMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	1.75	2.000	0	87.6	90	110	03/25/2022

Batch R308756 SampType: MSD Units mg/L

SampleID: 22030530-011IMS

RPD Limit: 10

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	1.78	2.000	0	88.8	1.752	1.36	03/25/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch R308756 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	03/25/2022

Batch R308756 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	03/25/2022

Batch R308856 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	03/29/2022

Batch R308856 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		1.07	1.000	0	107.4	90	110	03/29/2022

Batch R308922 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	03/30/2022

Batch R308922 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		1.03	1.000	0	102.5	90	110	03/30/2022

Batch R308922 SampType: MS Units mg/L

SampID: 22030530-005IMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	1.75	2.000	0	87.5	90	110	03/30/2022

Batch R308922 SampType: MSD Units mg/L

RPD Limit: 10

SampID: 22030530-005IMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	1.61	2.000	0	80.4	1.750	8.52	03/30/2022



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch R308922 SampType: MS Units mg/L

SampleID: 22030530-013IMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	1.75	2.000	0	87.4	90	110	03/30/2022

Batch R308922 SampType: MSD Units mg/L

RPD Limit: 10

SampleID: 22030530-013IMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	1.74	2.000	0	87.2	1.747	0.23	03/30/2022

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

Batch R308687 SampType: MBLK Units mg/L

SampleID: 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	03/24/2022
Nitrogen, Nitrite (as N)		0.05		< 0.05	0.0250	0	0	-100	100	03/24/2022

Batch R308687 SampType: LCS Units mg/L

SampleID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.25		1.47	1.460	0	100.7	90	110	03/24/2022
Nitrogen, Nitrite (as N)		0.25		1.48	1.460	0	101.4	90	110	03/24/2022

Batch R308687 SampType: MS Units mg/L

SampleID: 22030530-003AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		0.50	0.5000	0	99.8	85	115	03/24/2022

Batch R308687 SampType: MSD Units mg/L

RPD Limit: 10

SampleID: 22030530-003AMSD

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	99.4	0.4990	0.40	03/24/2022

Batch R308687 SampType: MS Units mg/L

SampleID: 22030530-006AMS

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	03/24/2022



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch R308687		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed
SampID: 22030530-006AMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Nitrogen, Nitrite (as N)		0.05		0.49	0.5000	0	98.0	0.4880	0.41	03/24/2022	

Batch R308687		SampType: MS		Units mg/L							
SampID: 22030530-017AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Nitrite (as N)		0.05		0.49	0.5000	0	98.4	85	115	03/24/2022	

Batch R308687		SampType: MSD		Units mg/L				RPD Limit: 10				Date Analyzed
SampID: 22030530-017AMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Nitrogen, Nitrite (as N)			0.05		0.49	0.5000	0	98.0	0.4920	0.41	03/24/2022	

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

Batch R308736		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Nitrate-Nitrite (as N)		0.050		< 0.050	0.0090	0	0	-100	100	03/24/2022	

Batch R308736		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		0.499	0.5000	0	99.8	90	110	03/24/2022	

Batch R308736		SampType: MS		Units mg/L							
SampID: 22030530-001AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Nitrogen, Nitrate-Nitrite (as N)		1.00		14.9	5.000	10.38	91.2	85	115	03/24/2022	

Batch R308736		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 22030530-001AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)			1.00		14.9	5.000	10.38	90.9	14.94	0.10	03/24/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch R308736 SampType: MS Units mg/L

SampID: 22030530-011AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		1.00		8.52	5.000	3.614	98.2	85	115	03/24/2022

Batch R308736 SampType: MSD Units mg/L

RPD Limit: 10

SampID: 22030530-011AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		1.00		8.40	5.000	3.614	95.6	8.522	1.50	03/24/2022

Batch R308736 SampType: MS Units mg/L

SampID: 22030530-036AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.500		5.46	2.500	2.986	98.8	85	115	03/24/2022

Batch R308736 SampType: MSD Units mg/L

RPD Limit: 10

SampID: 22030530-036AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.500		5.44	2.500	2.986	98.4	5.455	0.18	03/24/2022

Batch R308811 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-Nitrite (as N)		0.050		< 0.050	0.0090	0	0	-100	100	03/25/2022

Batch R308811 SampType: LCS Units mg/L

SampID: ICB/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.050		0.504	0.5000	0	100.8	90	110	03/25/2022

SW-846 9012A (DISSOLVED)

Batch 189001 SampType: MS Units mg/L

SampID: 22030530-005FMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.028	0.0250	0	110.8	75	125	03/28/2022



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9012A (DISSOLVED)

Batch 189001		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed
SampID: 22030530-005FMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Cyanide		0.005		0.027	0.0250	0	109.8	0.02769	0.87	03/28/2022	

SW-846 9012A (TOTAL)

Batch 189001		SampType: MBLK		Units mg/L							
SampID: MBLK 220325 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	03/28/2022	

Batch 189001		SampType: LCS		Units mg/L							
SampID: LCS 220325 TCN1											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Cyanide		0.005		0.027	0.0250	0	109.0	85	115	03/28/2022	

Batch 189001		SampType: MS		Units mg/L							
SampID: 22030530-004EMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Cyanide		0.005		0.033	0.0250	0.005585	109.5	75	125	03/28/2022	

Batch 189001		SampType: MSD		Units mg/L				RPD Limit: 15				Date Analyzed
SampID: 22030530-004EMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Cyanide			0.005		0.032	0.0250	0.005585	107.3	0.03296	1.68	03/28/2022	

Batch 189002		SampType: MBLK		Units mg/L							
SampID: MBLK 220325 TCN2											
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	03/28/2022	

Batch 189002		SampType: LCS		Units mg/L							
SampID: LCS 220325 TCN2											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Cyanide		0.005		0.028	0.0250	0	110.8	85	115	03/28/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9012A (TOTAL)

Batch 189002 SampType: MS Units mg/L

SampleID: 22030530-017EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.032	0.0250	0.005700	106.5	75	125	03/28/2022

Batch 189002 SampType: MSD Units mg/L

RPD Limit: 15

SampleID: 22030530-017EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005		0.033	0.0250	0.005700	107.2	0.03232	0.59	03/28/2022

Batch 189002 SampType: MS Units mg/L

SampleID: 22030530-035EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.028	0.0250	0	111.0	75	125	03/28/2022

Batch 189002 SampType: MSD Units mg/L

RPD Limit: 15

SampleID: 22030530-035EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005		0.028	0.0250	0	113.1	0.02776	1.87	03/28/2022

SW-846 9036 (DISSOLVED)

Batch R308817 SampType: MS Units mg/L

SampleID: 22030530-015BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		20		96	40.00	60.51	89.3	85	115	03/25/2022

Batch R308817 SampType: MSD Units mg/L

RPD Limit: 10

SampleID: 22030530-015BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		20		95	40.00	60.51	86.4	96.24	1.21	03/25/2022

Batch R308817 SampType: MS Units mg/L

SampleID: 22030530-036BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		161	100.0	73.18	88.2	85	115	03/25/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9036 (DISSOLVED)

Batch R308817		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 22030530-036BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			50		170	100.0	73.18	96.7	161.4	5.16	03/25/2022

Batch R309090		SampType: MS		Units mg/L							
SampID: 22030530-001BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		146	100.0	53.39	93.1	85	115	04/01/2022	

Batch R309090		SampType: MSD		Units mg/L				RPD Limit: 10				Date Analyzed
SampID: 22030530-001BMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate			50		158	100.0	53.39	104.6	146.4	7.61	04/01/2022	

Batch R309090		SampType: MS		Units mg/L							
SampID: 22030530-020BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		240	100.0	144.3	95.2	85	115	04/01/2022	

Batch R309090		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 22030530-020BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			50		247	100.0	144.3	103.0	239.5	3.21	04/01/2022

SW-846 9036 (TOTAL)

Batch R308817		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	03/25/2022	

Batch R308817		SampType: LCS		Units mg/L							
SampID: ICV/LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		19	20.00	0	96.8	90	110	03/25/2022	

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9036 (TOTAL)

Batch R308817		SampType: MS		Units mg/L							
SampID: 22030530-002AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate		50		178	100.0	90.46	87.3	85	115	03/25/2022	

Batch R308817		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 22030530-002AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			50		181	100.0	90.46	90.8	177.7	1.99	03/25/2022

Batch R308817		SampType: MS		Units mg/L							
SampID: 22030530-015AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		20		95	40.00	61.36	85.1	85	115	03/25/2022	

Batch R308817		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 22030530-015AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			20		96	40.00	61.36	87.4	95.40	0.98	03/25/2022

Batch R308817		SampType: MS		Units mg/L							
SampID: 22030530-036AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		163	100.0	69.60	93.2	85	115	03/25/2022	

Batch R308817		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 22030530-036AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			50		166	100.0	69.60	96.5	162.8	2.06	03/25/2022

Batch R309090		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	04/01/2022	

Batch R309090		SampType: MBLK		Units mg/L							
SampID: MBLK 220327											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate	*	10		< 10	7.620	0	0	-100	100	04/01/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9036 (TOTAL)

Batch R309090		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	99.6	90	110	04/01/2022	

Batch R309284		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	04/06/2022	

Batch R309284		SampType: LCS		Units mg/L							
SampID: ICV/LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		19	20.00	0	95.3	90	110	04/06/2022	

SW-846 9066 (DISSOLVED)

Batch R308861		SampType: MS		Units mg/L						
SampID: 22030530-011GMS										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Phenols		0.005		0.062	0.0500	0.01284	98.5	85	115	03/28/2022

Batch R308861		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-011GMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Phenols			0.005		0.067	0.0500	0.01284	108.5	0.06207	7.76	03/28/2022

SW-846 9066 (TOTAL)

Batch R308861		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	03/28/2022	

Batch R308861		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		0.050	0.0500	0	100.4	90	110	03/28/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9066 (TOTAL)

Batch R308861		SampType: MS		Units mg/L							
SampID: 22030530-011FMS											Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Phenols		0.005		0.055	0.0500	0.01118	87.0	85	115	03/28/2022	

Batch R308861		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed	
SampID: 22030530-011FMSD												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Phenols		0.005		0.059	0.0500	0.01118	96.6	0.05468	8.43			

SW-846 9214 (DISSOLVED)

Batch R308988		SampType: MS		Units mg/L							
SampID: 22030530-007BMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		2.15	2.000	0.1210	101.4	75	125	03/31/2022	

Batch R308988		SampType: MSD		Units mg/L		RPD Limit: 15					Date Analyzed	
SampID: 22030530-007BMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Fluoride			0.10		2.25	2.000	0.1210	106.2	2.149	4.41		

Batch R308988		SampType: MS		Units mg/L							
SampID: 22030530-015BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.39	2.000	0.2480	106.9	75	125	03/31/2022	

Batch R308988		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-015BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.38	2.000	0.2480	106.5	2.386	0.34	03/31/2022

Batch R308988		SampType: MS		Units mg/L							
SampID: 22030530-049BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.12	2.000	0	106.2	75	125	03/31/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9214 (DISSOLVED)

Batch R308988		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed
SampID: 22030530-049BMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Fluoride		0.10		2.11	2.000	0	105.4	2.125	0.76	03/31/2022	

SW-846 9214 (TOTAL)

Batch R308988		SampType: MBLK		Units mg/L							
SampID: MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		< 0.10	0.0370	0	0	-100	100	03/31/2022	

Batch R308988		SampType: LCS		Units mg/L							
SampID: LCS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		0.99	1.000	0	99.0	90	110	03/31/2022	

Batch R308988		SampType: MS		Units mg/L							
SampID: 22030530-012AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		2.33	2.000	0.2240	105.4	75	125		
											03/31/2022

Batch R308988		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-012AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.38	2.000	0.2240	107.6	2.333	1.83	03/31/2022

Batch R308988		SampType: MS		Units mg/L							
SampID: 22030530-023AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.12	2.000	0.1230	99.8	75	125	03/31/2022	

Batch R308988		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-023AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.09	2.000	0.1230	98.5	2.119	1.23	03/31/2022



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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9214 (TOTAL)

Batch R308988		SampType: MS		Units mg/L							
SampID: 22030530-037AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		2.26	2.000	0.2260	101.7	75	125	03/31/2022	

Batch R308988		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-037AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.25	2.000	0.2260	101.4	2.259	0.27	03/31/2022

Batch R308988		SampType: MS		Units mg/L							
SampID: 22030530-047AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.09	2.000	0.1620	96.2	75	125	03/31/2022	

Batch R308988		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed	
SampID: 22030530-047AMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Fluoride			0.10		2.09	2.000	0.1620	96.6	2.087	0.29	03/31/2022	

SW-846 9251 (DISSOLVED)

Batch R308818		SampType: MS		Units mg/L							
SampID: 22030530-001BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		2		69	40.00	31.97	92.7	85	115	03/25/2022	

Batch R308818		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-001BMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Chloride		2		68	40.00	31.97	91.0	69.05	0.99	03/25/2022	

Batch R308818		SampType: MS		Units mg/L							
SampID: 22030530-015BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		2	E	113	40.00	75.41	93.8	85	115	03/25/2022	

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9251 (DISSOLVED)

Batch R308818		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed
SampID: 22030530-015BMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride		2	E	112	40.00	75.41	92.0	112.9	0.66	03/25/2022	

Batch R308818		SampType: MS		Units mg/L							
SampID: 22030530-020BMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		2		100	40.00	63.24	90.8	85	115	03/25/2022	

Batch R308818		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed	
SampID: 22030530-020BMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride			2		99	40.00	63.24	89.0	99.55	0.71	03/25/2022	

Batch R308818		SampType: MS		Units mg/L							
SampID: 22030530-036BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		5		186	100.0	94.24	92.1	85	115	03/25/2022	

Batch R308818		SampType: MSD		Units mg/L		RPD Limit: 15					Date Analyzed	
SampID: 22030530-036BMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride			5		185	100.0	94.24	90.4	186.3	0.91	03/25/2022	

SW-846 9251 (TOTAL)

Batch R308818		SampType: MBLK		Units mg/L							Date Analyzed	
SampID: ICB/MBLK												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Chloride		1		< 1	0.5000	0	0	-100	100	03/25/2022		

Batch R308818		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	101.4	90	110	03/25/2022	



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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9251 (TOTAL)

Batch R308818		SampType: MS		Units mg/L							
SampID: 22030530-002AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		5		175	100.0	81.04	93.5	85	115	03/25/2022	

Batch R308818		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-002AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			5		178	100.0	81.04	96.5	174.6	1.69	03/25/2022

Batch R308818		SampType: MS		Units mg/L							
SampID: 22030530-015AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		2	E	111	40.00	75.11	89.8	85	115	03/25/2022	

Batch R308818		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-015AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			2	E	114	40.00	75.11	96.0	111.0	2.19	03/25/2022

Batch R308818		SampType: MS		Units mg/L							
SampID: 22030530-036AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		5		189	100.0	93.43	95.8	85	115	03/25/2022	

Batch R308818		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-036AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			5		191	100.0	93.43	97.8	189.2	1.05	03/25/2022

Batch R309091		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	04/01/2022	

Batch R309091		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		21	20.00	0	104.2	90	110	04/01/2022	



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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 9251 (TOTAL)

Batch R309285		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	04/06/2022	

Batch R309285		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		19	20.00	0	97.3	90	110	04/06/2022	

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

Batch 189014		SampType: MBLK		Units mg/L							
SampID: MBLK-189014											
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	03/29/2022	
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	03/29/2022	

Batch 189014		SampType: LCS		Units mg/L						
SampID: LCS-189014										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.35	2.500	0	94.0	85	115	03/29/2022
Magnesium		0.0500		2.41	2.500	0	96.5	85	115	03/29/2022



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189015 SampType: MBLK Units mg/L

SampleID: MBLK-189015

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		0.0250		< 0.0250	0.0127	0	0	-100	100	03/28/2022
Antimony		0.0500		< 0.0500	0.0068	0	0	-100	100	03/29/2022
Arsenic		0.0250		< 0.0250	0.0087	0	0	-100	100	03/29/2022
Arsenic		0.0250		< 0.0250	0.0087	0	0	-100	100	03/28/2022
Barium		0.0025		< 0.0025	0.0007	0	0	-100	100	03/28/2022
Barium		0.0025		< 0.0025	0.0007	0	0	-100	100	03/29/2022
Beryllium		0.0005		< 0.0005	0.0002	0	0	-100	100	03/28/2022
Beryllium		0.0005		< 0.0005	0.0002	0	0	-100	100	03/29/2022
Cadmium		0.0020		< 0.0020	0.0005	0	0	-100	100	03/28/2022
Cadmium		0.0020		< 0.0020	0.0005	0	0	-100	100	03/29/2022
Calcium		0.100		< 0.100	0.0350	0	0	-100	100	03/28/2022
Calcium		0.100		< 0.100	0.0350	0	0	-100	100	03/29/2022
Chromium		0.0050		< 0.0050	0.0028	0	0	-100	100	03/29/2022
Chromium		0.0050		< 0.0050	0.0028	0	0	-100	100	03/28/2022
Cobalt		0.0050		< 0.0050	0.0020	0	0	-100	100	03/29/2022
Cobalt		0.0050		< 0.0050	0.0020	0	0	-100	100	03/28/2022
Copper		0.0050		< 0.0050	0.0013	0	0	-100	100	03/28/2022
Lead		0.0150		< 0.0150	0.0014	0	0	-100	100	03/29/2022
Lead		0.0150		< 0.0150	0.0014	0	0	-100	100	03/28/2022
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	03/29/2022
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	03/28/2022
Molybdenum		0.0100		< 0.0100	0.0037	0	0	-100	100	03/29/2022
Molybdenum		0.0100		< 0.0100	0.0037	0	0	-100	100	03/28/2022
Nickel		0.0050		< 0.0050	0.0016	0	0	-100	100	03/28/2022
Selenium		0.0400		< 0.0400	0.0170	0	0	-100	100	03/29/2022
Selenium		0.0400		< 0.0400	0.0170	0	0	-100	100	03/28/2022
Silver		0.0070		< 0.0070	0.0027	0	0	-100	100	03/28/2022
Thallium		0.0500		< 0.0500	0.0111	0	0	-100	100	03/29/2022
Thallium		0.0500		< 0.0500	0.0111	0	0	-100	100	03/28/2022
Vanadium		0.0100		< 0.0100	0.0009	0	0	-100	100	03/28/2022
Zinc		0.0100		< 0.0100	0.0050	0	0	-100	100	03/28/2022



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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189015		SampType: LCS		Units mg/L							
SampID: LCS-189015											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Aluminum		0.0250		1.84	2.000	0	91.8	85	115	03/28/2022	
Antimony		0.0500		0.457	0.5000	0	91.4	85	115	03/29/2022	
Arsenic		0.0250		0.478	0.5000	0	95.7	85	115	03/28/2022	
Arsenic		0.0250		0.485	0.5000	0	97.1	85	115	03/29/2022	
Barium		0.0025		1.89	2.000	0	94.5	85	115	03/28/2022	
Barium		0.0025		1.90	2.000	0	94.8	85	115	03/29/2022	
Beryllium		0.0005		0.0471	0.0500	0	94.2	85	115	03/29/2022	
Beryllium		0.0005		0.0466	0.0500	0	93.2	85	115	03/28/2022	
Cadmium		0.0020		0.0458	0.0500	0	91.6	85	115	03/28/2022	
Cadmium		0.0020		0.0466	0.0500	0	93.2	85	115	03/29/2022	
Calcium		0.100		2.37	2.500	0	94.7	85	115	03/28/2022	
Calcium		0.100		2.39	2.500	0	95.5	85	115	03/29/2022	
Chromium		0.0050		0.183	0.2000	0	91.5	85	115	03/28/2022	
Chromium		0.0050		0.186	0.2000	0	93.0	85	115	03/29/2022	
Cobalt		0.0050		0.469	0.5000	0	93.8	85	115	03/28/2022	
Cobalt		0.0050		0.480	0.5000	0	95.9	85	115	03/29/2022	
Copper		0.0050		0.240	0.2500	0	96.0	85	115	03/28/2022	
Lead		0.0150		0.457	0.5000	0	91.4	85	115	03/28/2022	
Lead		0.0150		0.462	0.5000	0	92.4	85	115	03/29/2022	
Magnesium		0.0500		2.42	2.500	0	96.9	85	115	03/28/2022	
Magnesium		0.0500		2.46	2.500	0	98.4	85	115	03/29/2022	
Molybdenum		0.0100		0.464	0.5000	0	92.8	85	115	03/28/2022	
Molybdenum		0.0100		0.465	0.5000	0	93.0	85	115	03/29/2022	
Nickel		0.0050		0.463	0.5000	0	92.6	85	115	03/28/2022	
Selenium		0.0400		0.472	0.5000	0	94.4	85	115	03/29/2022	
Selenium		0.0400		0.458	0.5000	0	91.7	85	115	03/28/2022	
Silver		0.0070		0.0471	0.0500	0	94.2	85	115	03/28/2022	
Thallium		0.0500		0.238	0.2500	0	95.1	85	115	03/28/2022	
Thallium		0.0500		0.242	0.2500	0	96.7	85	115	03/29/2022	
Vanadium		0.0100		0.464	0.5000	0	92.9	85	115	03/28/2022	
Zinc		0.0100		0.458	0.5000	0	91.6	85	115	03/28/2022	

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 3005A, 6010B, METALS BY ICP (DISSOLVED)
Batch 190778 **SampType:** MBLK **Units** mg/L
SampleID: MBLK-190778

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	04/19/2022
Iron		0.0400		< 0.0400	0.0200	0	0	-100	100	04/19/2022
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	04/19/2022
Manganese		0.0070		< 0.0070	0.0025	0	0	-100	100	04/19/2022

Batch 190778 **SampType:** LCS **Units** mg/L
SampleID: LCS-190778

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.35	2.500	0	93.9	85	115	04/19/2022
Iron		0.0400		1.78	2.000	0	89.2	85	115	04/19/2022
Magnesium		0.0500		2.41	2.500	0	96.4	85	115	04/19/2022
Manganese		0.0070		0.454	0.5000	0	90.9	85	115	04/19/2022

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)
Batch 188963 **SampType:** MBLK **Units** mg/L
SampleID: MBLK-188963

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	03/30/2022
Calcium		0.100		< 0.100	0.0350	0	0	-100	100	03/25/2022
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	03/25/2022
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	03/30/2022
Potassium		0.100		< 0.100	0.0400	0	0	-100	100	03/30/2022
Sodium		0.0500		< 0.0500	0.0180	0	0	-100	100	03/30/2022
Sodium		0.0500		< 0.0500	0.0180	0	0	-100	100	03/25/2022

Batch 188963 **SampType:** LCS **Units** mg/L
SampleID: LCS-188963

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.72	2.500	0	108.9	85	115	03/25/2022
Calcium		0.100		2.73	2.500	0	109.2	85	115	03/30/2022
Magnesium		0.0500		2.81	2.500	0	112.3	85	115	03/25/2022
Magnesium		0.0500		2.83	2.500	0	113.4	85	115	03/30/2022
Potassium		0.100		2.58	2.500	0	103.3	85	115	03/30/2022
Sodium		0.0500		2.53	2.500	0	101.3	85	115	03/30/2022
Sodium		0.0500		2.52	2.500	0	101.0	85	115	03/25/2022



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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 188963 SampType: MS Units mg/L

SamplID: 22030530-027CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	140	2.500	140.2	-24.0	75	125	03/30/2022
Magnesium		0.0500		40.8	2.500	38.90	75.2	75	125	03/30/2022
Potassium		0.100		6.44	2.500	3.833	104.4	75	125	03/30/2022
Sodium		0.0500	S	59.3	2.500	58.43	35.6	75	125	03/30/2022

Batch 188963 SampType: MSD Units mg/L

RPD Limit: 20

SamplID: 22030530-027CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	140	2.500	140.2	-4.0	139.6	0.36	03/30/2022
Magnesium		0.0500	S	40.4	2.500	38.90	60.4	40.78	0.91	03/30/2022
Potassium		0.100		6.44	2.500	3.833	104.2	6.443	0.09	03/30/2022
Sodium		0.0500	S	59.7	2.500	58.43	52.4	59.32	0.71	03/30/2022

Batch 188980 SampType: MBLK Units mg/L

SamplID: MBLK-188980

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	03/29/2022
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	03/29/2022
Potassium		0.100		< 0.100	0.0500	0	0	-100	100	04/27/2022
Potassium		0.100	J	0.040	0.0400	0	100.0	-100	100	03/31/2022
Sodium		0.0500		< 0.0500	0.0180	0	0	-100	100	03/29/2022

Batch 188980 SampType: LCS Units mg/L

SamplID: LCS-188980

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.63	2.500	0	105.3	85	115	03/29/2022
Magnesium		0.0500		2.66	2.500	0	106.6	85	115	03/29/2022
Potassium		0.100		2.48	2.500	0	99.3	85	115	04/27/2022
Potassium		0.100		2.52	2.500	0	100.7	85	115	03/31/2022
Sodium		0.0500		2.35	2.500	0	93.9	85	115	03/29/2022

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 188980		SampType: LCSD		Units mg/L				RPD Limit: 20		
SampID: LCSD-188980										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		2.66	2.500	0	106.3	2.633	0.95	03/29/2022
Magnesium		0.0500		2.71	2.500	0	108.4	2.664	1.68	03/29/2022
Potassium		0.100		2.56	2.500	0	102.5	2.517	1.81	03/31/2022
Potassium		0.100		2.55	2.500	0	102.1	2.534	0.71	04/27/2022
Sodium		0.0500		2.35	2.500	0	94.2	2.348	0.26	03/29/2022

Batch 188980		SampType: MS		Units mg/L						
SampID: 22030530-035CMS										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	79.0	2.500	78.22	32.4	75	125	03/29/2022
Magnesium		0.0500		33.8	2.500	31.69	83.2	75	125	03/29/2022
Potassium		0.100		9.82	2.500	7.374	97.8	75	125	04/27/2022
Sodium		0.0500	S	49.6	2.500	47.92	68.8	75	125	03/29/2022

Batch	188980	SampType:	MSD	Units				mg/L				RPD Limit: 20			
SampID: 22030530-035CMSD												Date Analyzed			
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD					
Calcium			0.100	S	77.9	2.500	78.22	-12.0	79.03	1.41	03/29/2022				
Magnesium			0.0500	S	32.7	2.500	31.69	42.0	33.77	3.10	03/29/2022				
Potassium			0.100		9.72	2.500	7.374	93.8	9.818	1.02	04/27/2022				
Sodium			0.0500	S	48.7	2.500	47.92	32.8	49.64	1.83	03/29/2022				



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189006 SampType: MBLK Units mg/L

SampleID: MBLK-189006

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		0.0250		< 0.0250	0.0087	0	0	-100	100	03/28/2022
Barium		0.0025		< 0.0025	0.0007	0	0	-100	100	03/28/2022
Beryllium		0.0005		< 0.0005	0.0002	0	0	-100	100	03/28/2022
Cadmium		0.0020		< 0.0020	0.0005	0	0	-100	100	03/28/2022
Calcium		0.100		< 0.100	0.0350	0	0	-100	100	03/28/2022
Chromium		0.0050		< 0.0050	0.0028	0	0	-100	100	03/28/2022
Cobalt		0.0050		< 0.0050	0.0020	0	0	-100	100	03/28/2022
Lead		0.0150		< 0.0150	0.0040	0	0	-100	100	03/28/2022
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	03/28/2022
Molybdenum		0.0100		< 0.0100	0.0037	0	0	-100	100	03/28/2022
Potassium		0.100	JS	0.045	0.0400	0	111.8	-100	100	03/28/2022
Selenium		0.0400		< 0.0400	0.0170	0	0	-100	100	03/28/2022
Sodium		0.0500		< 0.0500	0.0180	0	0	-100	100	03/28/2022
Thallium		0.0500		< 0.0500	0.0111	0	0	-100	100	03/28/2022

Batch 189006 SampType: LCS Units mg/L

SampleID: LCS-189006

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		0.0250		0.533	0.5000	0	106.6	85	115	03/28/2022
Barium		0.0025		2.09	2.000	0	104.3	85	115	03/28/2022
Beryllium		0.0005		0.0516	0.0500	0	103.2	85	115	03/28/2022
Cadmium		0.0020		0.0502	0.0500	0	100.4	85	115	03/28/2022
Calcium		0.100		2.59	2.500	0	103.6	85	115	03/28/2022
Chromium		0.0050		0.202	0.2000	0	100.8	85	115	03/28/2022
Cobalt		0.0050		0.514	0.5000	0	102.7	85	115	03/28/2022
Lead		0.0150		0.500	0.5000	0	99.9	85	115	03/28/2022
Magnesium		0.0500		2.66	2.500	0	106.6	85	115	03/28/2022
Molybdenum		0.0100		0.514	0.5000	0	102.7	85	115	03/28/2022
Potassium		0.100	B	2.44	2.500	0	97.6	85	115	03/28/2022
Selenium		0.0400		0.504	0.5000	0	100.8	85	115	03/28/2022
Sodium		0.0500		2.38	2.500	0	95.3	85	115	03/28/2022
Thallium		0.0500		0.257	0.2500	0	102.9	85	115	03/28/2022



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189006 SampType: MS Units mg/L

SampleID: 22030530-047BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		102	2.500	100.2	88.0	75	125	03/29/2022
Magnesium		0.0500		3.13	2.500	0.4110	108.8	75	125	03/29/2022
Potassium		1.00	B	28.5	2.500	25.75	111.6	75	125	03/30/2022
Sodium		0.0500	S	124	2.500	123.0	60.0	75	125	03/29/2022

Batch 189006 SampType: MSD Units mg/L

RPD Limit: 20

SampleID: 22030530-047BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		103	2.500	100.2	104.0	102.4	0.39	03/29/2022
Magnesium		0.0500		3.10	2.500	0.4110	107.6	3.132	0.99	03/29/2022
Potassium		1.00	B	28.2	2.500	25.75	97.6	28.54	1.23	03/30/2022
Sodium		0.0500		125	2.500	123.0	80.0	124.5	0.40	03/29/2022

Batch 191095 SampType: MBLK Units mg/L

SampleID: MBLK-191095

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	04/27/2022
Molybdenum		0.0100		< 0.0100	0.0037	0	0	-100	100	04/27/2022
Potassium		0.100		< 0.100	0.0400	0	0	-100	100	04/27/2022
Selenium		0.0400		< 0.0400	0.0170	0	0	-100	100	04/27/2022
Sodium		0.0500		< 0.0500	0.0180	0	0	-100	100	04/27/2022
Thallium		0.0500		< 0.0500	0.0111	0	0	-100	100	04/27/2022

Batch 191095 SampType: LCS Units mg/L

SampleID: LCS-191095

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.69	2.500	0	107.6	85	115	04/27/2022
Molybdenum		0.0100		0.523	0.5000	0	104.6	85	115	04/27/2022
Potassium		0.100		2.61	2.500	0	104.2	85	115	04/27/2022
Selenium		0.0400		0.537	0.5000	0	107.4	85	115	04/27/2022
Sodium		0.0500		2.62	2.500	0	104.6	85	115	04/27/2022
Thallium		0.0500		0.266	0.2500	0	106.3	85	115	04/27/2022



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189014		SampType: MBLK		Units mg/L							Date Analyzed	
SampID: MBLK-189014												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Aluminum		0.0250		< 0.0250	0.0125	0	0	-100	100	03/31/2022		
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	03/31/2022		
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	03/31/2022		
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	03/31/2022		
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	03/31/2022		
Boron		0.0250		< 0.0250	0.0105	0	0	-100	100	03/31/2022		
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	03/31/2022		
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	03/31/2022		
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	03/31/2022		
Copper		0.0010		< 0.0010	0.0003	0	0	-100	100	03/31/2022		
Iron		0.0250		< 0.0250	0.0115	0	0	-100	100	03/31/2022		
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	03/31/2022		
Manganese		0.0020		< 0.0020	0.0008	0	0	-100	100	03/31/2022		
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	03/31/2022		
Nickel		0.0010		< 0.0010	0.0004	0	0	-100	100	03/31/2022		
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	03/31/2022		
Silver		0.0010		< 0.0010	0.0001	0	0	-100	100	03/31/2022		
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	03/31/2022		
Vanadium		0.0050		< 0.0050	0.0028	0	0	-100	100	03/31/2022		
Zinc		0.0150		< 0.0150	0.0059	0	0	-100	100	04/01/2022		



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189014		SampType: LCS		Units mg/L							
SampID: LCS-189014											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Aluminum		0.0250		1.88	2.000	0	94.0	80	120	03/31/2022	
Antimony		0.0010		0.482	0.5000	0	96.3	80	120	03/31/2022	
Arsenic		0.0010		0.483	0.5000	0	96.7	80	120	03/31/2022	
Barium		0.0010		1.96	2.000	0	98.0	80	120	03/31/2022	
Beryllium		0.0010		0.0473	0.0500	0	94.6	80	120	03/31/2022	
Boron		0.0250		0.499	0.5000	0	99.8	80	120	03/31/2022	
Cadmium		0.0010		0.0460	0.0500	0	91.9	80	120	03/31/2022	
Chromium		0.0015		0.192	0.2000	0	95.9	80	120	03/31/2022	
Cobalt		0.0010		0.478	0.5000	0	95.7	80	120	03/31/2022	
Copper		0.0010		0.245	0.2500	0	97.9	80	120	03/31/2022	
Iron		0.0250		1.78	2.000	0	88.9	80	120	03/31/2022	
Lead		0.0010		0.493	0.5000	0	98.6	80	120	03/31/2022	
Manganese		0.0020		0.486	0.5000	0	97.2	80	120	03/31/2022	
Molybdenum		0.0015		0.474	0.5000	0	94.7	80	120	03/31/2022	
Nickel		0.0010		0.478	0.5000	0	95.7	80	120	03/31/2022	
Selenium		0.0010		0.456	0.5000	0	91.2	80	120	03/31/2022	
Silver		0.0010		0.0475	0.0500	0	95.0	80	120	03/31/2022	
Thallium		0.0020		0.245	0.2500	0	97.9	80	120	03/31/2022	
Vanadium		0.0050		0.482	0.5000	0	96.4	80	120	03/31/2022	
Zinc		0.0150		0.455	0.5000	0	91.1	80	120	04/01/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189014		SampType: MS		Units mg/L						
SampID: 22030530-007DMS										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.466	0.5000	0	93.2	75	125	03/31/2022
Arsenic		0.0010		0.455	0.5000	0	91.1	75	125	03/31/2022
Barium		0.0010		1.97	2.000	0.09428	93.6	75	125	03/31/2022
Beryllium		0.0010		0.0447	0.0500	0	89.5	75	125	03/31/2022
Boron		0.0250		0.516	0.5000	0.05738	91.7	75	125	03/31/2022
Cadmium		0.0010		0.0437	0.0500	0	87.4	75	125	03/31/2022
Chromium		0.0015		0.179	0.2000	0	89.3	75	125	03/31/2022
Cobalt		0.0010		0.434	0.5000	0.001421	86.5	75	125	03/31/2022
Copper		0.0010		0.217	0.2500	0.002596	85.9	75	125	03/31/2022
Iron		0.0250		1.67	2.000	0	83.5	75	125	03/31/2022
Lead		0.0010		0.461	0.5000	0	92.2	75	125	03/31/2022
Manganese		0.0020		0.450	0.5000	0	90.0	75	125	03/31/2022
Nickel		0.0010		0.431	0.5000	0.006568	84.9	75	125	03/31/2022
Selenium		0.0010		0.425	0.5000	0	85.0	75	125	03/31/2022
Silver		0.0010		0.0442	0.0500	0	88.3	75	125	03/31/2022
Thallium		0.0020		0.231	0.2500	0	92.4	75	125	03/31/2022
Vanadium		0.0050		0.456	0.5000	0	91.2	75	125	03/31/2022
Zinc		0.0150		0.407	0.5000	0	81.5	75	125	04/01/2022



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch	189014	SampType:	MSD	Units mg/L				RPD Limit: 20		
SampleID: 22030530-007DMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.463	0.5000	0	92.5	0.4660	0.76	03/31/2022
Arsenic		0.0010		0.461	0.5000	0	92.2	0.4554	1.18	03/31/2022
Barium		0.0010		2.00	2.000	0.09428	95.1	1.966	1.56	03/31/2022
Beryllium		0.0010		0.0459	0.0500	0	91.9	0.04475	2.63	03/31/2022
Boron		0.0250		0.529	0.5000	0.05738	94.3	0.5157	2.49	03/31/2022
Cadmium		0.0010		0.0437	0.0500	0	87.4	0.04368	0.03	03/31/2022
Chromium		0.0015		0.182	0.2000	0	90.9	0.1787	1.76	03/31/2022
Cobalt		0.0010		0.442	0.5000	0.001421	88.1	0.4337	1.83	03/31/2022
Copper		0.0010		0.222	0.2500	0.002596	87.9	0.2174	2.24	03/31/2022
Iron		0.0250		1.69	2.000	0	84.5	1.669	1.28	03/31/2022
Lead		0.0010		0.479	0.5000	0	95.7	0.4610	3.76	03/31/2022
Manganese		0.0020		0.459	0.5000	0	91.8	0.4501	1.93	03/31/2022
Nickel		0.0010		0.440	0.5000	0.006568	86.7	0.4312	2.04	03/31/2022
Selenium		0.0010		0.429	0.5000	0	85.9	0.4250	1.03	03/31/2022
Silver		0.0010		0.0437	0.0500	0	87.5	0.04416	0.93	03/31/2022
Thallium		0.0020		0.238	0.2500	0	95.3	0.2310	3.09	03/31/2022
Vanadium		0.0050		0.465	0.5000	0	92.9	0.4560	1.85	03/31/2022
Zinc		0.0150		0.484	0.5000	0	96.9	0.4074	17.24	04/01/2022



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189014		SampType: MS		Units mg/L							Date Analyzed
SampID: 22030530-016DMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Antimony		0.0010		0.457	0.5000	0	91.4	75	125	04/04/2022	
Arsenic		0.0010		0.471	0.5000	0	94.1	75	125	04/04/2022	
Barium		0.0010		2.00	2.000	0.1234	93.7	75	125	04/04/2022	
Beryllium		0.0010		0.0441	0.0500	0	88.1	75	125	04/04/2022	
Boron		0.0250		0.619	0.5000	0.1510	93.6	75	125	04/05/2022	
Cadmium		0.0010		0.0445	0.0500	0	89.1	75	125	04/04/2022	
Chromium		0.0015	S	0.258	0.2000	0.001129	128.4	75	125	03/31/2022	
Cobalt		0.0010		0.622	0.5000	0	124.3	75	125	03/31/2022	
Copper		0.0010		0.307	0.2500	0.002698	121.9	75	125	03/31/2022	
Iron		0.0250	S	2.58	2.000	0.01394	128.2	75	125	03/31/2022	
Lead		0.0010		0.475	0.5000	0	95.0	75	125	04/04/2022	
Manganese		0.0020	S	0.651	0.5000	0.001296	130.0	75	125	03/31/2022	
Nickel		0.0010		0.608	0.5000	0.001095	121.3	75	125	03/31/2022	
Selenium		0.0010		0.583	0.5000	0	116.7	75	125	03/31/2022	
Silver		0.0010		0.0576	0.0500	0	115.2	75	125	03/31/2022	
Thallium		0.0020		0.307	0.2500	0	122.8	75	125	03/31/2022	
Vanadium		0.0050		0.476	0.5000	0	95.2	75	125	04/04/2022	
Zinc		0.0150		0.430	0.5000	0	85.9	75	125	04/05/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189014		SampType: MSD		Units mg/L				RPD Limit: 20		
SampleID: 22030530-016DMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.462	0.5000	0	92.3	0.4572	0.95	04/04/2022
Arsenic		0.0010		0.471	0.5000	0	94.2	0.4706	0.03	04/04/2022
Barium		0.0010		2.00	2.000	0.1234	93.9	1.997	0.21	04/04/2022
Beryllium		0.0010		0.0439	0.0500	0	87.8	0.04405	0.40	04/04/2022
Boron		0.0250		0.642	0.5000	0.1510	98.3	0.6189	3.72	04/05/2022
Cadmium		0.0010		0.0452	0.0500	0	90.5	0.04453	1.57	04/04/2022
Chromium		0.0015	S	0.253	0.2000	0.001129	126.2	0.2580	1.78	03/31/2022
Cobalt		0.0010		0.614	0.5000	0	122.7	0.6216	1.29	03/31/2022
Copper		0.0010		0.305	0.2500	0.002698	120.9	0.3075	0.83	03/31/2022
Iron		0.0250	S	2.55	2.000	0.01394	126.7	2.578	1.16	03/31/2022
Lead		0.0010		0.465	0.5000	0	93.1	0.4748	1.99	04/04/2022
Manganese		0.0020	S	0.638	0.5000	0.001296	127.3	0.6514	2.11	03/31/2022
Nickel		0.0010		0.601	0.5000	0.001095	120.0	0.6077	1.13	03/31/2022
Selenium		0.0010		0.576	0.5000	0	115.2	0.5835	1.31	03/31/2022
Silver		0.0010		0.0586	0.0500	0	117.2	0.05759	1.72	03/31/2022
Thallium		0.0020		0.304	0.2500	0	121.7	0.3069	0.88	03/31/2022
Vanadium		0.0050		0.466	0.5000	0	93.2	0.4758	2.12	04/04/2022
Zinc		0.0150		0.463	0.5000	0	92.6	0.4296	7.44	04/05/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189015		SampType: MBLK		Units mg/L							Date Analyzed	
SampID: MBLK-189015												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Aluminum		0.0250		< 0.0250	0.0125	0	0	-100	100			
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100			
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100			
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100			
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100			
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100			
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100			
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100			
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100			
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100			
Copper		0.0010		< 0.0010	0.0003	0	0	-100	100			
Iron		0.0250		< 0.0250	0.0115	0	0	-100	100			
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100			
Manganese		0.0020		< 0.0020	0.0008	0	0	-100	100			
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100			
Nickel		0.0010		< 0.0010	0.0004	0	0	-100	100			
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100			
Silver		0.0010		< 0.0010	0.0001	0	0	-100	100			
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100			
Vanadium		0.0050		< 0.0050	0.0028	0	0	-100	100			
Zinc		0.0150		< 0.0150	0.0059	0	0	-100	100			



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189015 SampType: LCS

Units mg/L

SampleID: LCS-189015

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		0.0250		1.94	2.000	0	96.9	80	120	04/01/2022
Antimony		0.0010		0.483	0.5000	0	96.7	80	120	04/01/2022
Arsenic		0.0010		0.469	0.5000	0	93.8	80	120	04/01/2022
Barium		0.0010		1.96	2.000	0	98.1	80	120	04/01/2022
Beryllium		0.0010		0.0468	0.0500	0	93.6	80	120	04/01/2022
Boron		0.0250		0.475	0.5000	0	94.9	80	120	03/30/2022
Cadmium		0.0010		0.0462	0.0500	0	92.5	80	120	04/01/2022
Chromium		0.0015		0.190	0.2000	0	94.8	80	120	04/01/2022
Cobalt		0.0010		0.466	0.5000	0	93.2	80	120	04/01/2022
Copper		0.0010		0.237	0.2500	0	94.8	80	120	04/01/2022
Iron		0.0250		1.74	2.000	0	87.0	80	120	04/01/2022
Lead		0.0010		0.493	0.5000	0	98.7	80	120	04/01/2022
Manganese		0.0020		0.479	0.5000	0	95.8	80	120	04/01/2022
Molybdenum		0.0015		0.460	0.5000	0	92.0	80	120	04/01/2022
Nickel		0.0010		0.460	0.5000	0	92.1	80	120	04/01/2022
Selenium		0.0010		0.447	0.5000	0	89.4	80	120	04/01/2022
Silver		0.0010		0.0463	0.0500	0	92.5	80	120	04/01/2022
Thallium		0.0020		0.243	0.2500	0	97.1	80	120	04/01/2022
Vanadium		0.0050		0.477	0.5000	0	95.3	80	120	04/01/2022
Zinc		0.0150		0.490	0.5000	0	98.1	80	120	04/01/2022

Batch 189015 SampType: MS

Units mg/L

SampleID: 22030530-033DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		0.0250	S	10.1	0.5000	9.026	217.4	75	125	03/30/2022

Batch 189015 SampType: MSD

Units mg/L

RPD Limit: 20

SampleID: 22030530-033DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron		0.0250	S	9.35	0.5000	9.026	65.1	10.11	7.83	03/30/2022

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 190778		SampType: LCS		Units mg/L						
SampleID: LCS-190778										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		0.0250		0.450	0.5000	0	90.1	80	120	04/22/2022
Iron		0.0250		1.86	2.000	0	92.8	80	120	04/22/2022
Manganese		0.0020		0.467	0.5000	0	93.4	80	120	04/22/2022

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

Batch 188963		SampType: MBLK		Units mg/L							
SampID: MBLK-188963											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	03/26/2022	
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	03/26/2022	
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	03/26/2022	
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	03/26/2022	
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	03/26/2022	
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	03/26/2022	
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	03/26/2022	
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	03/26/2022	
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	03/26/2022	
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	03/26/2022	
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	03/26/2022	
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	03/26/2022	
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	03/26/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 188963 SampType: LCS Units mg/L

SampleID: LCS-188963

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.503	0.5000	0	100.7	80	120	03/29/2022
Arsenic		0.0010		0.506	0.5000	0	101.2	80	120	03/29/2022
Barium		0.0010		2.06	2.000	0	103.2	80	120	03/29/2022
Beryllium		0.0010		0.0535	0.0500	0	107.0	80	120	03/31/2022
Beryllium		0.0010		0.0455	0.0500	0	91.0	80	120	03/29/2022
Boron		0.0250		0.517	0.5000	0	103.4	80	120	03/30/2022
Cadmium		0.0010		0.0490	0.0500	0	98.0	80	120	03/29/2022
Chromium		0.0015		0.202	0.2000	0	100.9	80	120	03/29/2022
Chromium		0.0015		0.213	0.2000	0	106.6	80	120	03/31/2022
Cobalt		0.0010		0.540	0.5000	0	107.9	80	120	03/31/2022
Cobalt		0.0010		0.508	0.5000	0	101.6	80	120	03/29/2022
Lead		0.0010		0.504	0.5000	0	100.8	80	120	03/29/2022
Lithium	*	0.0030		0.584	0.5000	0	116.8	80	120	04/01/2022
Lithium	*	0.0030		0.509	0.5000	0	101.8	80	120	03/29/2022
Molybdenum		0.0015		0.499	0.5000	0	99.8	80	120	03/29/2022
Selenium		0.0010		0.467	0.5000	0	93.5	80	120	03/29/2022
Thallium		0.0020		0.233	0.2500	0	93.2	80	120	03/29/2022

Batch 188963 SampType: MS Units mg/L

SampleID: 22030530-027CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.552	0.5000	0	110.3	75	125	03/31/2022
Arsenic		0.0010		0.539	0.5000	0.0005658	107.7	75	125	03/31/2022
Barium		0.0010		2.26	2.000	0.08625	108.7	75	125	03/31/2022
Beryllium		0.0010		0.0548	0.0500	0	109.5	75	125	03/31/2022
Boron		0.0250		2.86	0.5000	2.408	89.7	75	125	04/06/2022
Cadmium		0.0010		0.0530	0.0500	0.0004006	105.2	75	125	03/31/2022
Chromium		0.0015		0.212	0.2000	0.0008341	105.4	75	125	03/31/2022
Cobalt		0.0010		0.519	0.5000	0.002606	103.2	75	125	03/31/2022
Lead		0.0010		0.499	0.5000	0.001241	99.5	75	125	03/29/2022
Lithium	*	0.0030		0.554	0.5000	0.02306	106.2	75	125	04/06/2022
Molybdenum		0.0015		0.542	0.5000	0.004277	107.5	75	125	03/31/2022
Selenium		0.0010		0.496	0.5000	0	99.3	75	125	03/31/2022
Thallium		0.0020		0.240	0.2500	0	96.1	75	125	03/29/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 188963		SampType: MSD		Units mg/L				RPD Limit: 20		
SampleID: 22030530-027CMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.562	0.5000	0	112.4	0.5516	1.90	03/31/2022
Arsenic		0.0010		0.558	0.5000	0.0005658	111.5	0.5392	3.41	03/31/2022
Barium		0.0010		2.33	2.000	0.08625	111.9	2.260	2.82	03/31/2022
Beryllium		0.0010		0.0559	0.0500	0	111.8	0.05477	2.00	03/31/2022
Boron		0.0250		3.01	0.5000	2.408	120.2	2.856	5.20	04/06/2022
Cadmium		0.0010		0.0539	0.0500	0.0004006	107.0	0.05300	1.72	03/31/2022
Chromium		0.0015		0.220	0.2000	0.0008341	109.7	0.2116	4.02	03/31/2022
Cobalt		0.0010		0.538	0.5000	0.002606	107.1	0.5186	3.65	03/31/2022
Lead		0.0010		0.528	0.5000	0.001241	105.3	0.4987	5.65	03/29/2022
Lithium	*	0.0030		0.574	0.5000	0.02306	110.2	0.5539	3.53	04/06/2022
Molybdenum		0.0015		0.563	0.5000	0.004277	111.8	0.5420	3.83	03/31/2022
Selenium		0.0010		0.521	0.5000	0	104.1	0.4964	4.76	03/31/2022
Thallium		0.0020		0.256	0.2500	0	102.3	0.2403	6.24	03/29/2022

Batch 188980		SampType: MBLK		Units mg/L						
SampleID: MBLK-188980										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	03/26/2022
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	03/26/2022
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	03/26/2022
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	03/26/2022
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	03/26/2022
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	03/26/2022
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	03/26/2022
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	03/26/2022
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	03/26/2022
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	03/26/2022
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	03/26/2022
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	03/26/2022
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	03/26/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 188980		SampType: LCS		Units mg/L							
SampID: LCS-188980											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Antimony		0.0010		0.480	0.5000	0	95.9	80	120	03/26/2022	
Arsenic		0.0010		0.499	0.5000	0	99.8	80	120	03/26/2022	
Barium		0.0010		1.98	2.000	0	98.8	80	120	03/26/2022	
Beryllium		0.0010		0.0427	0.0500	0	85.3	80	120	03/26/2022	
Boron		0.0250		0.443	0.5000	0	88.6	80	120	03/26/2022	
Cadmium		0.0010		0.0474	0.0500	0	94.9	80	120	03/26/2022	
Chromium		0.0015		0.219	0.2000	0	109.4	80	120	03/31/2022	
Cobalt		0.0010		0.486	0.5000	0	97.2	80	120	03/26/2022	
Lead		0.0010		0.515	0.5000	0	103.0	80	120	03/29/2022	
Lithium	*	0.0030		0.584	0.5000	0	116.8	80	120	04/01/2022	
Molybdenum		0.0015		0.490	0.5000	0	98.0	80	120	03/26/2022	
Selenium		0.0010		0.464	0.5000	0	92.7	80	120	03/26/2022	
Thallium		0.0020		0.230	0.2500	0	92.1	80	120	03/26/2022	

Batch 188980		SampType: LCSD		Units mg/L				RPD Limit: 20		
SampleID: LCSD-188980										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.524	0.5000	0	104.8	0.4795	8.85	03/29/2022
Arsenic		0.0010		0.505	0.5000	0	101.0	0.4990	1.18	03/29/2022
Barium		0.0010		2.11	2.000	0	105.4	1.976	6.40	03/29/2022
Beryllium		0.0010		0.0528	0.0500	0	105.5	0.05491	4.01	03/31/2022
Boron		0.0250		0.506	0.5000	0	101.1	0.4431	13.21	03/30/2022
Cadmium		0.0010		0.0500	0.0500	0	99.9	0.04743	5.20	03/29/2022
Chromium		0.0015		0.206	0.2000	0	103.1	0.2188	5.93	03/31/2022
Cobalt		0.0010		0.511	0.5000	0	102.3	0.5382	5.09	03/31/2022
Lead		0.0010		0.507	0.5000	0	101.4	0.4922	3.00	03/29/2022
Lithium	*	0.0030		0.566	0.5000	0	113.1	0.5842	3.22	04/01/2022
Molybdenum		0.0015		0.502	0.5000	0	100.3	0.4900	2.36	03/29/2022
Selenium		0.0010		0.470	0.5000	0	93.9	0.4635	1.34	03/29/2022
Thallium		0.0020		0.244	0.2500	0	97.7	0.2301	5.93	03/29/2022

Batch 188980		SampType: MS		Units mg/L							Date Analyzed
SampID: 22030530-035CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Boron		0.0250		2.75	0.5000	2.166	116.3	75	125	04/01/2022	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 188980		SampType: MSD		Units mg/L				RPD Limit: 20			Date Analyzed	
SampID: 22030530-035CMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Boron			0.0250		2.72	0.5000	2.166	110.9	2.747	0.99	04/01/2022	

Batch 189006		SampType: MBLK		Units mg/L							Date Analyzed	
SampID: MBLK-189006												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	03/29/2022		
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	03/28/2022		
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	03/28/2022		
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	03/29/2022		
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	03/29/2022		
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	03/29/2022		
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	03/29/2022		
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	03/29/2022		
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	03/28/2022		
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	03/29/2022		
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	03/29/2022		
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	03/28/2022		
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	03/29/2022		

Batch 189006		SampType: LCS		Units mg/L							Date Analyzed	
SampID: LCS-189006												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Antimony		0.0010		0.500	0.5000	0	100.1	85	115	03/29/2022		
Arsenic		0.0010		0.489	0.5000	0	97.9	85	115	03/29/2022		
Barium		0.0010		2.01	2.000	0	100.7	85	115	03/29/2022		
Beryllium		0.0010		0.0433	0.0500	0	86.7	85	115	03/29/2022		
Boron		0.0250		0.441	0.5000	0	88.1	85	115	03/29/2022		
Cadmium		0.0010		0.0478	0.0500	0	95.5	85	115	03/29/2022		
Chromium		0.0015		0.198	0.2000	0	99.0	85	115	03/29/2022		
Cobalt		0.0010		0.493	0.5000	0	98.5	85	115	03/29/2022		
Lead		0.0010		0.486	0.5000	0	97.2	85	115	03/29/2022		
Lithium	*	0.0030		0.478	0.5000	0	95.6	85	115	03/29/2022		
Molybdenum		0.0015		0.491	0.5000	0	98.3	85	115	03/29/2022		
Selenium		0.0010		0.449	0.5000	0	89.9	85	115	03/29/2022		
Thallium		0.0020		0.229	0.2500	0	91.5	85	115	03/29/2022		



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 189006 SampType: MS Units mg/L

SampleID: 22030530-047BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.518	0.5000	0	103.5	75	125	03/29/2022
Arsenic		0.0010		0.500	0.5000	0.001741	99.6	75	125	03/29/2022
Barium		0.0010		2.38	2.000	0.3230	103.0	75	125	03/29/2022
Beryllium		0.0010		0.0544	0.0500	0	108.7	75	125	03/31/2022
Boron		0.0250		3.49	0.5000	2.983	102.2	75	125	03/31/2022
Cadmium		0.0010		0.0491	0.0500	0	98.2	75	125	03/29/2022
Chromium		0.0015		0.204	0.2000	0.001161	101.2	75	125	03/31/2022
Cobalt		0.0010		0.502	0.5000	0.0003621	100.4	75	125	03/31/2022
Lead		0.0010		0.501	0.5000	0	100.2	75	125	03/29/2022
Lithium	*	0.0030		0.645	0.5000	0.06073	116.8	75	125	03/31/2022
Molybdenum		0.0015		0.571	0.5000	0.05630	102.9	75	125	03/29/2022
Selenium		0.0010		0.458	0.5000	0.006224	90.4	75	125	03/29/2022
Thallium		0.0020		0.237	0.2500	0	94.9	75	125	03/29/2022

Batch 189006 SampType: MSD Units mg/L

RPD Limit: 20

SampleID: 22030530-047BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.511	0.5000	0	102.3	0.5177	1.24	03/29/2022
Arsenic		0.0010		0.508	0.5000	0.001741	101.3	0.4999	1.65	03/29/2022
Barium		0.0010		2.37	2.000	0.3230	102.5	2.382	0.41	03/29/2022
Beryllium		0.0010		0.0539	0.0500	0	107.8	0.05437	0.90	03/31/2022
Boron		0.0250		3.52	0.5000	2.983	107.0	3.494	0.69	03/31/2022
Cadmium		0.0010		0.0481	0.0500	0	96.1	0.04910	2.12	03/29/2022
Chromium		0.0015		0.203	0.2000	0.001161	101.0	0.2036	0.22	03/31/2022
Cobalt		0.0010		0.508	0.5000	0.0003621	101.5	0.5025	1.06	03/31/2022
Lead		0.0010		0.497	0.5000	0	99.4	0.5012	0.86	03/29/2022
Lithium	*	0.0030		0.644	0.5000	0.06073	116.6	0.6449	0.15	03/31/2022
Molybdenum		0.0015		0.564	0.5000	0.05630	101.6	0.5706	1.11	03/29/2022
Selenium		0.0010		0.465	0.5000	0.006224	91.8	0.4583	1.46	03/29/2022
Thallium		0.0020		0.240	0.2500	0	96.1	0.2372	1.22	03/29/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

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

Batch 190743 SampType: MBLK Units mg/L

SampID: MBLK-190743

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	04/24/2022
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	04/24/2022
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	04/22/2022
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	04/24/2022
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	04/24/2022
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	04/24/2022

Batch 190743 SampType: LCS Units mg/L

SampID: LCS-190743

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.532	0.5000	0	106.5	85	115	04/24/2022
Arsenic		0.0010		0.528	0.5000	0	105.7	85	115	04/24/2022
Boron		0.0250		0.484	0.5000	0	96.8	80	120	04/22/2022
Lead		0.0010		0.532	0.5000	0	106.4	85	115	04/24/2022
Selenium		0.0010		0.505	0.5000	0	101.0	85	115	04/24/2022
Thallium		0.0020		0.268	0.2500	0	107.3	85	115	04/24/2022

Batch 191095 SampType: MBLK Units mg/L

SampID: MBLK-191095

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		< 0.0010	0.0004	0	0	-100	100	04/27/2022
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	04/27/2022
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	04/28/2022
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	04/27/2022
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	04/28/2022

Batch 191095 SampType: LCS Units mg/L

SampID: LCS-191095

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.474	0.5000	0	94.8	80	120	04/27/2022
Arsenic		0.0010		0.474	0.5000	0	94.8	80	120	04/27/2022
Chromium		0.0015		0.186	0.2000	0	93.0	80	120	04/28/2022
Lead		0.0010		0.468	0.5000	0	93.6	80	120	04/27/2022
Lithium	*	0.0030		0.519	0.5000	0	103.8	80	120	04/28/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 7470A (DISSOLVED)

Batch 189038		SampType: MS		Units mg/L							
SampID: 22030530-013DMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		0.00509	0.0050	0	101.7	75	125	03/28/2022	

Batch 189038		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-013DMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.00020		0.00514	0.0050	0	102.8	0.005085	1.05	03/28/2022

Batch 189040		SampType: MS		Units mg/L							
SampID: 22030530-049DMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00516	0.0050	0	103.2	75	125	03/29/2022	

Batch 189040		SampType: MSD		Units mg/L				RPD Limit: 15				Date Analyzed
SampID: 22030530-049DMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Mercury			0.00020		0.00521	0.0050	0	104.2	0.005158	1.00	03/29/2022	

SW-846 7470A (TOTAL)

Batch 188965		SampType: MBLK		Units mg/L							
SampID: MBLK-188965											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	03/24/2022	

Batch 188965		SampType: LCS		Units mg/L							
SampID: LCS-188965											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00548	0.0050	0	109.7	85	115	03/24/2022	

Batch 188965		SampType: MS		Units mg/L							
SampID: 22030530-007CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00516	0.0050	0	103.2	75	125	03/24/2022	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 7470A (TOTAL)

Batch 188965		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed
SampID: 22030530-007CMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Mercury		0.00020		0.00502	0.0050	0	100.4	0.005161	2.74	03/24/2022	

Batch 189038		SampType: MBLK		Units mg/L							Date Analyzed
SampID: MBLK-189038											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	03/28/2022	
Mercury		0.20		< 0.20	0.0550	0	0	-100	100	03/28/2022	

Batch 189038		SampType: LCS		Units mg/L							
SampID: LCS-189038											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00506	0.0050	0	101.1	85	115	03/28/2022	
Mercury		0.20		5.06	5.000	0	101.1	85	115	03/28/2022	

Batch 189038		SampType: MS		Units mg/L							
SampID: 22030530-013CMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		0.00517	0.00500	0	103.4	75	125	03/28/2022	

Batch 189038		SampType: MSD		Units mg/L				RPD Limit: 15				Date Analyzed
SampID: 22030530-013CMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Mercury			0.00020		0.00501	0.00500	0	100.2	0.00517	3.09	03/28/2022	

Batch 189039		SampType: MBLK		Units mg/L							Date Analyzed
SampID: MBLK-189039											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	03/28/2022	

Batch 189039		SampType: LCS		Units mg/L							
SampID: LCS-189039											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00513	0.0050	0	102.6	85	115	03/28/2022	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 7470A (TOTAL)

Batch 189039		SampType: MS		Units mg/L							
SampID: 22030530-024CMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020		0.00545	0.0050	0	109.1	75	125	03/28/2022	

Batch 189039		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-024CMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Mercury		0.00020		0.00525	0.0050	0	105.0	0.005455	3.84	03/28/2022	

Batch 189039		SampType: MS		Units mg/L							
SampID: 22030530-030CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00534	0.0050	0	106.8	75	125	03/28/2022	

Batch 189039		SampType: MSD		Units mg/L				RPD Limit: 15				Date Analyzed
SampID: 22030530-030CMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Mercury			0.00020		0.00534	0.0050	0	106.7	0.005339	0.05	03/28/2022	

Batch 189040		SampType: MBLK		Units mg/L							
SampID: MBLK-189040											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	03/29/2022	

Batch 189040		SampType: LCS		Units mg/L							
SampID: LCS-189040											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00429	0.0050	0	85.9	85	115	03/29/2022	

Batch 191075		SampType: MBLK		Units mg/L							
SampID: MBLK-191075											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		< 0.00020	0.0001	0	0	-100	100	04/27/2022	

Batch 191075		SampType: LCS		Units mg/L							
SampID: LCS-191075											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00477	0.0050	0	95.4	85	115	04/27/2022	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

SW-846 7470A (TOTAL)

Batch 191075		SampType: MS		Units mg/L							
SampID: 22030530-012CMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.00020	H	0.00481	0.00500	0	96.3	75	125	04/27/2022	

Batch 191075		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22030530-012CMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.00020	H	0.00477	0.00500	0	95.4	0.00481	0.91	04/27/2022



Receiving Check List

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030530

Client Project: Hennepin Q1 Groundwater

Report Date: 01-Jun-22

Carrier: Adam Bridges

Received By: PWR

Completed by:

On:

24-Mar-22

Mary E. Kemp

Reviewed by:

On:

24-Mar-22

Elizabeth A. Hurley

Pages to follow:

Chain of custody

5

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 1.8

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 – 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 #78011/75146. - PRY/MKemp - 3/24/2022 10:53:33 AM

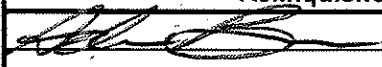
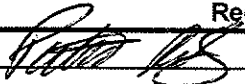
Additional nitric acid (80810) was needed in 08 upon arrival at the laboartory. Additional sulfuric acid (80586) was needed in 10 upon arrival at the laboratory. Additional sodium hydroxide (78408) was needed in 08, 08 Duplicate, 08D, and 19D upon arrival at the laboratory. - PRY/MKemp - 3/24/2022 10:53:38 AM

Field Blank was filtered and preserved with nitric acid (80810), sulfuric acid (80586), and sodium hydroxide (78408) for the dissolved parameters upon arrival at the laboratory. - MKemp - 3/24/2022 10:53:41 AM

CHAIN OF CUSTODY

Pg 1 of 5 Workorder # 22030530

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

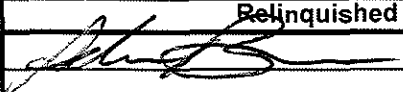
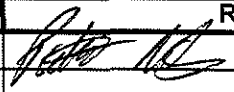
Client: <u>Ramboll / Vistra</u> Address: <u>234 W. Florida St.</u> City/State/Zip: <u>Milwaukee, WI 53204</u> Contact: <u>Eric Bauer</u> Phone: <u>(414) 837-3607</u> Email: <u>eric.bauer@ramboll.com</u> Fax: _____				Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE <u>1.8 °C</u> LTG# <u>5</u> Preserved in: ☒ LAB ☐ FIELD FOR LAB USE ONLY LAB NOTES: <u>PH 7.8011/75146, Added NaOH 78408 to 8/8 DVP/80/19D, HN0380810 to 8, H2SO4 80586 to 10, PNT 3/24/17</u> Client Comments: <u>⊗ Filter in Lab OHS, PNT 3/24/17</u> Field Tests = pH, DO, ORP, Conductivity, Temperature, Turbidity, and DTW *Perchlorate subcontracted to Keystone. Multiple program reports will be generated (metals lists per program requirements). 02, 04R, 06, 15, 19D, and 19S do not require Total Fluoride. 25, 26, 30, 31, 33, 36, 55, SG02, and XSG01 require only DTW.																										
Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☒ No Are these samples known to be hazardous? ☐ Yes ☒ No Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in the comment section: ☐ Yes ☒ No																														
PROJECT NAME/NUMBER <u>Hennepin Q1 Groundwater</u>		SAMPLE COLLECTOR'S NAME <u>J. RILEY A. BRIDGES</u>		# and Type of Containers <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>UNP</td> <td>HN03</td> <td>NaOH</td> <td>H2SO4</td> <td>HCL</td> <td>MeOH</td> <td>NaHSO4</td> <td>TSP</td> <td>Other</td> </tr> </table>		UNP	HN03	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>BTEX/Per*</td> <td>D - NH3/OOH</td> <td>T - NH3/OOH</td> <td>D - Cyanide</td> <td>T - Cyanide</td> <td>D - Metals</td> <td>Total Metals</td> <td>D - C/ISO4/F-</td> <td>Total Nitrate</td> <td>Total Alkalinity</td> <td>Bicarb./Carb.</td> <td>TDS, Total F-</td> <td>Total C/ISO4</td> <td>Field Tests</td> </tr> </table>		BTEX/Per*	D - NH3/OOH	T - NH3/OOH	D - Cyanide	T - Cyanide	D - Metals	Total Metals	D - C/ISO4/F-	Total Nitrate	Total Alkalinity	Bicarb./Carb.	TDS, Total F-	Total C/ISO4	Field Tests
UNP	HN03	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other																						
BTEX/Per*	D - NH3/OOH	T - NH3/OOH	D - Cyanide	T - Cyanide	D - Metals	Total Metals	D - C/ISO4/F-	Total Nitrate	Total Alkalinity	Bicarb./Carb.	TDS, Total F-	Total C/ISO4	Field Tests																	
RESULTS REQUESTED ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other _____ ☐ 3 Day (50% Surcharge)		BILLING INSTRUCTIONS <u>Vistra PO#s</u>																												
Lab Use Only	Sample ID	Date/Time Sampled	Matrix																											
22030530-001	02	03/23/22 1343	Groundwater																											
002	03R	03/23/22 1208	Groundwater																											
003	04R	03/23/22 0958	Groundwater																											
004	05DR	03/23/22 1121	Groundwater																											
005	05R	03/23/22 1108	Groundwater																											
006	06	03/23/22 1223	Groundwater																											
007	07	03/23/22 1531	Groundwater																											
008	08	03/23/22 1424	Groundwater																											
009	08 Duplicate	03/23/22 1424	Groundwater																											
010	08D	03/23/22 1404	Groundwater																											
011	10	03/23/22 1326	Groundwater																											
Relinquished By		Date/Time		Received By		Date/Time																								
		3-24-22 0750				3/24/22 0750																								

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CHAIN OF CUSTODY

Pg 2 of 5 Workorder # 22030530

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

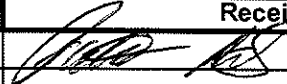
Client: <u>Ramboll / Vistra</u> Address: <u>234 W. Florida St.</u> City/State/Zip: <u>Milwaukee, WI 53204</u> Contact: <u>Eric Bauer</u> Phone: <u>(414) 837-3607</u> Email: <u>eric.bauer@ramboll.com</u> Fax: _____				Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C LTG# _____ Preserved in: ☐ LAB ☐ FIELD <u>FOR LAB USE ONLY</u> LAB NOTES: _____																																	
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Lab Use Only	Sample ID	Date/Time Sampled	Matrix																																		
<u>22030530-012</u>	<u>12</u>	<u>03/23/22 0850</u>	<u>Groundwater</u>																																		
<u>013</u>	<u>13</u>	<u>03/23/22 0907</u>	<u>Groundwater</u>																																		
<u>014</u>	<u>15</u>	<u>03/23/22 0944</u>	<u>Groundwater</u>																																		
<u>015</u>	<u>16</u>	<u>03/23/22 1450</u>	<u>Groundwater</u>																																		
<u>016</u>	<u>17</u>	<u>03/23/22 1504</u>	<u>Groundwater</u>																																		
<u>017</u>	<u>18D</u>	<u>03/23/22 1151</u>	<u>Groundwater</u>																																		
<u>018</u>	<u>18S</u>	<u>03/23/22 1157</u>	<u>Groundwater</u>																																		
<u>019</u>	<u>19D</u>	<u>03/23/22 1028</u>	<u>Groundwater</u>																																		
<u>020</u>	<u>19S</u>	<u>3/23/22 1014</u>	<u>Groundwater</u>																																		
<u>021</u>	<u>21R</u>	<u>3/22/22 0844</u>	<u>Groundwater</u>																																		
<u>022</u>	<u>22</u>	<u>03/22/22 1150</u>	<u>Groundwater</u>																																		
Relinquished By 		Date/Time <u>3-24-22 0750</u>		Received By 		Date/Time <u>3/24/22 0750</u>																															

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CHAIN OF CUSTODY

Pg 3 of 5 Workorder # 22030530

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

Client: <u>Ramboll / Vistra</u> Address: <u>234 W. Florida St.</u> City/State/Zip: <u>Milwaukee, WI 53204</u> Contact: <u>Eric Bauer</u> Phone: <u>(414) 837-3607</u> Email: <u>eric.bauer@ramboll.com</u> Fax: _____				Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C LTG# _____ Preserved in: ☐ LAB ☐ FIELD <u>FOR LAB USE ONLY</u> LAB NOTES: _____																													
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Lab Use Only	Sample ID	Date/Time Sampled	Matrix																														
<u>22030530-223</u>	<u>22D</u>	<u>03/22/22 1216</u>	Groundwater																														
<u>024</u>	<u>23</u>	<u>03/22/22 1115</u>	Groundwater																														
<u>025</u>	<u>25</u>	<u>03/21/22 1351</u>	Groundwater																														
<u>026</u>	<u>26</u>	<u>03/22/22 1352</u>	Groundwater																														
<u>027</u>	<u>27</u>	<u>03/23/22 0456</u>	Groundwater																														
<u>028</u>	<u>30</u>	<u>03/21/22 1340</u>	Groundwater																														
<u>029</u>	<u>31</u>	<u>03/21/22 1334</u>	Groundwater																														
<u>030</u>	<u>32</u>	<u>03/22/22 1018</u>	Groundwater																														
<u>031</u>	<u>33</u>	<u>03/21/22 1346</u>	Groundwater																														
<u>032</u>	<u>34</u>	<u>03/22/22 0804</u>	Groundwater																														
<u>033</u>	<u>35</u>	<u>03/22/22 0910</u>	Groundwater																														
Relinquished By 		Date/Time <u>3-24-22 0750</u>		Received By 		Date/Time <u>3/24/22 0750</u>																											
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CHAIN OF CUSTODY

Pg 4 of 5 Workorder # 22030530

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

Client: <u>Ramboll / Vistra</u> Address: <u>234 W. Florida St.</u> City/State/Zip: <u>Milwaukee, WI 53204</u> Contact: <u>Eric Bauer</u> Phone: <u>(414) 837-3607</u> Email: <u>eric.bauer@ramboll.com</u> Fax: _____				Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C LTG# _____ Preserved in: ☐ LAB ☐ FIELD <u>FOR LAB USE ONLY</u> LAB NOTES: _____																													
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Lab Use Only	Sample ID	Date/Time Sampled	Matrix																														
<u>22030530-034</u>	<u>36</u>	<u>03/21/22 1354</u>	<u>Groundwater</u>																														
<u>035</u>	<u>40S</u>	<u>03/27/22 1041</u>	<u>Groundwater</u>																														
<u>036</u>	<u>45S</u>	<u>03/23/22 1236</u>	<u>Groundwater</u>																														
<u>037</u>	<u>46</u>	<u>03/23/22 0925</u>	<u>Groundwater</u>																														
<u>038</u>	<u>47</u>	<u>03/23/22 0827</u>	<u>Groundwater</u>																														
<u>039</u>	<u>48</u>	<u>03/23/22 1056</u>	<u>Groundwater</u>																														
<u>040</u>	<u>49</u>	<u>03/22/22 1132</u>	<u>Groundwater</u>																														
<u>041</u>	<u>50</u>	<u>03/22/22 1235</u>	<u>Groundwater</u>																														
<u>042</u>	<u>51</u>	<u>03/22/22 1046</u>	<u>Groundwater</u>																														
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CHAIN OF CUSTODY

Pg 5 of 5 Workorder # 22030530

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RESULTS REQUESTED ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other _____ ☐ 3 Day (50% Surcharge)		BILLING INSTRUCTIONS <u>Vistra PO#s</u>		Lab Use Only		Sample ID		Date/Time Sampled		Matrix	
<u>22030530-045</u>		<u>XPW01</u>		<u>03/23/22 1301</u>		<u>Groundwater</u>		☒		☒	
<u>046</u>		<u>XPW02</u>		<u>03/23/22 0806</u>		<u>Groundwater</u>		☒		☒	
<u>047</u>		<u>XPW03</u>		<u>03/23/22 1312</u>		<u>Groundwater</u>		☒		☒	
<u>048</u>		<u>XSG01</u>		<u>03/21/22 1253</u>		<u>Groundwater</u>		☒		☒	
<u>049</u>		<u>Field Blank</u>		<u>03/23/22 1330</u>		<u>Groundwater</u>		☒		☒	
						<u>Groundwater</u>		☐		☐	
						<u>Groundwater</u>		☐		☐	
						<u>Groundwater</u>		☐		☐	
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						<u>Groundwater</u>		☐ </			

July 13, 2022

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: Hennepin Q2 Groundwater

WorkOrder: 22051803

Dear Eric Bauer:

TEKLAB, INC received 41 samples on 6/9/2022 8:28:00 AM for the analysis presented in the following report.

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

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

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

Sincerely,



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

Client: Ramboll

Work Order: 22051803

Client Project: Hennepin Q2 Groundwater

Report Date: 13-Jul-22

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Sample Summary	8
Dates Report	9
Quality Control Results	10
Receiving Check List	11
Chain of Custody	Appended

Client: Ramboll

Work Order: 22051803

Client Project: Hennepin Q2 Groundwater

Report Date: 13-Jul-22

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)

Client: Ramboll

Work Order: 22051803

Client Project: Hennepin Q2 Groundwater

Report Date: 13-Jul-22

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

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22051803

Client Project: Hennepin Q2 Groundwater

Report Date: 13-Jul-22

Cooler Receipt Temp: 4.4 °C

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

Perchlorate analysis was performed by Keystone Laboratories, Inc. See attached for QC results.

Hennepin 257_801 data is included in this report. EAH 7/13/22

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
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

Springfield

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

Chicago

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

Kansas City

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

Client: Ramboll**Work Order:** 22051803**Client Project:** Hennepin Q2 Groundwater**Report Date:** 13-Jul-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2023	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	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2023	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: Ramboll**Work Order:** 22051803**Client Project:** Hennepin Q2 Groundwater**Report Date:** 13-Jul-22**Lab ID:** 22051803-035**Client Sample ID:** 40S**Matrix:** GROUNDWATER**Collection Date:** 06/08/2022 9:57

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		7.66		1	06/08/2022 9:57	R313269



Sample Summary

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22051803

Client Project: Hennepin Q2 Groundwater

Report Date: 13-Jul-22

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
22051803-035	40S	Groundwater	1	06/08/2022 9:57



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22051803

Client Project: Hennepin Q2 Groundwater

Report Date: 13-Jul-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22051803-035A	40S	06/08/2022 9:57	06/09/2022 8:28		
	Field Elevation Measurements				06/08/2022 9:57
	Standard Method 4500-H B 2001 Field				06/08/2022 9:57
	Standard Methods 2130 B Field				06/08/2022 9:57
	Standard Methods 2320 B 1997, 2011				06/13/2022 10:03
	Standard Methods 18th Ed. 2580 B Field				06/08/2022 9:57
	Standard Methods 2320 B (Total) 1997, 2011				06/13/2022 10:03
	Standard Methods 2510 B Field				06/08/2022 9:57
	Standard Methods 2540 C (Total) 1997, 2011				06/10/2022 11:55
	Standard Methods 2550 B Field				06/08/2022 9:57
	Standard Methods 4500-NO2 B (Total) 2000, 2011				06/09/2022 12:59
	Standard Methods 4500-NO3 F (Total) 2000, 2011				06/09/2022 19:23
	Standard Methods 4500-O G Field				06/08/2022 9:57
	SW-846 9036 (Total)				06/14/2022 16:12
	SW-846 9214 (Total)				06/13/2022 11:36
	SW-846 9251 (Total)				06/14/2022 16:12

Client: Ramboll

Work Order: 22051803

Client Project: Hennepin Q2 Groundwater

Report Date: 13-Jul-22

STANDARD METHOD 4500-H B 2001 FIELD

Batch R313269		SampType: LCS		Units							Date Analyzed
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
pH		*	1.00		7.01	7.000	0	100.1	98.57	101.4	06/07/2022
pH		*	1.00		7.04	7.000	0	100.6	98.57	101.4	06/07/2022

STANDARD METHODS 2510 B FIELD

Batch R313269		SampType: LCS		Units $\mu\text{S/cm}$							Date Analyzed
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Spec. Conductance, Field		*	0		1500	1409	0	106.7	90	110	06/07/2022
Spec. Conductance, Field		*	0		1400	1409	0	99.0	90	110	06/07/2022



Receiving Check List

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22051803

Client Project: Hennepin Q2 Groundwater

Report Date: 13-Jul-22

Carrier: Adam Bridges

Received By: RMW

Completed by:

On:

09-Jun-22

Reannan Willis

Reviewed by:

On:

10-Jun-22

Elizabeth A. Hurley

Pages to follow:

Chain of custody

4

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 4.4

Type of thermal preservation?

None ☐

Ice ☒

Blue Ice ☐

Dry Ice ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Reported field parameters measured:

Field ☒

Lab ☐

NA ☐

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 #75846/78198. - CET/rwillis - 6/9/2022 12:49:08 PM

Additional Nitric acid (82107) was needed in 03R, 05R, and 22 upon arrival at the laboratory. - CET/rwillis - 6/9/2022 12:49:53 PM

Additional Sodium Hydroxide (81662) was needed in 02, 03R, 04R, 06, 07, 08, 08 Duplicate, 08D, 10, 13, and 45S upon arrival at the laboratory. - CET/rwillis - 6/9/2022 12:49:57 PM

08, 08 Duplicate, and 08D did not reach the desired pH range(s). - rwillis - 6/9/2022 12:51:06 PM

Headspace was present in one 12 volatile vial. - CET/rwillis - 6/9/2022 12:52:29 PM

Well 10 was collected in Well 08 bottles, and Well 08 was collected in Well 10 bottles. Both sample suites were re-labeled upon arrival at the laboratory. - ehurley - 6/10/2022 9:04:28 AM

Samples collected on 6/7/22 were received with insufficient amount of time to meet hold time requirements for Nitrate analysis. Client was notified via work order summary. - ehurley - 6/10/2022 9:05:46 AM

Field Blank was filtered and preserved as needed with nitric acid (82107) upon arrival at the laboratory. - CET/ehurley - 6/10/2022 9:08:20 AM

CHAIN OF CUSTODY

Pg 1 of 4 Workorder # 22051803

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

Client: Vistra/Ramboll
 Address: 234 W. Florida St.
 City/State/Zip: Milwaukee, WI 61704
 Contact: Eric Bauer Phone: 920-255-4997
 Email: eric.bauer@ramboll.com Fax:

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

PROJECT NAME/NUMBER
 Hennepin Q2 Groundwater

SAMPLE COLLECTOR'S NAME
 J. RILEY A. BRIDGES

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 44°C LTG# 1
 Preserved in: ☒ LAB ☐ FIELD

LAB NOTES: HW 2318173846. Add HNO3. Add NaOH. 1/3 HCl. Samples 8, 8 dup, and 8 D 212 not reach desired pH.
 Client Comments: Filter in LAB. Add HNO3 (8267). Add NaOH (8267).

Program reporting required. Metals lists per project requirements.
 *Dissolved Cl and dissolved B, only - 22D and 50
 **DTW, only - 25, 26, 30, 31, 33 and SG02

and Type of Containers INDICATE ANALYSIS REQUESTED

UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	Field Tests**	Cl, SO4, F (T)	TDS, NO3 (T)	Alkalinity (T)	Alkalinity B (T)	Cl, SO4, F (D)*	Total Metals	Diss. Metals*	Total Cyanide	OOH, NH3	EDB/DBCP	VOCs	BTEX	Perchlorate
3	1	1		3					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	2	1		3					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	1	1							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	2	1	2	3					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	2	1	2	3					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	1	1							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	2	1		3					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	2	1	2	3					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	2	1	2	3					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	2	1	2	3					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Relinquished By [Signature] Date/Time 6-9-22 0828
 Received By R. W. Wood Date/Time 6/9/22 8:28

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

CoC Rev C Aug 2020

CEX (6-9-22)

CHAIN OF CUSTODY

Pg 2 of 4 Workorder # 22051803

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

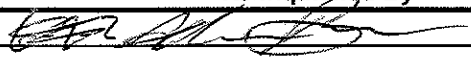
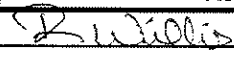
Client: <u>Vistra/Ramboll</u>				Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE <u> </u> °C LTG# <u> </u>																						
Address: <u>234 W. Florida St.</u>				Preserved in: ☐ LAB ☐ FIELD <u>FOR LAB USE ONLY</u>																						
City/State/Zip: <u>Milwaukee, WI 61704</u>				LAB NOTES:																						
Contact: <u>Eric Bauer</u> Phone: <u>920-255-4997</u>				Client Comments:																						
Email: <u>eric.bauer@ramboll.com</u> Fax: <u> </u>				Program reporting required. Metals lists per project requirements.																						
Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☒ No				*Dissolved Cl and dissolved B, only - 21R, 22, 22D, 23, 27, 32, 34, 35, 49, 50 and 51																						
Are these samples known to be hazardous? ☐ Yes ☒ No				***Dissolved B, only - 22D and 50																						
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☐ Yes ☒ No				**DTW, only - 25, 26, 30, 31, 33 and SG02																						
				+TDS, only - 21R, 22, 23, 27, 32, 34, 35, 49 and 51																						
PROJECT NAME/NUMBER		SAMPLE COLLECTOR'S NAME		INDICATE ANALYSIS REQUESTED																						
Hennepin Q2 Groundwater																										
RESULTS REQUESTED		BILLING INSTRUCTIONS																								
☒ Standard ☐ 1-2 Day (100% Surcharge)		Vistra 2022 PO#s																								
☐ Other ☐ 3 Day (50% Surcharge)																										
Lab Use Only	Sample ID	Date/Time Sampled	Matrix	UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	Field Tests**	Cl, SO4, F (T)	TDS, NO3 (T)+	Alkalinity (T)	Alkalinity B (T)	Cl, SO4, F (D)*	Total Metals	Diss. Metals***	Total Cyanide	OOH, NH3	EDB/BCP	VOCs	BTEX	Perchlorate
22051803-012	12	6/7/22 1516	Groundwater	4	2	1	2	3						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
013	13	6/7/22 1530	Groundwater	4	2	1	2	3						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
014	15	6/7/22 1455	Groundwater	2	1	1								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
015	16	6/7/22 1421	Groundwater	2	1	1								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
016	17	6/7/22 1434	Groundwater	2	1	1								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
017	18D	6/9/22 1100	Groundwater	3	2	1		3						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
018	18S	6/9/22 1047	Groundwater	3	2	1		3						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
019	19D	6/9/22 943	Groundwater	2	1	1								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
020	19S	6/9/22 0928	Groundwater	2	1	1								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
021	21R	06/1/22 0932	Groundwater	2	2									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
022	22	6/7/22 1245	Groundwater	2	2									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Relinquished By		Date/Time		Received By										Date/Time												
[Signature]		6-9-22 0828		[Signature]										6/9/22 8:28												

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

CHAIN OF CUSTODY

Pg 3 of 4 Workorder # 22051803

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

Client: <u>Vistra/Ramboll</u> Address: <u>234 W. Florida St.</u> City/State/Zip: <u>Milwaukee, WI 61704</u> Contact: <u>Eric Bauer</u> Phone: <u>920-255-4997</u> Email: <u>eric.bauer@ramboll.com</u> Fax: _____				Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C LTG# _____ Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY LAB NOTES: _____																
Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☒ No Are these samples known to be hazardous? ☐ Yes ☒ No Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in the comment section: ☐ Yes ☒ No				Client Comments: Program reporting required. Metals lists per project requirements. *Dissolved Cl and dissolved B, only - 21R, 22, 22D, 23, 27, 32, 34, 35, 49, 50 and 51 ***Dissolved B, only - 22D and 50 **DTW, only - 25, 26, 30, 31, 33 and SG02 +TDS, only - 21R, 22, 23, 27, 32, 34, 35, 49 and 51																
PROJECT NAME/NUMBER Hennepin Q2 Groundwater		SAMPLE COLLECTOR'S NAME 		# and Type of Containers UNP HNO3 NaOH H2SO4 HCL MeOH NaHSO4 TSP Other		INDICATE ANALYSIS REQUESTED Perchlorate BTEX VOCs EDB/DBCP OOH, NH3 Total Cyanide Diss. Metals*** Total Metals Cl, SO4, F (D)* Alkalinity B (T) Alkalinity (T) TDS, NO3 (T)+ Cl, SO4, F (T) Field Tests**														
RESULTS REQUESTED ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other _____ ☐ 3 Day (50% Surcharge)		BILLING INSTRUCTIONS Vistra 2022 PO#s																		
Lab Use Only	Sample ID	Date/Time Sampled	Matrix																	
22051803-023	22D	6/9/22 1259	Groundwater	2	2															
024	23	1213	Groundwater	2	2															
025	25	1223	Groundwater																	
026	26	1224	Groundwater																	
027	27	1052	Groundwater	2	2															
028	30	1018	Groundwater																	
029	31	1018	Groundwater																	
030	32	1112	Groundwater	2	2															
031	33	1114	Groundwater																	
032	34	0953	Groundwater	2	2															
033	35	1010	Groundwater	2	2															
Relinquished By 			Date/Time 6-9-22 0828		Received By 			Date/Time 10/9/22 828												

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

CHAIN OF CUSTODY

Pg 4 of 4 Workorder # 22051803

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

Client: <u>Vistra/Ramboll</u> Address: <u>234 W. Florida St.</u> City/State/Zip: <u>Milwaukee, WI 61704</u> Contact: <u>Eric Bauer</u> Phone: <u>920-255-4997</u> Email: <u>eric.bauer@ramboll.com</u> Fax: _____				Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C LTG# _____ Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY LAB NOTES: _____																																																	
Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☒ No Are these samples known to be hazardous? ☐ Yes ☒ No Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☐ Yes ☒ No				Client Comments: Program reporting required. Metals lists per project requirements. *Dissolved Cl and dissolved B, only - 21R, 22, 22D, 23, 27, 32, 34, 35, 49, 50 and 51 ***Dissolved B, only - 22D and 50 **DTW, only - 25, 26, 30, 31, 33 and SG02 +TDS, only - 21R, 22, 23, 27, 32, 34, 35, 49 and 51																																																	
PROJECT NAME/NUMBER Hennepin Q2 Groundwater		SAMPLE COLLECTOR'S NAME 		# and Type of Containers <table border="1" style="width:100%; border-collapse: collapse; font-size: 8px;"> <tr> <th>UNP</th> <th>HNO3</th> <th>NaOH</th> <th>H2SO4</th> <th>HCL</th> <th>MeOH</th> <th>NaHSO4</th> <th>TSP</th> <th>Other</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other										INDICATE ANALYSIS REQUESTED <table border="1" style="width:100%; border-collapse: collapse; font-size: 8px;"> <tr> <th>Perchlorate</th> <th>BTEX</th> <th>VOCs</th> <th>EDB/DBCP</th> <th>OOH, NH3</th> <th>Total Cyanide</th> <th>Diss. Metals ***</th> <th>Total Metals</th> <th>Cl, SO4, F (D)*</th> <th>Alkalinity B (T)</th> <th>Alkalinity (T)</th> <th>TDS, NO3 (T)+</th> <th>Cl, SO4, F (T)</th> <th>Field Tests**</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		Perchlorate	BTEX	VOCs	EDB/DBCP	OOH, NH3	Total Cyanide	Diss. Metals ***	Total Metals	Cl, SO4, F (D)*	Alkalinity B (T)	Alkalinity (T)	TDS, NO3 (T)+	Cl, SO4, F (T)	Field Tests**														
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RESULTS REQUESTED ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other _____ ☐ 3 Day (50% Surcharge)		BILLING INSTRUCTIONS Vistra 2022 PO#s		<table border="1" style="width:100%; border-collapse: collapse; font-size: 8px;"> <tr> <th>Lab Use Only</th> <th>Sample ID</th> <th>Date/Time Sampled</th> <th>Matrix</th> </tr> <tr> <td>22051803-034</td> <td>36</td> <td>6/7/22 1320</td> <td>Groundwater</td> </tr> <tr> <td>035</td> <td>40S</td> <td>6/8/22 0957</td> <td>Groundwater</td> </tr> <tr> <td>036</td> <td>45S *</td> <td>6/9/22 1146</td> <td>Groundwater</td> </tr> <tr> <td>037</td> <td>49</td> <td>6/9/22 1231</td> <td>Groundwater</td> </tr> <tr> <td>038</td> <td>50</td> <td>6/9/22 1314</td> <td>Groundwater</td> </tr> <tr> <td>039</td> <td>51</td> <td>6/9/22 1156</td> <td>Groundwater</td> </tr> <tr> <td>040</td> <td>SG02</td> <td>6/9/22 1118</td> <td>Groundwater</td> </tr> <tr> <td>041</td> <td>Field Blank ⊗</td> <td>6/9/22 1201</td> <td>Aqueous</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Groundwater</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Groundwater</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Groundwater</td> </tr> </table>		Lab Use Only	Sample ID	Date/Time Sampled	Matrix	22051803-034	36	6/7/22 1320	Groundwater	035	40S	6/8/22 0957	Groundwater	036	45S *	6/9/22 1146	Groundwater	037	49	6/9/22 1231	Groundwater	038	50	6/9/22 1314	Groundwater	039	51	6/9/22 1156	Groundwater	040	SG02	6/9/22 1118	Groundwater	041	Field Blank ⊗	6/9/22 1201	Aqueous				Groundwater				Groundwater				Groundwater
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October 31, 2022

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: Hennepin Q3 Groundwater

WorkOrder: 22081261

Dear Eric Bauer:

TEKLAB, INC received 46 samples on 9/15/2022 10:05:00 AM for the analysis presented in the following report.

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

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

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

Sincerely,



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

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Sample Summary	19
Dates Report	20
Quality Control Results	32
Receiving Check List	67
Chain of Custody	Appended

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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)

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

Cooler Receipt Temp: 4.4 °C

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

34 could not be accessed for sample collection.

Perchlorate analysis was performed by Keystone Laboratories, Inc. See attached for QC results.

This report contains HEN_257_801 data. EAH 10/31/22

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
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

Springfield

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

Chicago

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

Kansas City

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

Client: Ramboll**Work Order:** 22081261**Client Project:** Hennepin Q3 Groundwater**Report Date:** 31-Oct-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2023	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		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2023	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-003
 Matrix: GROUNDWATER

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: 05R
 Collection Date: 09/14/2022 14:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	5	0		41.03	ft	1	09/14/2022 14:20	* R19032
STANDARD METHOD 4500-H B 2001 FIELD								
pH	5	1600		7.55		1	09/14/2022 14:20	* R19032
STANDARD METHODS 2130 B FIELD								
Turbidity	5	160		< 1.0	y TN	1	09/14/2022 14:20	* R19032
STANDARD METHODS 18TH ED. 2580 B FIELD								
ORP (mV)	5	1000		123	mc	1	09/14/2022 14:20	* R19032
STANDARD METHODS 2510 B FIELD								
Specific Conductance	5	0		1030	FV/- m	1	09/14/2022 14:20	* R19032
STANDARD METHODS 2550 B FIELD								
Temperature	5	0		16.9	µS	1	09/14/2022 14:20	* R19032
STANDARD METHODS 4500-O G FIELD								
ORP (mV)	5	0		0.30	mg/v	1	09/14/2022 14:20	* R19032
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity as CaCO ₃	y) vLP	0		253	mg/v	1	09/21/2022 14:04	* R19032
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity as CaCO ₃	y) vLP	0		0	mg/v	1	09/21/2022 14:04	* R19032
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	y) vLP	20		548	mg/v	1	09/19/2022 17:43	* R19032
<i>QC has recovered outside the acceptance range. Data is validated by passing LCS.</i>								
SW-846 9036 (TOTAL)								
Sulfate	y) vLP	70		67	mg/v	7	09/21/2022 12:28	* R19032
SW-846 9214 (TOTAL)								
Fluoride	y) vLP	0.010		0.14	mg/v	1	09/22/2022 13:00	* R19032
SW-846 9251 (TOTAL)								
Chloride	y) vLP	20		77	mg/v	7	09/21/2022 12:28	* R19032
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Sodium	y) vLP	0.0100		84.0	mg/v	1	09/13/2022 1E:00	193389
Magnesium	y) vLP	0.0070		30.0	mg/v	1	09/13/2022 1E:00	193389
Potassium	y) vLP	0.0100		9.01	mg/v	1	09/13/2022 1E:00	193389
Sodium	y) vLP	0.0070		44.6	mg/v	1	09/13/2022 1E:00	193389
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	y) vLP	270		626	Fg/v	7	09/20/2022 17:24	193389



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
Client Project: Hennepin Q3 Groundwater
Lab ID: 22081261-004
Matrix: GROUNDWATER

Work Order: 22081261
Report Date: 31-Oct-22
Client Sample ID: 05DR
Collection Date: 09/14/2022 14:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		41.05	ft	1	09/14/2022 14:05	R319062
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		7.35		1	09/14/2022 14:05	R319062
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/14/2022 14:05	R319062
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		123	mV	1	09/14/2022 14:05	R319062
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		1030	µS/cm	1	09/14/2022 14:05	R319062
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		17.2	°C	1	09/14/2022 14:05	R319062
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		0.41	mg/L	1	09/14/2022 14:05	R319062
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		235	mg/L	1	09/21/2022 14:40	R318378
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2022 14:40	R318378
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		558	mg/L	1	09/19/2022 15:46	R318312
<i>QC has recovered outside the acceptance range. Data is validated by passing LCS.</i>								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		71	mg/L	5	09/21/2022 12:36	R318339
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.16	mg/L	1	09/22/2022 16:33	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	20		84	mg/L	5	09/21/2022 12:35	R318345
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		84.4	mg/L	1	09/16/2022 18:18	196679
Magnesium	NELAP	0.050		29.7	mg/L	1	09/16/2022 18:18	196679
Potassium	NELAP	0.100		7.04	mg/L	1	09/16/2022 18:18	196679
Sodium	NELAP	0.050		44.4	mg/L	1	09/16/2022 18:18	196679
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		803	µg/L	5	09/20/2022 15:30	196679

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-005
 Matrix: GROUNDWATER

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: 07
 Collection Date: 09/14/2022 17:21

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		66.70	ft	1	09/14/2022 1:52	R319062
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.73		1	09/14/2022 1:52	R319062
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/14/2022 1:52	R319062
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		175	mV	1	09/14/2022 1:52	R319062
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		1990	µS/cm	1	09/14/2022 1:52	R319062
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		11.6	°C	1	09/14/2022 1:52	R319062
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		4.38	mg/L	1	09/14/2022 1:52	R319062
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	N8LAP	0		515	mg/L	1	09/21/2022 14:54	R3173: 7
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	N8LAP	0		0	mg/L	1	09/21/2022 14:54	R3173: 7
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	N8LAP	20		954	mg/L	1	09/20/2022 1E51	R317312
<i>QC has recovered outside the acceptance range. Data is validated by passing LCS.</i>								
SW-846 9036 (TOTAL)								
Sulfate	N8LAP	E0		92	mg/L	E	09/21/2022 12:54	R317339
SW-846 9214 (TOTAL)								
Fluoride	N8LAP	0.10		0.11	mg/L	1	09/22/2022 16:53	R31743:
SW-846 9251 (TOTAL)								
Chloride	N8LAP	20		180	mg/L	E	09/21/2022 12:54	R31734E
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	N8LAP	0.100		160	mg/L	1	09/16/2022 17:52	1966: 9
Magnesium	N8LAP	0.0E0		57.4	mg/L	1	09/16/2022 17:52	1966: 9
Potassium	N8LAP	0.100		3.58	mg/L	1	09/16/2022 17:52	1966: 9
Sodium	N8LAP	0.0E0		113	mg/L	1	09/16/2022 17:52	1966: 9
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	N8LAP	2E.0		64.9	µg/L	E	09/20/2022 1E53	1966: 9

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-006
 Matrix: GROUNDWATER

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: 08
 Collection Date: 09/14/2022 9:37

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		53.73	ft	1	09/14/2022 9:58	R319062
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.58		1	09/14/2022 9:58	R319062
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/14/2022 9:58	R319062
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		184	mV	1	09/14/2022 9:58	R319062
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		2200	µS/cm	1	09/14/2022 9:58	R319062
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		13.4	°C	1	09/14/2022 9:58	R319062
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		2.82	mg/L	1	09/14/2022 9:58	R319062
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	N8 LAP	0		486	mg/L	1	09/21/2022 14:52	R3173: 7
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	N8 LAP	0		0	mg/L	1	09/21/2022 14:52	R3173: 7
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	N8 LAP	20		1060	mg/L	1	09/20/2022 15:10	R317312
<i>QC has recovered outside the acceptance range. Data is validated by passing LCS.</i>								
SW-846 9036 (TOTAL)								
Sulfate	N8 LAP	E0		115	mg/L	E	09/21/2022 12:56	R317339
SW-846 9214 (TOTAL)								
Fluoride	N8 LAP	0.10		0.10	mg/L	1	09/22/2022 16:57	R31743:
SW-846 9251 (TOTAL)								
Chloride	N8 LAP	40		224	mg/L	10	09/21/2022 12:51	R31734E
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	N8 LAP	0.100		182	mg/L	1	09/16/2022 17:56	1966: 9
Magnesium	N8 LAP	0.0E0		48.0	mg/L	1	09/16/2022 17:56	1966: 9
Potassium	N8 LAP	0.100		6.92	mg/L	1	09/16/2022 17:56	1966: 9
Sodium	N8 LAP	0.0E0		133	mg/L	1	09/16/2022 17:56	1966: 9
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	N8 LAP	2E-0		90.0	µg/L	E	09/20/2022 15:43	1966: 9

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-007
 Matrix: GROUNDWATER

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: 08D
 Collection Date: 09/14/2022 9:09

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		53.96	ft	1	09/14/2022 9:09	R319062
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.47		1	09/14/2022 9:09	R319062
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/14/2022 9:09	R319062
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		214	mV	1	09/14/2022 9:09	R319062
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		2790	µS/cm	1	09/14/2022 9:09	R319062
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		13.7	°C	1	09/14/2022 9:09	R319062
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		0.46	mg/L	1	09/14/2022 9:09	R319062
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	N8 LAP	0		550	mg/L	1	09/21/2022 14:57	R3173: 7
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	N8 LAP	0		0	mg/L	1	09/21/2022 14:57	R3173: 7
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	N8 LAP	20		1410	mg/L	1	09/20/2022 15:11	R317312
<i>QC has recovered outside the acceptance range. Data is validated by passing LCS.</i>								
SW-846 9036 (TOTAL)								
Sulfate	N8 LAP	100		198	mg/L	10	09/21/2022 12:54	R317339
SW-846 9214 (TOTAL)								
Fluoride	N8 LAP	0.10		0.11	mg/L	1	09/22/2022 16:50	R31743:
SW-846 9251 (TOTAL)								
Chloride	N8 LAP	40		297	mg/L	10	09/21/2022 12:54	R31734E
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	N8 LAP	0.100		232	mg/L	1	09/16/2022 17:59	1966: 9
Magnesium	N8 LAP	0.0E0		66.3	mg/L	1	09/16/2022 17:59	1966: 9
Potassium	N8 LAP	0.100		4.45	mg/L	1	09/16/2022 17:59	1966: 9
Sodium	N8 LAP	0.0E0		181	mg/L	1	09/16/2022 17:59	1966: 9
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	N8 LAP	2E-0		95.1	µg/L	E	09/20/2022 15:50	1966: 9

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-011
 Matrix: GROUNDWATER

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: 16
 Collection Date: 09/14/2022 9:59

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		53.22	ft	1	09/14/2022 9:59	R319062
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.90		1	09/14/2022 9:59	R319062
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/14/2022 9:59	R319062
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		176	mV	1	09/14/2022 9:59	R319062
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		1120	µS/cm	1	09/14/2022 9:59	R319062
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		23.4	°C	1	09/14/2022 9:59	R319062
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		0.36	mg/L	1	09/14/2022 9:59	R319062
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	N8 LAP	0		255	mg/L	1	09/21/2022 1E51	R3173: 7
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	N8 LAP	0		0	mg/L	1	09/21/2022 1E51	R3173: 7
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	N8 LAP	20		572	mg/L	1	09/19/2022 1E51	R317312
<i>QC has recovered outside the acceptance range. Data is validated by passing LCS.</i>								
SW-846 9036 (TOTAL)								
Sulfate	N8 LAP	E0		65	mg/L	E	09/21/2022 1358	R317339
SW-846 9214 (TOTAL)								
Fluoride	N8 LAP	0.10		0.23	mg/L	1	09/22/2022 1654	R31743:
SW-846 9251 (TOTAL)								
Chloride	N8 LAP	20		101	mg/L	E	09/21/2022 1358	R31734E
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	N8 LAP	0.100		92.0	mg/L	1	09/16/2022 1754	1966: 9
Magnesium	N8 LAP	0.0E0		30.0	mg/L	1	09/16/2022 1754	1966: 9
Potassium	N8 LAP	0.100		5.08	mg/L	1	09/16/2022 1754	1966: 9
Sodium	N8 LAP	0.0E0		58.0	mg/L	1	09/16/2022 1754	1966: 9
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	N8 LAP	2E.0		131	µg/L	E	09/20/2022 1653	1966: 9

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-012
 Matrix: GROUNDWATER

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: 17
 Collection Date: 09/14/2022 10:17

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		55.25	ft	1	09/14/2022 10:51	R319062
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		7.01		1	09/14/2022 10:51	R319062
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/14/2022 10:51	R319062
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		181	mV	1	09/14/2022 10:51	R319062
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		1130	µS/cm	1	09/14/2022 10:51	R319062
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		20.7	°C	1	09/14/2022 10:51	R319062
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		4.44	mg/L	1	09/14/2022 10:51	R319062
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	N8 LAP	0		300	mg/L	1	09/21/2022 1E52	R3173: 7
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	N8 LAP	0		0	mg/L	1	09/21/2022 1E52	R3173: 7
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	N8 LAP	20		576	mg/L	1	09/19/2022 1E54	R317312
<i>QC has recovered outside the acceptance range. Data is validated by passing LCS.</i>								
SW-846 9036 (TOTAL)								
Sulfate	N8 LAP	E0		64	mg/L	E	09/21/2022 13E3	R317339
SW-846 9214 (TOTAL)								
Fluoride	N8 LAP	0.10		0.22	mg/L	1	09/22/2022 1: 50	R31743:
SW-846 9251 (TOTAL)								
Chloride	N8 LAP	20		84	mg/L	E	09/21/2022 13E3	R31734E
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	N8 LAP	0.100		91.6	mg/L	1	09/16/2022 1754	1966: 9
Magnesium	N8 LAP	0.0E0		33.7	mg/L	1	09/16/2022 1754	1966: 9
Potassium	N8 LAP	0.100		4.56	mg/L	1	09/16/2022 1754	1966: 9
Sodium	N8 LAP	0.0E0		55.2	mg/L	1	09/16/2022 1754	1966: 9
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	N8 LAP	2E.0		103	µg/L	E	09/20/2022 1654	1966: 9

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-029
 Matrix: GROUNDWATER

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: 40S
 Collection Date: 09/14/2022 14:51

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		41.21	ft	1	09/14/2022 14:51	R319062
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		7.78		1	09/14/2022 14:51	R319062
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/14/2022 14:51	R319062
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		120	mV	1	09/14/2022 14:51	R319062
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		929	µS/cm	1	09/14/2022 14:51	R319062
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		16.8	°C	1	09/14/2022 14:51	R319062
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		0.22	mg/L	1	09/14/2022 14:51	R319062
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		178	mg/L	1	09/21/2022 15:42	R318378
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2022 15:42	R318378
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50	H	485	mg/L	2.5	09/26/2022 11:04	R318645
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50	S	88	mg/L	5	09/21/2022 16:14	R318339
Matrix spike did not recover within control limits. Results verify by dilution.								
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.16	mg/L	1	09/22/2022 17:38	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	20		82	mg/L	5	09/21/2022 16:14	R318345
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		64.0	mg/L	1	09/19/2022 15:33	196682
Magnesium	NELAP	0.050		27.7	mg/L	1	09/19/2022 15:33	196682
Potassium	NELAP	0.100		6.78	mg/L	1	09/19/2022 15:33	196682
Sodium	NELAP	0.050		42.8	mg/L	1	09/19/2022 15:33	196682
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		1500	µg/L	5	09/20/2022 22:50	196682

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-033
 Matrix: GROUNDWATER

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: 48
 Collection Date: 09/14/2022 14:36

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		39.99	ft	1	09/14/2022 14:36	R319062
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		7.54		1	09/14/2022 14:36	R319062
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/14/2022 14:36	R319062
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		125	mV	1	09/14/2022 14:36	R319062
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		959	µS/cm	1	09/14/2022 14:36	R319062
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		17.4	°C	1	09/14/2022 14:36	R319062
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		0.23	mg/L	1	09/14/2022 14:36	R319062
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		174	mg/L	1	09/16/2022 11:52	R318111
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/16/2022 11:52	R318111
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		520	mg/L	1	09/20/2022 16:15	R318379
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		126	mg/L	5	09/21/2022 17:07	R318339
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.17	mg/L	1	09/22/2022 17:46	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	20		80	mg/L	5	09/21/2022 17:07	R318345
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		73.9	mg/L	1	09/19/2022 16:10	196682
Magnesium	NELAP	0.050		26.0	mg/L	1	09/19/2022 16:10	196682
Potassium	NELAP	0.100		5.64	mg/L	1	09/19/2022 16:10	196682
Sodium	NELAP	0.050		45.0	mg/L	1	09/19/2022 16:10	196682
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		2020	µg/L	5	09/20/2022 23:59	196682



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

Lab ID: 22081261-038

Client Sample ID: SG02

Matrix: GROUNDWATER

Collection Date: 09/13/2022 14:52

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		6.99	ft	1	09/13/2022 14:52	R319062

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-040
 Matrix: GROUNDWATER

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: 08 Duplicate
 Collection Date: 09/14/2022 9:37

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		53.73	ft	1	09/14/2022 9:37	R319062
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.58		1	09/14/2022 9:37	R319062
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/14/2022 9:37	R319062
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		184	mV	1	09/14/2022 9:37	R319062
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		2200	µS/cm	1	09/14/2022 9:37	R319062
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		13.4	°C	1	09/14/2022 9:37	R319062
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		2.82	mg/L	1	09/14/2022 9:37	R319062
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		496	mg/L	1	09/21/2022 16:11	R318378
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2022 16:11	R318378
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		1040	mg/L	1	09/20/2022 16:16	R318379
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		113	mg/L	5	09/21/2022 17:53	R318339
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10	J	0.10	mg/L	1	09/22/2022 18:08	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	40		214	mg/L	10	09/23/2022 9:16	R318566
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		172	mg/L	1	09/19/2022 16:36	196682
Magnesium	NELAP	0.050		44.8	mg/L	1	09/19/2022 16:36	196682
Potassium	NELAP	0.100		6.17	mg/L	1	09/19/2022 16:36	196682
Sodium	NELAP	0.050		122	mg/L	1	09/19/2022 16:36	196682
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		87.2	µg/L	5	09/21/2022 0:18	196682

Client: Ramboll
 Client Project: Hennepin Q3 Groundwater
 Lab ID: 22081261-041
 Matrix: AQUEOUS

Work Order: 22081261
 Report Date: 31-Oct-22
 Client Sample ID: Field Blank
 Collection Date: 09/14/2022 16:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		2	mg/L	1	09/22/2022 8:14	R318378
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/22/2022 8:14	R318378
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		< 20	mg/L	1	09/20/2022 16:16	R318379
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		< 10	mg/L	1	09/21/2022 17:58	R318339
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		< 0.10	mg/L	1	09/22/2022 18:10	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		< 4	mg/L	1	09/21/2022 17:58	R318345
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		< 0.100	mg/L	1	09/19/2022 16:39	196682
Magnesium	NELAP	0.050		< 0.050	mg/L	1	09/19/2022 16:39	196682
Potassium	NELAP	0.100		< 0.100	mg/L	1	09/20/2022 10:13	196682
Sodium	NELAP	0.050		< 0.050	mg/L	1	09/19/2022 16:39	196682
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	09/21/2022 0:24	196682

Client: Ramboll**Work Order:** 22081261**Client Project:** Hennepin Q3 Groundwater**Report Date:** 31-Oct-22

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
22081261-003	05R	Groundwater	7	09/14/2022 14:20
22081261-004	05DR	Groundwater	7	09/14/2022 14:05
22081261-005	07	Groundwater	7	09/14/2022 17:21
22081261-006	08	Groundwater	9	09/14/2022 9:37
22081261-007	08D	Groundwater	9	09/14/2022 9:09
22081261-011	16	Groundwater	5	09/14/2022 9:59
22081261-012	17	Groundwater	5	09/14/2022 10:17
22081261-029	40S	Groundwater	7	09/14/2022 14:51
22081261-033	48	Groundwater	2	09/14/2022 14:36
22081261-038	SG02	Groundwater	1	09/13/2022 14:52
22081261-040	08 Duplicate	Groundwater	9	09/14/2022 9:37
22081261-041	Field Blank	Aqueous	9	09/14/2022 16:45

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
22081261-003A	05R	09/14/2022 14:20	09/15/2022 10:05		
	Field Elevation Measurements				09/14/2022 14:20
	Standard Method 4500-H B 2001 Field				09/14/2022 14:20
	Standard Methods 2130 B Field				09/14/2022 14:20
	Standard Methods 2320 B 1997, 2011				09/21/2022 14:34
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 14:20
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2022 14:34
	Standard Methods 2320 B 1997, 2011				09/21/2022 14:34
	Standard Methods 2510 B Field				09/14/2022 14:20
	Standard Methods 2540 C (Total) 1997, 2011				09/19/2022 15:46
	Standard Methods 2550 B Field				09/14/2022 14:20
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:41
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/16/2022 13:31
	Standard Methods 4500-O G Field				09/14/2022 14:20
	SW-846 9036 (Total)				09/21/2022 12:28
	SW-846 9214 (Total)				09/22/2022 16:30
	SW-846 9251 (Total)				09/21/2022 12:27
22081261-003B	05R	09/14/2022 14:20	09/15/2022 10:05		
	SW-846 9036 (Dissolved)				09/19/2022 13:39
	SW-846 9214 (Dissolved)				09/20/2022 11:24
	SW-846 9251 (Dissolved)				09/19/2022 13:39
22081261-003C	05R	09/14/2022 14:20	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/16/2022 18:00
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/20/2022 15:24
22081261-003D	05R	09/14/2022 14:20	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			09/19/2022 12:15	09/20/2022 9:00
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/20/2022 22:40
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/21/2022 19:42
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 4:33
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 17:34
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/30/2022 10:17
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	10/03/2022 15:30
	SW-846 7470A (Dissolved)			09/19/2022 10:35	09/20/2022 10:55
22081261-003E	05R	09/14/2022 14:20	09/15/2022 10:05		
	SW-846 9012A (Total)			09/16/2022 10:30	09/19/2022 14:40
22081261-003F	05R	09/14/2022 14:20	09/15/2022 10:05		
	SW-846 9066 (Total)				09/20/2022 7:28

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

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Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
22081261-003G	05R	09/14/2022 14:20	09/15/2022 10:05		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				09/16/2022 19:46
22081261-004A	05DR	09/14/2022 14:05	09/15/2022 10:05		
	Field Elevation Measurements				09/14/2022 14:05
	Standard Method 4500-H B 2001 Field				09/14/2022 14:05
	Standard Methods 2130 B Field				09/14/2022 14:05
	Standard Methods 2320 B 1997, 2011				09/21/2022 14:40
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 14:05
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2022 14:40
	Standard Methods 2320 B 1997, 2011				09/21/2022 14:40
	Standard Methods 2510 B Field				09/14/2022 14:05
	Standard Methods 2540 C (Total) 1997, 2011				09/19/2022 15:46
	Standard Methods 2550 B Field				09/14/2022 14:05
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:45
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/16/2022 13:29
	Standard Methods 4500-O G Field				09/14/2022 14:05
	SW-846 9036 (Total)				09/21/2022 12:36
	SW-846 9214 (Total)				09/22/2022 16:33
	SW-846 9251 (Total)				09/21/2022 12:35
22081261-004B	05DR	09/14/2022 14:05	09/15/2022 10:05		
	SW-846 9036 (Dissolved)				09/19/2022 13:47
	SW-846 9214 (Dissolved)				09/20/2022 11:35
	SW-846 9251 (Dissolved)				09/19/2022 13:47
22081261-004C	05DR	09/14/2022 14:05	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/16/2022 18:18
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/20/2022 15:30
22081261-004D	05DR	09/14/2022 14:05	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			09/19/2022 12:15	09/20/2022 8:57
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/20/2022 22:20
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 16:06
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/30/2022 9:49
	SW-846 7470A (Dissolved)			09/19/2022 10:35	09/20/2022 10:57
22081261-004E	05DR	09/14/2022 14:05	09/15/2022 10:05		
	SW-846 9012A (Total)			09/16/2022 10:30	09/19/2022 14:44
22081261-004F	05DR	09/14/2022 14:05	09/15/2022 10:05		
	SW-846 9066 (Total)				09/20/2022 9:00
22081261-004G	05DR	09/14/2022 14:05	09/15/2022 10:05		

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Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	Standard Methods 4500-NH3 G (Total) 1997, 2011				09/16/2022 19:56
22081261-005A	07	09/14/2022 17:21	09/15/2022 10:05		
	Field Elevation Measurements				09/14/2022 17:21
	Standard Method 4500-H B 2001 Field				09/14/2022 17:21
	Standard Methods 2130 B Field				09/14/2022 17:21
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 17:21
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2022 14:45
	Standard Methods 2320 B 1997, 2011				09/21/2022 14:45
	Standard Methods 2510 B Field				09/14/2022 17:21
	Standard Methods 2540 C (Total) 1997, 2011				09/20/2022 15:17
	Standard Methods 2550 B Field				09/14/2022 17:21
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:43
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/16/2022 14:35
	Standard Methods 4500-O G Field				09/14/2022 17:21
	SW-846 9036 (Total)				09/21/2022 12:43
	SW-846 9214 (Total)				09/22/2022 16:35
	SW-846 9251 (Total)				09/21/2022 12:43
22081261-005B	07	09/14/2022 17:21	09/15/2022 10:05		
	EPA 314.0				09/21/2022 0:00
22081261-005C	07	09/14/2022 17:21	09/15/2022 10:05		
	SW-846 9036 (Dissolved)				09/19/2022 13:55
	SW-846 9214 (Dissolved)				09/20/2022 11:37
	SW-846 9251 (Dissolved)				09/19/2022 13:55
22081261-005D	07	09/14/2022 17:21	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/16/2022 18:22
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/19/2022 20:50
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/20/2022 15:37
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/22/2022 14:14
	SW-846 7470A (Total)			09/19/2022 10:35	09/20/2022 10:59
22081261-005E	07	09/14/2022 17:21	09/15/2022 10:05		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/20/2022 22:27
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/21/2022 19:23
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 4:21
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 16:12
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	10/03/2022 15:05
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			10/18/2022 14:32	10/26/2022 17:33
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			10/18/2022 14:32	10/26/2022 17:39

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Client Project: Hennepin Q3 Groundwater

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Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22081261-005F	07	09/14/2022 17:21	09/15/2022 10:05	09/19/2022 10:35	09/20/2022 11:01
	SW-846 7470A (Dissolved)				
22081261-005G	07	09/14/2022 17:21	09/15/2022 10:05	09/16/2022 10:30	09/19/2022 14:49
	SW-846 9012A (Total)				
22081261-006A	08	09/14/2022 9:37	09/15/2022 10:05		09/16/2022 12:42
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				
22081261-006B	08	09/14/2022 9:37	09/15/2022 10:05		09/14/2022 9:37
	Field Elevation Measurements				
	Standard Method 4500-H B 2001 Field				09/14/2022 9:37
	Standard Methods 2130 B Field				09/14/2022 9:37
	Standard Methods 2320 B 1997, 2011				09/21/2022 14:52
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 9:37
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2022 14:52
	Standard Methods 2320 B 1997, 2011				09/21/2022 14:52
	Standard Methods 2510 B Field				09/14/2022 9:37
	Standard Methods 2540 C (Total) 1997, 2011				09/20/2022 15:10
	Standard Methods 2550 B Field				09/14/2022 9:37
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:43
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/16/2022 15:39
	Standard Methods 4500-O G Field				09/14/2022 9:37
	SW-846 9036 (Total)				09/21/2022 12:46
	SW-846 9214 (Total)				09/22/2022 16:38
	SW-846 9251 (Total)				09/21/2022 12:51
22081261-006C	08	09/14/2022 9:37	09/15/2022 10:05		09/21/2022 0:00
	EPA 314.0				
22081261-006D	08	09/14/2022 9:37	09/15/2022 10:05		09/19/2022 13:58
	SW-846 9036 (Dissolved)				
	SW-846 9214 (Dissolved)				09/20/2022 11:40
	SW-846 9251 (Dissolved)				09/19/2022 13:58
22081261-006E	08	09/14/2022 9:37	09/15/2022 10:05		09/16/2022 9:55
	SW-846 3005A, 6010B, Metals by ICP (Total)				09/16/2022 18:26
	SW-846 3005A, 6020A, Metals by ICPMS (Total)				09/19/2022 20:56
	SW-846 3005A, 6020A, Metals by ICPMS (Total)				09/20/2022 15:43
	SW-846 3005A, 6020A, Metals by ICPMS (Total)				09/22/2022 14:57
	SW-846 7470A (Total)			09/19/2022 10:35	09/20/2022 11:04
22081261-006E	08	09/14/2022 9:37	09/15/2022 10:05		09/19/2022 12:15
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)				09/20/2022 8:59
22081261-006E	08	09/14/2022 9:37	09/15/2022 10:05		09/19/2022 12:15
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)				09/20/2022 22:33

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Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/21/2022 19:29
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 4:27
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 16:18
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/30/2022 9:54
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	10/03/2022 15:11
	SW-846 7470A (Dissolved)			09/19/2022 10:35	09/20/2022 11:06
22081261-006F	08	09/14/2022 9:37	09/15/2022 10:05		
	SW-846 9012A (Total)			09/16/2022 10:30	09/19/2022 14:53
22081261-006G	08	09/14/2022 9:37	09/15/2022 10:05		
	SW-846 9066 (Total)				09/20/2022 9:03
22081261-006H	08	09/14/2022 9:37	09/15/2022 10:05		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				09/16/2022 22:23
22081261-006I	08	09/14/2022 9:37	09/15/2022 10:05		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				09/16/2022 13:06
22081261-007A	08D	09/14/2022 9:09	09/15/2022 10:05		
	Field Elevation Measurements				09/14/2022 9:09
	Standard Method 4500-H B 2001 Field				09/14/2022 9:09
	Standard Methods 2130 B Field				09/14/2022 9:09
	Standard Methods 2320 B 1997, 2011				09/21/2022 14:58
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 9:09
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2022 14:58
	Standard Methods 2320 B 1997, 2011				09/21/2022 14:58
	Standard Methods 2510 B Field				09/14/2022 9:09
	Standard Methods 2540 C (Total) 1997, 2011				09/20/2022 15:11
	Standard Methods 2550 B Field				09/14/2022 9:09
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:46
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/16/2022 15:41
	Standard Methods 4500-O G Field				09/14/2022 9:09
	SW-846 9036 (Total)				09/21/2022 12:54
	SW-846 9214 (Total)				09/22/2022 16:40
	SW-846 9251 (Total)				09/21/2022 12:54
22081261-007B	08D	09/14/2022 9:09	09/15/2022 10:05		
	EPA 314.0				09/21/2022 0:00
22081261-007C	08D	09/14/2022 9:09	09/15/2022 10:05		
	SW-846 9036 (Dissolved)				09/19/2022 14:22
	SW-846 9214 (Dissolved)				09/20/2022 11:43
	SW-846 9251 (Dissolved)				09/19/2022 14:22

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Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22081261-007D	08D	09/14/2022 9:09	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/16/2022 18:29
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/19/2022 21:03
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/20/2022 15:50
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/22/2022 15:02
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			10/19/2022 7:43	10/20/2022 17:27
	SW-846 7470A (Total)			09/19/2022 10:35	09/20/2022 11:08
22081261-007E	08D	09/14/2022 9:09	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			09/19/2022 12:15	09/20/2022 9:40
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/20/2022 23:24
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/21/2022 19:35
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 5:17
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 16:50
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/30/2022 9:58
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	10/03/2022 15:17
	SW-846 7470A (Dissolved)			09/19/2022 10:35	09/20/2022 11:10
22081261-007F	08D	09/14/2022 9:09	09/15/2022 10:05		
	SW-846 9012A (Total)			09/16/2022 10:30	09/19/2022 14:57
22081261-007G	08D	09/14/2022 9:09	09/15/2022 10:05		
	SW-846 9066 (Total)				09/20/2022 9:12
22081261-007H	08D	09/14/2022 9:09	09/15/2022 10:05		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				09/16/2022 20:01
22081261-007I	08D	09/14/2022 9:09	09/15/2022 10:05		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				09/16/2022 13:33
22081261-011A	16	09/14/2022 9:59	09/15/2022 10:05		
	Field Elevation Measurements				09/14/2022 9:59
	Standard Method 4500-H B 2001 Field				09/14/2022 9:59
	Standard Methods 2130 B Field				09/14/2022 9:59
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 9:59
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2022 15:15
	Standard Methods 2320 B 1997, 2011				09/21/2022 15:15
	Standard Methods 2510 B Field				09/14/2022 9:59
	Standard Methods 2540 C (Total) 1997, 2011				09/19/2022 15:48
	Standard Methods 2550 B Field				09/14/2022 9:59
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:48
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/16/2022 16:20
	Standard Methods 4500-O G Field				09/14/2022 9:59

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Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	SW-846 9036 (Total)				09/21/2022 13:37
	SW-846 9214 (Total)				09/22/2022 16:45
	SW-846 9251 (Total)				09/21/2022 13:37
22081261-011B	16	09/14/2022 9:59	09/15/2022 10:05		
	SW-846 9036 (Dissolved)				09/19/2022 15:23
	SW-846 9214 (Dissolved)				09/20/2022 11:50
	SW-846 9251 (Dissolved)				09/21/2022 10:49
22081261-011C	16	09/14/2022 9:59	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/16/2022 18:41
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/20/2022 16:34
22081261-011D	16	09/14/2022 9:59	09/15/2022 10:05		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/20/2022 23:50
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/21/2022 20:44
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 5:41
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 17:15
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	10/03/2022 16:51
	SW-846 7470A (Dissolved)			09/19/2022 10:35	09/20/2022 11:24
22081261-011E	16	09/14/2022 9:59	09/15/2022 10:05		
	SW-846 9012A (Total)			09/16/2022 17:53	09/19/2022 15:54
22081261-012A	17	09/14/2022 10:17	09/15/2022 10:05		
	Field Elevation Measurements				09/14/2022 10:17
	Standard Method 4500-H B 2001 Field				09/14/2022 10:17
	Standard Methods 2130 B Field				09/14/2022 10:17
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 10:17
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2022 15:21
	Standard Methods 2320 B 1997, 2011				09/21/2022 15:21
	Standard Methods 2510 B Field				09/14/2022 10:17
	Standard Methods 2540 C (Total) 1997, 2011				09/19/2022 15:48
	Standard Methods 2550 B Field				09/14/2022 10:17
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:49
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/16/2022 16:23
	Standard Methods 4500-O G Field				09/14/2022 10:17
	SW-846 9036 (Total)				09/21/2022 13:53
	SW-846 9214 (Total)				09/22/2022 17:00
	SW-846 9251 (Total)				09/21/2022 13:53
22081261-012B	17	09/14/2022 10:17	09/15/2022 10:05		
	SW-846 9036 (Dissolved)				09/19/2022 15:34

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Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	SW-846 9214 (Dissolved)				09/20/2022 12:02
	SW-846 9251 (Dissolved)				09/19/2022 15:39
22081261-012C	17	09/14/2022 10:17	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/16/2022 18:44
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/20/2022 16:41
22081261-012D	17	09/14/2022 10:17	09/15/2022 10:05		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/20/2022 23:56
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/21/2022 20:51
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 5:47
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	09/23/2022 17:21
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:15	10/03/2022 16:58
	SW-846 7470A (Dissolved)			09/19/2022 10:35	09/20/2022 11:26
22081261-012E	17	09/14/2022 10:17	09/15/2022 10:05		
	SW-846 9012A (Total)			09/16/2022 17:53	09/19/2022 15:58
22081261-029A	40S	09/14/2022 14:51	09/15/2022 10:05		
	Field Elevation Measurements				09/14/2022 14:51
	Standard Method 4500-H B 2001 Field				09/14/2022 14:51
	Standard Methods 2130 B Field				09/14/2022 14:51
	Standard Methods 2320 B 1997, 2011				09/21/2022 15:42
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 14:51
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2022 15:42
	Standard Methods 2320 B 1997, 2011				09/21/2022 15:42
	Standard Methods 2510 B Field				09/14/2022 14:51
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 11:04
	Standard Methods 2550 B Field				09/14/2022 14:51
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:51
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/16/2022 14:11
	Standard Methods 4500-O G Field				09/14/2022 14:51
	SW-846 9036 (Total)				09/21/2022 16:14
	SW-846 9214 (Total)				09/22/2022 17:38
	SW-846 9251 (Total)				09/21/2022 16:14
22081261-029B	40S	09/14/2022 14:51	09/15/2022 10:05		
	SW-846 9036 (Dissolved)				09/19/2022 17:47
	SW-846 9214 (Dissolved)				09/20/2022 12:08
	SW-846 9251 (Dissolved)				09/19/2022 17:47
22081261-029C	40S	09/14/2022 14:51	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/19/2022 15:33

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name				Prep Date/Time	Analysis Date/Time
22081261-029D	SW-846 3005A, 6020A, Metals by ICPMS (Total)	09/14/2022 14:51	09/15/2022 10:05	09/16/2022 9:55	09/20/2022 22:50
	40S				
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			09/19/2022 12:16	09/20/2022 9:48
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/21/2022 1:39
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/23/2022 20:04
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/26/2022 13:55
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/29/2022 19:10
22081261-029E	SW-846 7470A (Dissolved)	09/14/2022 14:51	09/15/2022 10:05	09/19/2022 10:39	09/20/2022 12:11
	40S				
22081261-029F	SW-846 9012A (Total)	09/14/2022 14:51	09/15/2022 10:05	09/16/2022 17:53	09/19/2022 16:07
	40S				
22081261-029G	SW-846 9066 (Total)	09/14/2022 14:51	09/15/2022 10:05		09/20/2022 9:52
	40S				
22081261-033A	Standard Methods 4500-NH3 G (Total) 1997, 2011	09/14/2022 14:36	09/15/2022 10:05		09/16/2022 20:47
	48				
22081261-033B	Field Elevation Measurements	09/14/2022 14:36	09/15/2022 10:05		09/14/2022 14:36
	Standard Method 4500-H B 2001 Field				09/14/2022 14:36
	Standard Methods 2130 B Field				09/14/2022 14:36
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 14:36
	Standard Methods 2320 B (Total) 1997, 2011				09/16/2022 11:52
	Standard Methods 2320 B 1997, 2011				09/16/2022 11:52
	Standard Methods 2510 B Field				09/14/2022 14:36
	Standard Methods 2540 C (Total) 1997, 2011				09/20/2022 16:15
	Standard Methods 2550 B Field				09/14/2022 14:36
	Standard Methods 4500-O G Field				09/14/2022 14:36
	SW-846 9036 (Total)				09/21/2022 17:07
	SW-846 9214 (Total)				09/22/2022 17:46
	SW-846 9251 (Total)				09/21/2022 17:07
22081261-038A	SW-846 3005A, 6010B, Metals by ICP (Total)	09/13/2022 14:52	09/15/2022 10:05	09/16/2022 9:55	09/19/2022 16:10
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/20/2022 23:59
22081261-040A	SG02	09/14/2022 9:37	09/15/2022 10:05		
	Field Elevation Measurements				09/13/2022 14:52
22081261-040A	08 Duplicate	09/14/2022 9:37	09/15/2022 10:05		
	Field Elevation Measurements				09/14/2022 9:37
	Standard Method 4500-H B 2001 Field				09/14/2022 9:37
22081261-040A	Standard Methods 2130 B Field	09/14/2022 9:37	09/15/2022 10:05		09/14/2022 9:37
	Standard Methods 2130 B Field				09/14/2022 9:37

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name				Prep Date/Time	Analysis Date/Time
	Standard Methods 2320 B 1997, 2011				09/21/2022 16:11
	Standard Methods 18th Ed. 2580 B Field				09/14/2022 9:37
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2022 16:11
	Standard Methods 2320 B 1997, 2011				09/21/2022 16:11
	Standard Methods 2510 B Field				09/14/2022 9:37
	Standard Methods 2540 C (Total) 1997, 2011				09/20/2022 16:16
	Standard Methods 2550 B Field				09/14/2022 9:37
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:53
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/15/2022 19:22
	Standard Methods 4500-O G Field				09/14/2022 9:37
	SW-846 9036 (Total)				09/21/2022 17:53
	SW-846 9214 (Total)				09/22/2022 18:08
	SW-846 9251 (Total)				09/23/2022 9:16
22081261-040B	08 Duplicate	09/14/2022 9:37	09/15/2022 10:05		
	EPA 314.0				09/21/2022 0:00
22081261-040C	08 Duplicate	09/14/2022 9:37	09/15/2022 10:05		
	SW-846 9036 (Dissolved)				09/19/2022 18:44
	SW-846 9214 (Dissolved)				09/20/2022 12:12
	SW-846 9251 (Dissolved)				09/19/2022 18:43
22081261-040D	08 Duplicate	09/14/2022 9:37	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/19/2022 16:36
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/20/2022 1:38
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/21/2022 0:18
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/23/2022 0:22
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			10/19/2022 7:43	10/20/2022 18:49
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	10/20/2022 18:55
	SW-846 7470A (Total)			09/19/2022 10:39	09/20/2022 12:29
22081261-040E	08 Duplicate	09/14/2022 9:37	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			09/19/2022 12:16	09/20/2022 9:49
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/21/2022 2:49
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/23/2022 8:27
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/23/2022 20:23
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/26/2022 14:20
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/29/2022 19:16
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	10/03/2022 17:23
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			10/18/2022 14:32	10/26/2022 17:58
	SW-846 7470A (Dissolved)			09/19/2022 10:39	09/20/2022 12:32

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22081261-040F	08 Duplicate	09/14/2022 9:37	09/15/2022 10:05		
	SW-846 9012A (Total)			09/16/2022 17:53	09/19/2022 16:15
22081261-040G	08 Duplicate	09/14/2022 9:37	09/15/2022 10:05		
	SW-846 9066 (Total)				09/20/2022 9:56
22081261-040H	08 Duplicate	09/14/2022 9:37	09/15/2022 10:05		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				09/19/2022 15:29
22081261-040I	08 Duplicate	09/14/2022 9:37	09/15/2022 10:05		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				09/16/2022 15:34
22081261-041A	Field Blank	09/14/2022 16:45	09/15/2022 10:05		
	Standard Methods 2320 B 1997, 2011				09/22/2022 8:14
	Standard Methods 2320 B (Total) 1997, 2011				09/22/2022 8:14
	Standard Methods 2320 B 1997, 2011				09/22/2022 8:14
	Standard Methods 2540 C (Total) 1997, 2011				09/20/2022 16:16
	Standard Methods 4500-NO2 B (Total) 2000, 2011				09/15/2022 18:53
	Standard Methods 4500-NO3 F (Total) 2000, 2011				09/16/2022 14:04
	SW-846 9036 (Total)				09/21/2022 17:58
	SW-846 9214 (Total)				09/22/2022 18:10
	SW-846 9251 (Total)				09/21/2022 17:58
22081261-041B	Field Blank	09/14/2022 16:45	09/15/2022 10:05		
	EPA 314.0				09/21/2022 0:00
22081261-041C	Field Blank	09/14/2022 16:45	09/15/2022 10:05		
	SW-846 9036 (Dissolved)				09/19/2022 19:02
	SW-846 9214 (Dissolved)				09/20/2022 12:15
	SW-846 9251 (Dissolved)				09/19/2022 19:01
22081261-041D	Field Blank	09/14/2022 16:45	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/19/2022 16:39
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/16/2022 9:55	09/20/2022 10:13
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/20/2022 1:44
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/21/2022 0:24
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/16/2022 9:55	09/23/2022 0:27
	SW-846 7470A (Total)			09/19/2022 10:39	09/20/2022 12:38
22081261-041E	Field Blank	09/14/2022 16:45	09/15/2022 10:05		
	SW-846 3005A, 6010B, Metals by ICP (Dissolved)			09/19/2022 12:16	09/20/2022 9:58
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/21/2022 2:56
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/22/2022 0:04
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/23/2022 8:33

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name				Prep Date/Time	Analysis Date/Time
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/23/2022 20:29
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/26/2022 14:26
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/29/2022 19:22
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	10/03/2022 18:26
	SW-846 7470A (Dissolved)			09/19/2022 10:39	09/20/2022 12:41
22081261-041F	Field Blank	09/14/2022 16:45	09/15/2022 10:05		
	SW-846 9012A (Total)			09/16/2022 17:53	09/19/2022 16:41
22081261-041G	Field Blank	09/14/2022 16:45	09/15/2022 10:05		
	SW-846 9066 (Total)				09/20/2022 10:01
22081261-041H	Field Blank	09/14/2022 16:45	09/15/2022 10:05		
	Standard Methods 4500-NH3 G (Total) 1997, 2011				09/16/2022 20:54
22081261-041I	Field Blank	09/14/2022 16:45	09/15/2022 10:05		
	SW-846 5030, 8260B, Volatile Organic Compounds by GC/MS				09/16/2022 9:03

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

STANDARD METHOD 4500-H B 2001 FIELD

Batch R319062		SampType: LCS		Units						
SampID: LCS-R319062										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH	*	1.00		6.99	7.000	0	99.9	98.57	101.4	09/13/2022
pH	*	1.00		7.05	7.000	0	100.7	98.57	101.4	09/14/2022

STANDARD METHODS 2510 B FIELD

Batch R319062		SampType: LCS		Units $\mu\text{S/cm}$							Date Analyzed
SampID: LCS-R319062											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Spec. Conductance, Field	*	0		1400	1409	0	99.1	90	110	09/14/2022	
Spec. Conductance, Field	*	0		1390	1409	0	98.4	90	110	09/13/2022	

STANDARD METHODS 2320 B 1997, 2011

Batch R318378		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						09/21/2022

Batch R318378		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	234.0	0	101.3	90	110	09/21/2022	

Batch R318378		SampType: DUP		Units mg/L				RPD Limit: 10				Date Analyzed
SampID: 22081261-040ADUP												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Alkalinity, Total (as CaCO3)			0		509				496.0	2.59	09/21/2022	

Batch R318378		SampType: DUP		Units mg/L				RPD Limit: 10				Date Analyzed
SampID: 22081261-041ADUP												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Alkalinity, Total (as CaCO3)			0	R	1				2.000	66.67	09/22/2022	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R318312 SampType: MBLK Units mg/L

SampleID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/19/2022
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/19/2022
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/19/2022

Batch R318312 SampType: LCS Units mg/L

SampleID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		966	1000	0	96.6	90	110	09/19/2022
Total Dissolved Solids		20		958	1000	0	95.8	90	110	09/19/2022
Total Dissolved Solids		20		940	1000	0	94.0	90	110	09/19/2022

Batch R318312 SampType: DUP Units mg/L

RPD Limit: 5

SampleID: 22081261-001ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		628				614.0	2.25	09/19/2022

Batch R318312 SampType: DUP Units mg/L

RPD Limit: 5

SampleID: 22081261-009ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20	R	534				494.0	7.78	09/19/2022

Batch R318312 SampType: DUP Units mg/L

RPD Limit: 5

SampleID: 22081261-034ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20	R	590				658.0	10.90	09/19/2022

Batch R318379 SampType: MBLK Units mg/L

SampleID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/20/2022

Batch R318379 SampType: LCS Units mg/L

SampleID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		926	1000	0	92.6	90	110	09/20/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R318379		SampType: DUP		Units mg/L				RPD Limit: 5			Date Analyzed	
SampID: 22081261-030ADUP												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Total Dissolved Solids			20		510				508.0	0.39		
09/20/2022												

Batch R318379		SampType: DUP		Units mg/L				RPD Limit: 5			
SampID: 22081261-045ADUP											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids			20		400				394.0	1.51	09/20/2022

Batch R318497		SampType: MBLK		Units mg/L						
SampID: MBLK										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/22/2022
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/23/2022
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/22/2022

Batch R318497		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		970	1000	0	97.0	90	110	09/23/2022
Total Dissolved Solids		20		954	1000	0	95.4	90	110	09/22/2022
Total Dissolved Solids		20		952	1000	0	95.2	90	110	09/22/2022

Batch R318497		SampType: DUP		Units mg/L				RPD Limit: 5			Date Analyzed	
SampID: 22081261-046ADUP												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Total Dissolved Solids			20	H	400				388.0	3.05		
09/22/2022												

Batch R318645		SampType: MBLK		Units mg/L							Date Analyzed
SampID: MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100		
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100		



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R318645 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		974	1000	0	97.4	90	110	09/26/2022
Total Dissolved Solids		20		952	1000	0	95.2	90	110	09/26/2022

Batch R318645 SampType: DUP Units mg/L

RPD Limit: 5

SampID: 22081261-029ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		50	H	480				485.0	1.04	09/26/2022

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

Batch R318162 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	09/16/2022

Batch R318162 SampType: LCS Units mg/L

SampID: ICB/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10		1.02	1.000	0	102.2	90	110	09/16/2022

Batch R318162 SampType: MS Units mg/L

SampID: 22081261-003GMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	1.78	2.000	0.02900	87.5	90	110	09/16/2022

Batch R318162 SampType: MSD Units mg/L

RPD Limit: 10

SampID: 22081261-003GMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Ammonia (as N)		0.10	S	1.73	2.000	0.02900	85.1	1.779	2.74	09/16/2022

Batch R318237 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	09/19/2022



Quality Control Results

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Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch R318237 SampType: LCS Units mg/L

SampleID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Ammonia (as N)		0.10		1.08	1.000	0	108.0	90	110	09/19/2022

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

Batch R318110 SampType: MBLK Units mg/L

SampleID: 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	09/15/2022

Batch R318110 SampType: LCS Units mg/L

SampleID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.25		1.03	1.100	0	93.6	90	110	09/15/2022

Batch R318110 SampType: MS Units mg/L

SampleID: 22081261-002AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		0.52	0.5000	0	103.6	85	115	09/15/2022

Batch R318110 SampType: MSD Units mg/L

SampleID: 22081261-002AMSD

RPD Limit: 10

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		0.52	0.5000	0	104.6	0.5180	0.96	09/15/2022

Batch R318110 SampType: MS Units mg/L

SampleID: 22081261-003AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		0.54	0.5000	0.01600	105.8	85	115	09/15/2022

Batch R318110 SampType: MSD Units mg/L

SampleID: 22081261-003AMSD

RPD Limit: 10

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		0.55	0.5000	0.01600	106.6	0.5450	0.73	09/15/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch R318110 SampType: MS Units mg/L

SampleID: 22081261-004AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		0.52	0.5000	0	104.8	85	115	09/15/2022

Batch R318110 SampType: MSD Units mg/L

RPD Limit: 10

SampleID: 22081261-004AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrite (as N)		0.05		0.52	0.5000	0	104.6	0.5240	0.19	09/15/2022

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

Batch R318114 SampType: MBLK Units mg/L

SampleID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.050		< 0.050	0.0090	0	0	-100	100	09/15/2022

Batch R318114 SampType: LCS Units mg/L

SampleID: 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		0.519	0.5000	0	103.8	90	110	09/15/2022

Batch R318170 SampType: MBLK Units mg/L

SampleID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.050		< 0.050	0.0090	0	0	-100	100	09/16/2022

Batch R318170 SampType: LCS Units mg/L

SampleID: 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		0.517	0.5000	0	103.4	90	110	09/16/2022

Batch R318170 SampType: MS Units mg/L

SampleID: 22081261-005AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		2.50		26.2	12.50	13.35	102.6	85	115	09/16/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch R318170		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed
SampID: 22081261-005AMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Nitrogen, Nitrate-Nitrite (as N)		2.50		26.3	12.50	13.35	103.7	26.18	0.48	09/16/2022	

Batch R318170		SampType: MS		Units mg/L						
SampID: 22081261-010AMS										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.500	H	6.44	2.500	3.945	100.0	85	115	09/16/2022

Batch R318170		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed
SampID: 22081261-010AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Nitrogen, Nitrate-Nitrite (as N)			0.500	H	6.38	2.500	3.945	97.3	6.444	1.05	09/16/2022

Batch R318170		SampType: MS		Units mg/L							
SampID: 22081261-043AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Nitrate-Nitrite (as N)		0.500		5.84	2.500	3.394	97.8	85	115	09/16/2022	

Batch R318170		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed
SampID: 22081261-043AMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Nitrogen, Nitrate-Nitrite (as N)		0.500		5.83	2.500	3.394	97.5	5.840	0.14	09/16/2022	

Batch R318305		SampType: MBLK		Units mg/L							Date Analyzed	
SampID: ICB/MBLK												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Nitrogen, Nitrate-Nitrite (as N)		0.050		< 0.050	0.0090	0	0	-100	100	09/20/2022		

Batch R318305		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		0.521	0.5000	0	104.2	90	110	09/20/2022	

Batch R318368		SampType: MBLK		Units mg/L							Date Analyzed
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Nitrogen, Nitrate-Nitrite (as N)		0.050		< 0.050	0.0090	0	0	-100	100	09/21/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch R318368 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		0.518	0.5000	0	103.6	90	110	09/21/2022

Batch R318368 SampType: MS Units mg/L

SampID: 22081261-046AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.500	H	4.35	2.500	2.004	93.7	85	115	09/21/2022

Batch R318368 SampType: MSD Units mg/L

RPD Limit: 10

SampID: 22081261-046AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Nitrogen, Nitrate-Nitrite (as N)		0.500	H	4.49	2.500	2.004	99.4	4.346	3.24	09/21/2022

SW-846 9012A (TOTAL)

Batch 196683 SampType: MBLK Units mg/L

SampID: MBLK 220916 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	09/19/2022

Batch 196683 SampType: LCS Units mg/L

SampID: LCS 220916 TCN1

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.026	0.0250	0	104.0	90	110	09/19/2022

Batch 196683 SampType: MS Units mg/L

SampID: 22081261-009EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.027	0.0250	0	106.9	75	125	09/19/2022

Batch 196683 SampType: MSD Units mg/L

RPD Limit: 15

SampID: 22081261-009EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005		0.027	0.0250	0	108.1	0.02673	1.06	09/19/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 9012A (TOTAL)

Batch 196703 SampType: MBLK Units mg/L

SampID: MBLK 220916 TCN2

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	09/19/2022

Batch 196703 SampType: LCS Units mg/L

SampID: LCS 220916 TCN2

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.027	0.0250	0	106.2	90	110	09/19/2022

Batch 196703 SampType: MS Units mg/L

SampID: 22081261-013FMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.027	0.0250	0	107.6	75	125	09/19/2022

Batch 196703 SampType: MSD Units mg/L

RPD Limit: 15

SampID: 22081261-013FMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005		0.028	0.0250	0	111.3	0.02689	3.44	09/19/2022

Batch 196703 SampType: MS Units mg/L

SampID: 22081261-044DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide		0.005		0.027	0.0250	0	106.5	75	125	09/19/2022

Batch 196703 SampType: MSD Units mg/L

RPD Limit: 15

SampID: 22081261-044DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide		0.005		0.024	0.0250	0	97.1	0.02662	9.22	09/19/2022

SW-846 9036 (DISSOLVED)

Batch R318277 SampType: MS Units mg/L

SampID: 22081261-011BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		177	100.0	69.61	107.2	85	115	09/19/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 9036 (DISSOLVED)

Batch R318277		SampType: MSD		Units mg/L				RPD Limit: 10			Date Analyzed
SampID: 22081261-011BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Sulfate			50		176	100.0	69.61	106.3	176.8	0.47	09/19/2022

Batch R318277		SampType: MS		Units mg/L							
SampID: 22081261-043BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		165	100.0	61.38	104.1	85	115	09/19/2022	

Batch R318277		SampType: MSD		Units mg/L				RPD Limit: 10				Date Analyzed
SampID: 22081261-043BMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate			50		166	100.0	61.38	104.2	165.5	0.06	09/19/2022	

Batch R318339		SampType: MS		Units mg/L							
SampID: 22081261-001CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		167	100.0	67.94	98.8	85	115	09/21/2022	

Batch R318339		SampType: MSD		Units mg/L				RPD Limit: 10				Date Analyzed
SampID: 22081261-001CMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Sulfate			50		170	100.0	67.94	102.5	166.7	2.21	09/21/2022	

SW-846 9036 (TOTAL)

Batch R318277		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		< 10	6.140	0	0	-100	100	09/19/2022	

Batch R318277		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		22	20.00	0	107.6	90	110	09/19/2022	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 9036 (TOTAL)

Batch R318339		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		< 10	6.140	0	0	-100	100	09/21/2022	

Batch R318339		SampType: LCS		Units mg/L							
SampID: ICV/LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		19	20.00	0	96.7	90	110	09/21/2022	

Batch R318339		SampType: MS		Units mg/L							
SampID: 22081261-012AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		164	100.0	64.25	99.5	85	115	09/21/2022	

Batch R318339		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 22081261-012AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			50		152	100.0	64.25	87.4	163.8	7.67	09/21/2022

Batch R318339		SampType: MS		Units mg/L							
SampID: 22081261-029AMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate		50	S	204	100.0	88.16	116.1	85	115	09/21/2022	

Batch R318339		SampType: MSD		Units mg/L				RPD Limit: 10			
SampID: 22081261-029AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate			50		193	100.0	88.16	104.8	204.2	5.67	09/21/2022

Batch R318485		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		10		< 10	6.140	0	0	-100	100	09/23/2022	

Batch R318485		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	100.0	90	110	09/23/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 9066 (TOTAL)

Batch R318273 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	09/20/2022

Batch R318273 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		0.052	0.0500	0	103.9	90	110	09/20/2022

Batch R318273 SampType: MS Units µg/L

SampID: 22081261-003FMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Phenols		5		54	50.00	0	107.2	85	115	09/20/2022

Batch R318273 SampType: MSD Units µg/L

RPD Limit: 15

SampID: 22081261-003FMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Phenols		5		51	50.00	0	102.8	53.58	4.13	09/20/2022

SW-846 9214 (DISSOLVED)

Batch R318287 SampType: MS Units mg/L

SampID: 22081261-003BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		2.29	2.000	0.1350	107.6	75	125	09/20/2022

Batch R318287 SampType: MSD Units mg/L

RPD Limit: 15

SampID: 22081261-003BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		2.36	2.000	0.1350	111.1	2.286	3.06	09/20/2022

Batch R318287 SampType: MS Units mg/L

SampID: 22081261-011BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		2.34	2.000	0.2290	105.3	75	125	09/20/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 9214 (DISSOLVED)

Batch R318287		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed	
SampID: 22081261-011BMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Fluoride			0.10		2.39	2.000	0.2290	108.0	2.335	2.33	09/20/2022	

Batch R318287		SampType: MS		Units mg/L							
SampID: 22081261-042BMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		2.37	2.000	0.2010	108.4	75	125	09/20/2022	

Batch R318287		SampType: MSD		Units mg/L		RPD Limit: 15					Date Analyzed	
SampID: 22081261-042BMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Fluoride			0.10		2.40	2.000	0.2010	109.8	2.369	1.13	09/20/2022	

Batch R318287		SampType: MS		Units mg/L							
SampID: 22081261-046BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.27	2.000	0.1370	106.4	75	125	09/20/2022	

Batch R318287		SampType: MSD		Units mg/L			RPD Limit: 15				Date Analyzed
SampID: 22081261-046BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Fluoride			0.10		2.30	2.000	0.1370	108.2	2.266	1.49	09/20/2022

SW-846 9214 (TOTAL)

Batch R318287		SampType: MBLK		Units mg/L							
SampID: MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		< 0.10	0.0370	0	0	-100	100	09/20/2022	

Batch R318287		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		1.06	1.000	0	105.6	90	110	09/20/2022	



Quality Control Results

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Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 9214 (TOTAL)

Batch R318437		SampType: MBLK		Units mg/L							
SampID: MBLK											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		< 0.10	0.0370	0	0	-100	100	09/22/2022	

Batch R318437		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		0.93	1.000	0	93.3	90	110	09/22/2022	

Batch R318437		SampType: MS		Units mg/L							
SampID: 22081261-011AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.39	2.000	0.2270	108.0	75	125	09/22/2022	

Batch R318437		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22081261-011AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.36	2.000	0.2270	106.9	2.387	0.93	09/22/2022

Batch R318437		SampType: MS		Units mg/L							
SampID: 22081261-018AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.27	2.000	0.1590	105.7	75	125	09/22/2022	

Batch R318437		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22081261-018AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.22	2.000	0.1590	103.3	2.273	2.13	09/22/2022

Batch R318437		SampType: MS		Units mg/L							
SampID: 22081261-033AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.26	2.000	0.1720	104.5	75	125	09/22/2022	

Batch R318437		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22081261-033AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.20	2.000	0.1720	101.6	2.262	2.60	09/22/2022



Quality Control Results

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Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 9214 (TOTAL)

Batch R318437		SampType: MS		Units mg/L						
SampID: 22081261-041AMS										Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Fluoride		0.10		2.05	2.000	0	102.6	75	125	
										09/22/2022

Batch R318437		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22081261-041AMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride			0.10		2.04	2.000	0	101.8	2.051	0.73	09/22/2022

SW-846 9251 (DISSOLVED)

Batch R318286		SampType: MS		Units mg/L							
SampID: 22081261-001CMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		20		149	100.0	59.30	89.3	85	115	09/19/2022	

Batch R318286		SampType: MSD		Units mg/L		RPD Limit: 15					
SampID: 22081261-001CMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			20		150	100.0	59.30	91.2	148.6	1.24	09/19/2022

Batch R318286		SampType: MS		Units mg/L							
SampID: 22081261-016BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		20		191	100.0	95.98	94.9	85	115	09/19/2022	

Batch R318286		SampType: MSD		Units mg/L				RPD Limit: 15			
SampID: 22081261-016BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride			20		181	100.0	95.98	85.5	190.9	5.05	09/19/2022

Batch R318286		SampType: MS		Units mg/L							
SampID: 22081261-043BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		20		182	100.0	90.73	91.0	85	115	09/19/2022	



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Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 9251 (DISSOLVED)

Batch R318286		SampType: MSD		Units mg/L				RPD Limit: 15			Date Analyzed
SampID: 22081261-043BMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Chloride			20		178	100.0	90.73	87.6	181.7	1.87	09/19/2022

Batch R318345		SampType: MS		Units mg/L							
SampID: 22081261-011BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		40		277	200.0	90.36	93.1	85	115	09/21/2022	

Batch R318345		SampType: MSD		Units mg/L				RPD Limit: 15				Date Analyzed
SampID: 22081261-011BMSD												
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Chloride			40		276	200.0	90.36	93.0	276.6	0.06	09/21/2022	

SW-846 9251 (TOTAL)

Batch R318286		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		< 4	0.5000	0	0	-100	100	09/19/2022	

Batch R318286		SampType: LCS		Units mg/L							
SampID: ICB/LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		19	20.00	0	95.8	90	110	09/19/2022	

Batch R318345		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		< 4	0.5000	0	0	-100	100	09/21/2022	

Batch R318345		SampType: LCS		Units mg/L							
SampID: ICV/LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		19	20.00	0	97.1	90	110	09/21/2022	



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Client: Ramboll

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Client Project: Hennepin Q3 Groundwater

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SW-846 9251 (TOTAL)

Batch R318345 SampType: MS Units mg/L

SampID: 22081261-012AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		20		178	100.0	84.03	93.7	85	115	09/21/2022

Batch R318345 SampType: MSD Units mg/L

RPD Limit: 15

SampID: 22081261-012AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		20		173	100.0	84.03	89.4	177.7	2.43	09/21/2022

Batch R318345 SampType: MS Units mg/L

SampID: 22081261-029AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		20		175	100.0	82.28	92.7	85	115	09/21/2022

Batch R318345 SampType: MSD Units mg/L

RPD Limit: 15

SampID: 22081261-029AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		20		173	100.0	82.28	91.1	175.0	0.94	09/21/2022

Batch R318566 SampType: MBLK Units mg/L

SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		< 4	0.5000	0	0	-100	100	09/23/2022

Batch R318566 SampType: LCS Units mg/L

SampID: ICB/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		19	20.00	0	96.8	90	110	09/23/2022

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

Batch 197755 SampType: MBLK Units mg/L

SampID: MBLK-197755

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	09/20/2022
Magnesium		0.050		< 0.050	0.0055	0	0	-100	100	09/20/2022



Quality Control Results

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Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 197755 SampType: LCS Units mg/L

SampleID: LCS-197755

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.26	2.500	0	90.3	85	115	09/20/2022
Magnesium		0.050		2.31	2.500	0	92.4	85	115	09/20/2022

Batch 197755 SampType: MS Units mg/L

SampleID: 22081261-003DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	77.0	2.500	75.19	71.6	75	125	09/20/2022
Magnesium		0.050		29.7	2.500	27.57	83.4	75	125	09/20/2022

Batch 197755 SampType: MSD Units mg/L

SampleID: 22081261-003DMSD

RPD Limit: 20

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	76.8	2.500	75.19	63.6	76.98	0.26	09/20/2022
Magnesium		0.050		29.7	2.500	27.57	86.1	29.65	0.23	09/20/2022

Batch 197756 SampType: MBLK Units mg/L

SampleID: MBLK-197756

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	09/20/2022
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	09/20/2022

Batch 197756 SampType: LCS Units mg/L

SampleID: LCS-197756

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.20	2.500	0	88.2	85	115	09/20/2022
Magnesium		0.0500		2.26	2.500	0	90.4	85	115	09/20/2022

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

Batch 196679 SampType: MBLK Units mg/L

SampleID: MBLK-196679

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	09/16/2022
Magnesium		0.050		< 0.050	0.0055	0	0	-100	100	09/16/2022
Potassium		0.100		< 0.100	0.0400	0	0	-100	100	09/19/2022
Sodium		0.050		< 0.050	0.0180	0	0	-100	100	09/16/2022



Quality Control Results

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Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 196679 SampType: LCS Units mg/L

SampleID: LCS-196679

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.49	2.500	0	99.6	85	115	09/16/2022
Magnesium		0.050		2.50	2.500	0	99.9	85	115	09/16/2022
Potassium		0.100		2.54	2.500	0	101.8	85	115	09/16/2022
Sodium		0.050		2.27	2.500	0	90.9	85	115	09/16/2022

Batch 196679 SampType: MS Units mg/L

SampleID: 22081261-002DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	93.5	2.500	91.81	67.6	75	125	09/16/2022
Magnesium		0.050		27.8	2.500	25.11	106.4	75	125	09/16/2022
Potassium		0.100	E	12.3	2.500	9.712	103.9	75	125	09/16/2022
Sodium		0.050		51.9	2.500	49.70	88.4	75	125	09/16/2022

Batch 196679 SampType: MSD Units mg/L

RPD Limit: 20

SampleID: 22081261-002DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		94.3	2.500	91.81	98.8	93.50	0.83	09/16/2022
Magnesium		0.050		27.9	2.500	25.11	113.2	27.77	0.61	09/16/2022
Potassium		0.100	E	12.4	2.500	9.712	108.7	12.31	0.97	09/16/2022
Sodium		0.050		52.6	2.500	49.70	116.8	51.91	1.36	09/16/2022

Batch 196679 SampType: MS Units mg/L

SampleID: 22081261-036CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		126	2.500	124.4	80.0	75	125	09/16/2022
Magnesium		0.050		39.2	2.500	36.67	100.0	75	125	09/16/2022
Potassium		0.100		9.03	2.500	6.490	101.5	75	125	09/16/2022
Sodium		0.050		57.8	2.500	55.46	92.4	75	125	09/16/2022

Batch 196679 SampType: MSD Units mg/L

RPD Limit: 20

SampleID: 22081261-036CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	128	2.500	124.4	148.0	126.4	1.34	09/16/2022
Magnesium		0.050		39.7	2.500	36.67	122.0	39.17	1.39	09/16/2022
Potassium		0.100		9.12	2.500	6.490	105.3	9.027	1.05	09/16/2022
Sodium		0.050		58.5	2.500	55.46	122.0	57.77	1.27	09/16/2022

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)
Batch 196682 **SampType:** MBLK Units mg/L

SampID: MBLK-196682

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	09/19/2022
Magnesium		0.0500		< 0.0500	0.0055	0	0	-100	100	09/19/2022
Potassium		0.100		< 0.100	0.0400	0	0	-100	100	09/19/2022
Sodium		0.0500		< 0.0500	0.0180	0	0	-100	100	09/19/2022

Batch 196682 **SampType:** LCS Units mg/L

SampID: LCS-196682

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		2.59	2.500	0	103.7	85	115	09/19/2022
Magnesium		0.0500		2.60	2.500	0	104.0	85	115	09/19/2022
Potassium		0.100		2.52	2.500	0	101.0	85	115	09/19/2022
Sodium		0.0500		2.36	2.500	0	94.2	85	115	09/19/2022

Batch 196682 **SampType:** MS Units mg/L

SampID: 22081261-030DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		89.1	2.500	86.14	117.6	75	125	09/19/2022
Magnesium		0.050		29.6	2.500	26.91	106.4	75	125	09/19/2022
Potassium		0.100		8.13	2.500	5.493	105.6	75	125	09/19/2022
Sodium		0.050		56.2	2.500	53.31	117.2	75	125	09/19/2022

Batch 196682 **SampType:** MSD Units mg/L

RPD Limit: 20

SampID: 22081261-030DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		88.8	2.500	86.14	106.8	89.08	0.30	09/19/2022
Magnesium		0.050		29.4	2.500	26.91	100.0	29.57	0.54	09/19/2022
Potassium		0.100		8.11	2.500	5.493	104.8	8.134	0.27	09/19/2022
Sodium		0.050		56.2	2.500	53.31	114.8	56.24	0.11	09/19/2022

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 197755		SampType: MBLK		Units µg/L							Date Analyzed	
SampID: MBLK-197755												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Aluminum		25.0		< 25.0	12.50	0	0	-100	100	09/23/2022		
Antimony		1.0		< 1.0	0.4500	0	0	-100	100	09/21/2022		
Arsenic		1.0		< 1.0	0.3750	0	0	-100	100	09/20/2022		
Barium		1.0		< 1.0	0.7000	0	0	-100	100	09/20/2022		
Beryllium		1.0		< 1.0	0.2500	0	0	-100	100	09/20/2022		
Boron		25.0		< 25.0	9.250	0	0	-100	100	09/20/2022		
Cadmium		1.0		< 1.0	0.1500	0	0	-100	100	09/20/2022		
Chromium		1.5		< 1.5	0.7000	0	0	-100	100	09/23/2022		
Cobalt		1.0		< 1.0	0.1500	0	0	-100	100	09/20/2022		
Copper		1.0		< 1.0	0.6500	0	0	-100	100	09/20/2022		
Iron		25.0		< 25.0	11.50	0	0	-100	100	10/03/2022		
Lead		1.0		< 1.0	0.6000	0	0	-100	100	09/20/2022		
Manganese		2.0		< 2.0	0.7500	0	0	-100	100	09/23/2022		
Molybdenum		1.5		< 1.5	0.9000	0	0	-100	100	09/20/2022		
Nickel		1.0		< 1.0	0.6000	0	0	-100	100	09/20/2022		
Selenium		1.0		< 1.0	0.6000	0	0	-100	100	09/20/2022		
Silver		1.0		< 1.0	0.1000	0	0	-100	100	09/20/2022		
Thallium		2.0		< 2.0	0.9500	0	0	-100	100	09/20/2022		
Vanadium		5.0		< 5.0	5.000	0	0	-100	100	09/20/2022		
Zinc		15.0		< 15.0	5.900	0	0	-100	100	09/20/2022		

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 197755 **SampType:** LCS

Units µg/L

SampleID: LCS-197755

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		25.0		2380	2000	0	118.9	80	120	09/30/2022
Antimony		1.0		484	500.0	0	96.8	80	120	09/21/2022
Arsenic		1.0		494	500.0	0	98.8	80	120	09/20/2022
Barium		1.0		1970	2000	0	98.7	80	120	09/20/2022
Beryllium		1.0		42.8	50.00	0	85.6	80	120	09/20/2022
Boron		25.0		444	500.0	0	88.8	80	120	09/20/2022
Cadmium		1.0		45.7	50.00	0	91.4	80	120	09/20/2022
Chromium		1.5		196	200.0	0	98.0	80	120	09/23/2022
Cobalt		1.0		485	500.0	0	97.1	80	120	09/20/2022
Copper		1.0		248	250.0	0	99.2	80	120	09/20/2022
Iron		25.0		2210	2000	0	110.6	80	120	10/03/2022
Lead		1.0		477	500.0	0	95.5	80	120	09/20/2022
Manganese		2.0		537	500.0	0	107.4	80	120	09/23/2022
Molybdenum		1.5		468	500.0	0	93.5	80	120	09/20/2022
Nickel		1.0		486	500.0	0	97.3	80	120	09/20/2022
Selenium		1.0		445	500.0	0	88.9	80	120	09/20/2022
Silver		1.0		48.0	50.00	0	95.9	80	120	09/20/2022
Thallium		2.0		235	250.0	0	94.0	80	120	09/20/2022
Vanadium		5.0		472	500.0	0	94.3	80	120	09/20/2022
Zinc		15.0		447	500.0	0	89.5	80	120	09/20/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 197755 SampType: MS

Units µg/L

SampleID: 22081261-003DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aluminum		25.0		2040	2000	0	102.0	75	125	09/30/2022
Antimony		1.0		488	500.0	0	97.7	75	125	09/21/2022
Arsenic		1.0		510	500.0	1.008	101.8	75	125	09/21/2022
Barium		1.0		1920	2000	66.94	92.8	75	125	09/20/2022
Beryllium		1.0		48.5	50.00	0	97.0	75	125	09/20/2022
Boron		25.0		1160	500.0	600.2	112.1	75	125	09/23/2022
Cadmium		1.0		47.1	50.00	0.1794	93.9	75	125	09/21/2022
Chromium		1.5		187	200.0	0	93.7	75	125	09/23/2022
Cobalt		1.0		484	500.0	0.2203	96.7	75	125	09/21/2022
Copper		1.0		242	250.0	0.7387	96.5	75	125	09/21/2022
Iron		25.0		2020	2000	0	100.8	75	125	10/03/2022
Lead		1.0		466	500.0	0	93.1	75	125	09/20/2022
Manganese		2.0		607	500.0	94.42	102.6	75	125	09/23/2022
Molybdenum		1.5		514	500.0	18.85	99.0	75	125	09/21/2022
Nickel		1.0		454	500.0	2.632	90.3	75	125	09/20/2022
Selenium		1.0		439	500.0	3.462	87.1	75	125	09/20/2022
Silver		1.0		45.1	50.00	0	90.1	75	125	09/20/2022
Thallium		2.0		233	250.0	0	93.2	75	125	09/20/2022
Zinc		15.0		457	500.0	0	91.4	75	125	09/21/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 197755		SampType: MSD		Units µg/L			RPD Limit: 20			
SampleID: 22081261-003DMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Aluminum		25.0		2270	2000	0	113.4	2039	10.61	09/30/2022
Antimony		1.0		469	500.0	0	93.8	488.5	4.04	09/21/2022
Arsenic		1.0		476	500.0	1.008	95.0	509.9	6.85	09/21/2022
Barium		1.0		2340	2000	66.94	113.5	1924	19.37	09/20/2022
Beryllium		1.0		58.6	50.00	0	117.3	48.49	18.95	09/20/2022
Boron		25.0		1100	500.0	600.2	100.0	1161	5.38	09/23/2022
Cadmium		1.0		44.9	50.00	0.1794	89.5	47.11	4.69	09/21/2022
Chromium		1.5		183	200.0	0	91.3	187.4	2.56	09/23/2022
Cobalt		1.0		447	500.0	0.2203	89.3	483.5	7.94	09/21/2022
Copper		1.0		226	250.0	0.7387	90.1	241.9	6.83	09/21/2022
Iron		25.0		1960	2000	0	97.8	2015	2.96	10/03/2022
Lead		1.0		565	500.0	0	113.0	465.7	19.30	09/20/2022
Manganese		2.0		561	500.0	94.42	93.3	607.4	7.98	09/23/2022
Molybdenum		1.5		477	500.0	18.85	91.6	513.7	7.43	09/21/2022
Nickel		1.0		553	500.0	2.632	110.1	454.0	19.71	09/20/2022
Selenium		1.0		533	500.0	3.462	105.8	439.2	19.23	09/20/2022
Silver		1.0		53.1	50.00	0	106.2	45.06	16.42	09/20/2022
Thallium		2.0		270	250.0	0	107.9	233.0	14.63	09/20/2022
Zinc		15.0		432	500.0	0	86.5	457.1	5.55	09/21/2022

Batch 197755		SampType: MS		Units µg/L							
SampleID: 22081261-017DMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Boron		25.0		2120	500.0	1716	81.6	75	125	09/23/2022	

Batch 197755		SampType: MSD		Units µg/L				RPD Limit: 20			
SampleID: 22081261-017DMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron			25.0		2340	500.0	1716	124.9	2124	9.69	09/23/2022

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 197756		SampType: MBLK		Units µg/L							Date Analyzed	
SampID: MBLK-197756												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit			
Aluminum		25.0		< 25.0	12.50	0	0	-100	100	09/23/2022		
Aluminum		25.0	JS	15	12.50	0	123.1	-100	100	09/28/2022		
Antimony		1.0		< 1.0	0.4500	0	0	-100	100	09/21/2022		
Antimony		1.0		< 1.0	0.4500	0	0	-100	100	09/23/2022		
Arsenic		1.0		< 1.0	0.3750	0	0	-100	100	09/21/2022		
Barium		1.0		< 1.0	0.7000	0	0	-100	100	09/21/2022		
Beryllium		1.0		< 1.0	0.2500	0	0	-100	100	09/23/2022		
Beryllium		1.0		< 1.0	0.2500	0	0	-100	100	09/21/2022		
Boron		25.0		< 25.0	9.250	0	0	-100	100	09/23/2022		
Cadmium		1.0		< 1.0	0.1340	0	0	-100	100	09/21/2022		
Chromium		1.5		< 1.5	0.7000	0	0	-100	100	09/23/2022		
Cobalt		1.0		< 1.0	0.1150	0	0	-100	100	09/21/2022		
Copper		1.0		< 1.0	0.4500	0	0	-100	100	09/21/2022		
Iron		25.0		< 25.0	11.50	0	0	-100	100	10/03/2022		
Lead		1.0		< 1.0	0.6000	0	0	-100	100	09/21/2022		
Manganese		2.0	JS	1.2	0.7500	0	164.0	-100	100	09/21/2022		
Molybdenum		1.5		< 1.5	0.6000	0	0	-100	100	09/21/2022		
Nickel		1.0		< 1.0	0.4300	0	0	-100	100	09/21/2022		
Selenium		1.0		< 1.0	0.6000	0	0	-100	100	09/21/2022		
Silver		1.0		< 1.0	0.1000	0	0	-100	100	09/21/2022		
Thallium		2.0		< 2.0	0.9500	0	0	-100	100	09/21/2022		
Vanadium		5.0		< 5.0	5.000	0	0	-100	100	09/21/2022		
Zinc		15.0		< 15.0	5.900	0	0	-100	100	09/21/2022		



Quality Control Results

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Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 197756		SampType: LCS		Units µg/L							
SampID: LCS-197756											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Aluminum		25.0	B	2080	2000	0	104.1	80	120	09/28/2022	
Antimony		1.0		499	500.0	0	99.7	80	120	09/21/2022	
Antimony		1.0		502	500.0	0	100.4	80	120	09/23/2022	
Arsenic		1.0		472	500.0	0	94.4	80	120	09/21/2022	
Barium		1.0		1860	2000	0	93.0	80	120	09/21/2022	
Beryllium		1.0		48.4	50.00	0	96.8	80	120	09/23/2022	
Beryllium		1.0		47.4	50.00	0	94.8	80	120	09/23/2022	
Boron		25.0		516	500.0	0	103.2	80	120	09/23/2022	
Cadmium		1.0		44.0	50.00	0	88.0	80	120	09/21/2022	
Chromium		1.5		189	200.0	0	94.4	80	120	09/23/2022	
Cobalt		1.0		458	500.0	0	91.6	80	120	09/21/2022	
Copper		1.0		236	250.0	0	94.3	80	120	09/21/2022	
Iron		25.0		1850	2000	0	92.3	80	120	10/04/2022	
Lead		1.0		469	500.0	0	93.8	80	120	09/21/2022	
Manganese		2.0		493	500.0	0	98.6	80	120	09/23/2022	
Molybdenum		1.5		443	500.0	0	88.5	80	120	09/21/2022	
Nickel		1.0		463	500.0	0	92.6	80	120	09/21/2022	
Selenium		1.0		438	500.0	0	87.6	80	120	09/21/2022	
Silver		1.0		45.2	50.00	0	90.4	80	120	09/21/2022	
Thallium		2.0		226	250.0	0	90.3	80	120	09/21/2022	
Vanadium		5.0		456	500.0	0	91.2	80	120	09/21/2022	
Zinc		15.0		437	500.0	0	87.4	80	120	09/21/2022	

Batch 197756		SampType: MS		Units µg/L							
SampID: 22081261-034DMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Boron		25.0	S	968	500.0	665.2	60.6	75	125	09/28/2022	

Batch 197756		SampType: MSD		Units µg/L				RPD Limit: 20			
SampID: 22081261-034DMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron			25.0	S	1000	500.0	665.2	67.5	968.1	3.51	09/28/2022

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)
Batch 196679 **SampType: MBLK** Units $\mu\text{g/L}$

SampleID: MBLK-196679

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	09/19/2022
Arsenic		1.0		< 1.0	0.3750	0	0	-100	100	09/19/2022
Barium		1.0		< 1.0	0.7000	0	0	-100	100	09/19/2022
Beryllium		1.0		< 1.0	0.2500	0	0	-100	100	09/19/2022
Boron		25.0		< 25.0	12.50	0	0	-100	100	09/20/2022
Cadmium		1.0		< 1.0	0.1340	0	0	-100	100	09/19/2022
Chromium		1.5		< 1.5	0.7000	0	0	-100	100	09/22/2022
Cobalt		1.0		< 1.0	0.1150	0	0	-100	100	09/20/2022
Lead		1.0		< 1.0	0.6000	0	0	-100	100	09/19/2022
Lithium	*	3.0		< 3.0	1.450	0	0	-100	100	09/19/2022
Molybdenum		1.5		< 1.5	0.6000	0	0	-100	100	09/19/2022
Selenium		1.0		< 1.0	0.6000	0	0	-100	100	09/19/2022
Thallium		2.0		< 2.0	0.9500	0	0	-100	100	09/19/2022

Batch 196679 **SampType: LCS** Units $\mu\text{g/L}$

SampleID: LCS-196679

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		552	500.0	0	110.5	80	120	09/19/2022
Arsenic		1.0		559	500.0	0	111.9	80	120	09/19/2022
Barium		1.0		2210	2000	0	110.6	80	120	09/19/2022
Beryllium		1.0		53.0	50.00	0	106.0	80	120	09/19/2022
Boron		25.0		454	500.0	0	90.7	80	120	09/20/2022
Cadmium		1.0		51.5	50.00	0	103.1	80	120	09/19/2022
Chromium		1.5		213	200.0	0	106.5	80	120	09/22/2022
Cobalt		1.0		449	500.0	0	89.8	80	120	09/20/2022
Lead		1.0		511	500.0	0	102.3	80	120	09/19/2022
Molybdenum		1.5		523	500.0	0	104.5	80	120	09/19/2022
Selenium		1.0		514	500.0	0	102.8	80	120	09/19/2022
Thallium		2.0		270	250.0	0	108.2	80	120	09/19/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 196679		SampType: MS		Units µg/L						
SampID: 22081261-002DMS										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		525	500.0	0	105.1	75	125	09/19/2022
Barium		1.0		2120	2000	59.20	103.0	75	125	09/19/2022
Beryllium		1.0		49.4	50.00	0	98.7	75	125	09/19/2022
Boron		25.0		1210	500.0	766.1	88.3	75	125	09/20/2022
Cadmium		1.0		48.5	50.00	0	96.9	75	125	09/19/2022
Chromium		1.5		226	200.0	10.49	107.6	75	125	09/22/2022
Cobalt		1.0		454	500.0	0.2100	90.8	75	125	09/20/2022
Lead		1.0		498	500.0	0	99.5	75	125	09/19/2022
Lithium	*	3.0		488	500.0	19.33	93.7	75	125	09/20/2022
Molybdenum		1.5		623	500.0	107.7	103.0	75	125	09/19/2022
Selenium		1.0		485	500.0	3.326	96.4	75	125	09/19/2022
Thallium		2.0		251	250.0	0	100.2	75	125	09/19/2022

Batch 196679		SampType: MSD		Units µg/L				RPD Limit: 20		
SampID: 22081261-002DMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		1.0		516	500.0	0	103.3	525.5	1.74	09/19/2022
Barium		1.0		2070	2000	59.20	100.3	2120	2.57	09/19/2022
Beryllium		1.0		48.4	50.00	0	96.8	49.37	1.97	09/19/2022
Boron		25.0		1270	500.0	766.1	100.7	1208	4.99	09/20/2022
Cadmium		1.0		48.5	50.00	0	97.1	48.46	0.17	09/19/2022
Chromium		1.5		240	200.0	10.49	114.5	225.7	5.96	09/22/2022
Cobalt		1.0		480	500.0	0.2100	96.0	454.0	5.63	09/20/2022
Lead		1.0		469	500.0	0	93.8	497.7	5.94	09/19/2022
Lithium	*	3.0		512	500.0	19.33	98.6	487.8	4.93	09/20/2022
Molybdenum		1.5		595	500.0	107.7	97.4	623.0	4.60	09/19/2022
Selenium		1.0		472	500.0	3.326	93.7	485.1	2.74	09/19/2022
Thallium		2.0		243	250.0	0	97.2	250.6	3.11	09/19/2022

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)
Batch 196679 **SampType:** MS Units µg/L

SampID: 22081261-036CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0	S	648	500.0	0	129.5	75	125	09/20/2022
Arsenic		1.0		497	500.0	20.58	95.3	75	125	09/20/2022
Barium		1.0		1990	2000	91.71	94.7	75	125	09/20/2022
Beryllium		1.0		60.3	50.00	0	120.6	75	125	09/20/2022
Cadmium		1.0		60.1	50.00	0	120.2	75	125	09/20/2022
Chromium		1.5		199	200.0	0	99.3	75	125	09/22/2022
Cobalt		1.0		436	500.0	0.4932	87.1	75	125	09/20/2022
Lead		1.0		590	500.0	0.6460	117.9	75	125	09/20/2022
Lithium	*	3.0		478	500.0	21.34	91.4	75	125	09/20/2022
Molybdenum		1.5		612	500.0	6.196	121.1	75	125	09/20/2022
Selenium		1.0		566	500.0	0	113.1	75	125	09/20/2022
Thallium		2.0		293	250.0	0	117.2	75	125	09/20/2022

Batch 196679 **SampType:** MSD Units µg/L

RPD Limit: 20

SampID: 22081261-036CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		1.0	S	635	500.0	0	127.1	647.7	1.90	09/20/2022
Arsenic		1.0		498	500.0	20.58	95.6	497.0	0.29	09/20/2022
Barium		1.0		1910	2000	91.71	91.1	1986	3.67	09/20/2022
Beryllium		1.0		59.4	50.00	0	118.7	60.29	1.55	09/20/2022
Cadmium		1.0		58.9	50.00	0	117.9	60.09	1.94	09/20/2022
Chromium		1.5		235	200.0	0	117.3	198.7	16.62	09/22/2022
Cobalt		1.0		432	500.0	0.4932	86.3	436.2	0.95	09/20/2022
Lead		1.0		591	500.0	0.6460	118.0	590.2	0.07	09/20/2022
Lithium	*	3.0		459	500.0	21.34	87.6	478.3	4.02	09/20/2022
Molybdenum		1.5		613	500.0	6.196	121.3	611.7	0.14	09/20/2022
Selenium		1.0		555	500.0	0	111.0	565.7	1.88	09/20/2022
Thallium		2.0		297	250.0	0	118.9	293.1	1.38	09/20/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 196682 SampType: MBLK Units µg/L

SampID: MBLK-196682

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	09/19/2022
Arsenic		1.0		< 1.0	0.3750	0	0	-100	100	09/19/2022
Barium		1.0		< 1.0	0.7000	0	0	-100	100	09/19/2022
Beryllium		1.0		< 1.0	0.2500	0	0	-100	100	09/19/2022
Boron		25.0		< 25.0	10.00	0	0	-100	100	09/20/2022
Cadmium		1.0		< 1.0	0.1340	0	0	-100	100	09/19/2022
Chromium		1.5		< 1.5	0.7000	0	0	-100	100	09/22/2022
Cobalt		1.0		< 1.0	0.1150	0	0	-100	100	09/20/2022
Lead		1.0		< 1.0	0.6000	0	0	-100	100	09/19/2022
Lithium	*	3.0		< 3.0	1.450	0	0	-100	100	09/19/2022
Molybdenum		1.5		< 1.5	0.6000	0	0	-100	100	09/19/2022
Selenium		1.0		< 1.0	0.6000	0	0	-100	100	09/19/2022
Thallium		2.0		< 2.0	0.9500	0	0	-100	100	09/19/2022

Batch 196682 SampType: LCS Units µg/L

SampID: LCS-196682

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		531	500.0	0	106.2	80	120	09/19/2022
Arsenic		1.0		511	500.0	0	102.2	80	120	09/19/2022
Barium		1.0		2080	2000	0	103.9	80	120	09/19/2022
Beryllium		1.0		48.9	50.00	0	97.7	80	120	09/19/2022
Boron		25.0		538	500.0	0	107.7	80	120	09/20/2022
Cadmium		1.0		48.8	50.00	0	97.6	80	120	09/19/2022
Chromium		1.5		222	200.0	0	111.1	80	120	09/22/2022
Cobalt		1.0		526	500.0	0	105.2	80	120	09/20/2022
Lead		1.0		479	500.0	0	95.8	80	120	09/19/2022
Lithium	*	3.0		551	500.0	0	110.3	80	120	09/20/2022
Lithium	*	3.0		523	500.0	0	104.6	80	120	09/19/2022
Selenium		1.0		469	500.0	0	93.8	80	120	09/19/2022
Thallium		2.0		247	250.0	0	98.8	80	120	09/19/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 196682 SampType: MS Units µg/L

SampleID: 22081261-030DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		485	500.0	0	97.0	75	125	09/20/2022
Arsenic		1.0		489	500.0	0.4780	97.7	75	125	09/20/2022
Barium		1.0		1980	2000	62.91	95.6	75	125	09/20/2022
Beryllium		1.0		47.5	50.00	0	94.9	75	125	09/20/2022
Boron		25.0		756	500.0	256.3	100.0	75	125	09/20/2022
Cadmium		1.0		45.4	50.00	0.6360	89.6	75	125	09/20/2022
Chromium		1.5		203	200.0	1.710	100.8	75	125	09/23/2022
Cobalt		1.0		481	500.0	1.013	96.0	75	125	09/20/2022
Lead		1.0		460	500.0	1.053	91.9	75	125	09/20/2022
Lithium	*	3.0		531	500.0	10.20	104.2	75	125	09/20/2022
Molybdenum		1.5		499	500.0	45.30	90.7	75	125	09/20/2022
Selenium		1.0		443	500.0	0	88.6	75	125	09/20/2022
Thallium		2.0		240	250.0	0	95.8	75	125	09/20/2022

Batch 196682 SampType: MSD Units µg/L

RPD Limit: 20

SampleID: 22081261-030DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		1.0		498	500.0	0	99.5	484.8	2.59	09/20/2022
Arsenic		1.0		491	500.0	0.4780	98.0	489.1	0.28	09/20/2022
Barium		1.0		2000	2000	62.91	96.7	1976	1.10	09/20/2022
Beryllium		1.0		47.4	50.00	0	94.8	47.47	0.10	09/20/2022
Boron		25.0		741	500.0	256.3	97.0	756.4	2.03	09/20/2022
Cadmium		1.0		47.3	50.00	0.6360	93.3	45.43	4.00	09/20/2022
Chromium		1.5		248	200.0	1.710	123.3	203.4	19.87	09/23/2022
Cobalt		1.0		474	500.0	1.013	94.5	481.0	1.56	09/20/2022
Lead		1.0		467	500.0	1.053	93.1	460.5	1.30	09/20/2022
Lithium	*	3.0		519	500.0	10.20	101.7	531.2	2.32	09/20/2022
Molybdenum		1.5		528	500.0	45.30	96.5	498.9	5.61	09/20/2022
Selenium		1.0		443	500.0	0	88.6	443.1	0.06	09/20/2022
Thallium		2.0		241	250.0	0	96.6	239.6	0.76	09/20/2022

Batch 197894 SampType: MBLK Units µg/L

SampleID: MBLK-197894

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	09/22/2022



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 197894 SampType: LCS Units µg/L

SampID: LCS-197894

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		532	500.0	0	106.4	80	120	09/26/2022

Batch 197894 SampType: LCSD Units µg/L

SampID: LCSD-197894

RPD Limit: 20

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron		25.0		533	500.0	0	106.7	531.8	0.32	09/26/2022

Batch 198935 SampType: MBLK Units µg/L

SampID: MBLK-198935

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	10/20/2022
Arsenic		1.0		< 1.0	0.3750	0	0	-100	100	10/20/2022
Barium		1.0		< 1.0	0.7000	0	0	-100	100	10/20/2022
Beryllium		1.0		< 1.0	0.2500	0	0	-100	100	10/21/2022
Cadmium		1.0		< 1.0	0.1340	0	0	-100	100	10/20/2022
Chromium		1.5		< 1.5	0.7000	0	0	-100	100	10/20/2022
Cobalt		1.0		< 1.0	0.1150	0	0	-100	100	10/20/2022
Lead		1.0		< 1.0	0.6000	0	0	-100	100	10/20/2022
Molybdenum		1.5		< 1.5	0.6000	0	0	-100	100	10/21/2022
Selenium		1.0		< 1.0	0.6000	0	0	-100	100	10/20/2022
Thallium		2.0		< 2.0	0.9500	0	0	-100	100	10/20/2022

Batch 198935 SampType: LCS Units µg/L

SampID: LCS-198935

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		508	500.0	0	101.6	80	120	10/20/2022
Arsenic		1.0		484	500.0	0	96.8	80	120	10/20/2022
Barium		1.0		2020	2000	0	101.0	80	120	10/20/2022
Cadmium		1.0		48.8	50.00	0	97.5	80	120	10/20/2022
Chromium		1.5		189	200.0	0	94.6	80	120	10/20/2022
Cobalt		1.0		475	500.0	0	94.9	80	120	10/20/2022
Lead		1.0		464	500.0	0	92.8	80	120	10/20/2022
Molybdenum		1.5		521	500.0	0	104.2	80	120	10/21/2022
Selenium		1.0		453	500.0	0	90.6	80	120	10/20/2022
Thallium		2.0		241	250.0	0	96.5	80	120	10/20/2022

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

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

Batch 198935		SampType: LCSD		Units µg/L				RPD Limit: 20		
SampID: LCSD-198935										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		1.0		485	500.0	0	97.1	508.2	4.60	10/20/2022
Arsenic		1.0		483	500.0	0	96.7	484.0	0.13	10/20/2022
Barium		1.0		1950	2000	0	97.7	2019	3.32	10/20/2022
Cadmium		1.0		47.3	50.00	0	94.6	48.77	3.02	10/20/2022
Chromium		1.5		196	200.0	0	98.0	189.2	3.56	10/20/2022
Cobalt		1.0		474	500.0	0	94.7	474.6	0.17	10/20/2022
Lead		1.0		471	500.0	0	94.1	463.8	1.45	10/20/2022
Molybdenum		1.5		511	500.0	0	102.3	521.0	1.86	10/21/2022
Selenium		1.0		458	500.0	0	91.7	453.0	1.19	10/20/2022
Thallium		2.0		243	250.0	0	97.0	241.2	0.56	10/20/2022

SW-846 7470A (DISSOLVED)

Batch 197749		SampType: MS		Units µg/L							
SampID: 22081261-001DMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.20		5.63	5.000	0	112.5	75	125	09/20/2022	

Batch 197749		SampType: MSD		Units µg/L				RPD Limit: 15			
SampID: 22081261-001DMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.20		5.28	5.000	0	105.7	5.626	6.28	09/20/2022

Batch 197749		SampType: MS		Units µg/L							
SampID: 22081261-014EMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.20		3.77	5.000	0	75.3	75	125	09/20/2022	

Batch 197749		SampType: MSD		Units µg/L				RPD Limit: 15			
SampID: 22081261-014EMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.20		4.01	5.000	0	80.1	3.766	6.19	09/20/2022

Batch 197750		SampType: MS		Units µg/L							
SampID: 22081261-030EMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.20		5.81	5.000	0	116.1	75	125	09/20/2022	

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 7470A (DISSOLVED)

Batch 197750		SampType: MSD		Units µg/L				RPD Limit: 15			
SampID: 22081261-030EMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.20		5.52	5.000	0	110.5	5.807	4.99	09/20/2022

Batch 197750		SampType: MS		Units µg/L							
SampID: 22081261-043CMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.20		5.83	5.000	0	116.5	75	125	09/20/2022	

Batch 197750		SampType: MSD		Units µg/L				RPD Limit: 15			
SampID: 22081261-043CMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.20		5.63	5.000	0	112.7	5.827	3.38	09/20/2022

Batch 197768		SampType: MS		Units µg/L							
SampID: 22081261-045CMS											Date Analyzed
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Mercury		0.20		5.47	5.000	0	109.4	75	125	09/20/2022	

Batch 197768		SampType: MSD		Units µg/L				RPD Limit: 15			
SampID: 22081261-045CMSD											
Analyses		Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury			0.20		5.51	5.000	0	110.1	5.472	0.62	09/20/2022

SW-846 7470A (TOTAL)

Batch 197749		SampType: MBLK		Units µg/L							
SampID: MBLK-197749											
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	09/20/2022	

Batch 197749		SampType: LCS		Units µg/L							
SampID: LCS-197749											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.20		5.12	5.000	0	102.3	85	115	09/20/2022	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

SW-846 7470A (TOTAL)

Batch 197750 SampType: MBLK Units µg/L

SamplD: MBLK-197750

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	09/20/2022

Batch 197750 SampType: LCS Units µg/L

SamplD: LCS-197750

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		5.44	5.000	0	108.8	85	115	09/20/2022

Batch 197768 SampType: MBLK Units µg/L

SamplD: MBLK-197768

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	09/20/2022

Batch 197768 SampType: LCS Units µg/L

SamplD: LCS-197768

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		5.38	5.000	0	107.5	85	115	09/20/2022



Receiving Check List

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22081261

Client Project: Hennepin Q3 Groundwater

Report Date: 31-Oct-22

Carrier: Joseph Riley

Received By: TWM

Completed by:

Reviewed by:

On:

On:

15-Sep-22

15-Sep-22

Timothy W. Mathis

Elizabeth A. Hurley

Pages to follow:

Chain of custody

3

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 4.4

Type of thermal preservation?

None ☐

Ice ☒

Blue Ice ☐

Dry Ice ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Reported field parameters measured:

Field ☒

Lab ☐

NA ☐

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.

Additional sodium hydroxide (81662) was needed in 02, 05R, 07, 08, 08D, 10, 12, 16, 17, 40S, 45S, 08 Duplicate, 04R, and 06 upon arrival at the laboratory. - PWR/TMathis - 9/15/2022 4:14:49 PM

pH strip #82999/79929. - PWR/TMathis - 9/15/2022 4:17:47 PM

Samples were received with insufficient amount of time to meet hold time requirements for Nitrate analysis. Client was notified via work order summary. - ehurley - 9/15/2022 6:03:14 PM

22081261

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

Page: 1 of 3

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	REGULATORY AGENCY		
			Address: see Section A	NPDES	GROUND WATER	DRINKING WATER
Email To: Brian.Voelker@VistraCorp.com		Purchase Order No.:	Quote Reference:	UST	RCRA	OTHER
Phone: (217) 753-8911	Fax:	Project Name:	Project Manager:	Site Location		
Requested Due Date/TAT: standard		Project Number: 2285	Profile #:	STATE:	IL	

[illegible]

PH ✓ 29929 / 82949

Add NaOH (81662) to

002, 05R, 07, 08, 08D, 10, 12, 16, 17, 40S, 45S, 08D, 04R, 006

① HEADSPACE TM PR

DA ORK 171

CHAIN-OF-CUSTODY / Analytical Request Document

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

22081261

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Page: 2 of 3	
Company: Vistra Corp		Report To: Brian Voelker		Attention: Jason Stuckey			
Address: 13498 E. 900th St		Copy To: Jason Stuckey		Company Name: Vistra Corp			
Email To: Brian.Voelker@VistraCorp.com		Purchase Order No.:		Address: see Section A		REGULATORY AGENCY	
Phone: (217) 753-8911 Fax:		Project Name:		Quote Reference:		NPDES GROUND WATER DRINKING WATER	
Requested Due Date/TAT: standard		Project Number: 2285		Project Manager:		UST RCRA OTHER	
				Profile #:		Site Location STATE: IL	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	MATRIX TYPE (see valid codes to left)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test	Requested Analysis Filtered (Y/N)										Residual Chlorine (Y/N)	Project No./ Lab I.D.
				DATE	TIME			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	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	Quarterly Group 1	Quarterly Group 2			
1	22D			09/13/22	1131	4	2																		22081261-017					
2	23			09/13/22	1027	4	2																		018					
3	25			09/13/22	1401	0																			019					
4	26			09/13/22	1402	0																			020					
5	27			09/13/22	1253	4	2																		021					
6	30			09/13/22	1228	0																			022					
7	31			09/13/22	1229	0																			023					
8	32			09/13/22	1337	4	2																		024					
9	33			09/13/22	1842	0																			025					
10	34			09/13/22	1842	4	2																		026					
11	35			09/13/22	0852	4	2																		027					
12	36			09/13/22	1215	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	028					
13	40S			09/14/22	1451	7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	029					
14	45S			09/14/22	1234	9	3	2	2	3	1														030					
15	46			09/14/22	1044	2	1																		031					
16	47			09/14/22	1142	2	1																		032					

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS																	
HEN-Q3-2022		[Signature]		09/13/22		005		[Signature]		9-13-22		1005																			
<table border="1"> <tr> <td colspan="2">SAMPLER NAME AND SIGNATURE</td> <td rowspan="3">Temp in °C</td> <td rowspan="3">Received on Ice (Y/N)</td> <td rowspan="3">Custody Sealed Cooler (Y/N)</td> <td rowspan="3">Samples Intact (Y/N)</td> </tr> <tr> <td colspan="2">PRINT Name of SAMPLER: Joe E. [Signature]</td> </tr> <tr> <td colspan="2">SIGNATURE of SAMPLER: [Signature]</td> </tr> <tr> <td colspan="2">DATE Signed (MM/DD/YY): 09/13/22</td> <td colspan="4"></td> </tr> </table>																SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	PRINT Name of SAMPLER: Joe E. [Signature]		SIGNATURE of SAMPLER: [Signature]		DATE Signed (MM/DD/YY): 09/13/22					
SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)																										
PRINT Name of SAMPLER: Joe E. [Signature]																															
SIGNATURE of SAMPLER: [Signature]																															
DATE Signed (MM/DD/YY): 09/13/22																															

CHAIN-OF-CUSTODY / Analytical Request Document

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

22081261

Section A
Required Client Information:

Company: Vistra Corp

Address: 13498 E. 900th St

Email To: Brian.Voelker@VistraCorp.com

Phone: (217) 753-8911 Fax: _____

Requested Due Date/TAT: standard

Section B
Required Project Information:

Report To: Brian Voelker

Copy To: Jason Stuckey

Purchase Order No.: _____

Project Name: _____

Project Number: 2285

Section C
Invoice Information:

Attention: Jason Stuckey

Company Name: Vistra Corp

Address: see Section A

Quote Reference: _____

Project Manager: _____

Profile #: _____

Page: 3 of 3

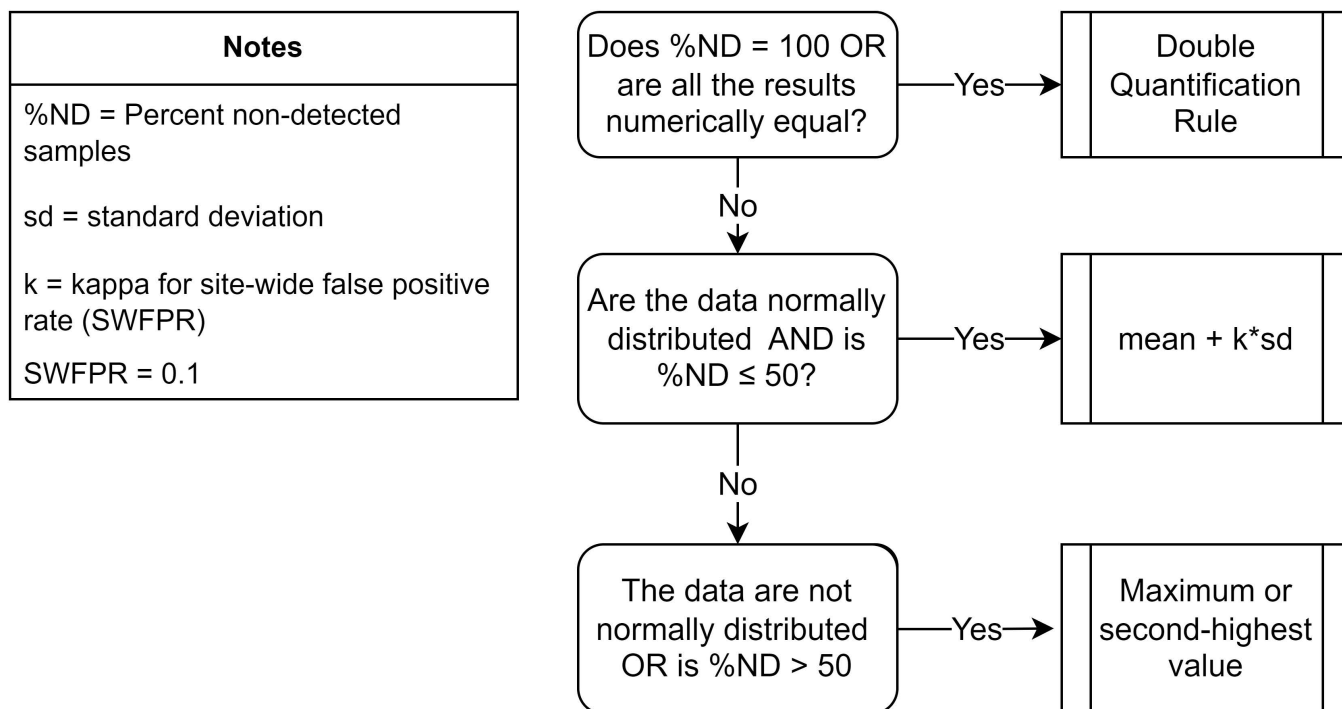
Section D Required Client Information		Valid Matrix Codes MATRIX CODE		COLLECTED		PRESERVATIVES		Requested Analysis Filtered (Y/N)												Project No. / Lab I.D.										
ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX	CODE	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₈	Methanol	Other	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	Quarterly Group 1	Quarterly Group 2	Residual Chlorine (Y/N)	Project No. / Lab I.D.	
1	48			08/19/22	1530		1									✓													22081261-033	
2	49			08/19/22	1040		4									✓													034	
3	50			08/19/22	1203		4									✓													035	
4	51			08/19/22	0956		4									✓													036	
5	55			08/19/22	1511		0									✓													037	
6	SG02			08/19/22	1757		0									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		038	
7	XSG01			08/19/22	1757		0									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		039	
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10	04R			08/19/22	1547		4	2								✓													042	
11	06			08/19/22	1253		4	2								✓													043	
12	15			08/19/22	1006		4	2								✓													044	
13	19D			08/19/22	1533		4	2								✓													045	
14	19S			08/19/22	1514		4	2								✓													046	
15																														
16																														

ADDITIONAL COMMENTS	RECEIVED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
HEN-Q3-2022	<i>[Signature]</i>	08/19/22	1005	<i>[Signature]</i>	08/19/22	1005	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Duplicate and Field Blank per project history. EAH 8/18/22										

SAMPLER NAME AND SIGNATURE		DATE Signed (MM/DD/YY)
PRINT Name of SAMPLER: <i>JD Rieger</i>	SIGNATURE of SAMPLER: <i>[Signature]</i>	08/19/22

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

ALTERNATE SOURCE DEMONSTRATIONS

Prepared for
Dynegy Midwest Generation, LLC

Date
April 13, 2022

Project No.
1940102203-008

**40 C.F.R. § 257.94(e)(2): ALTERNATE
SOURCE DEMONSTRATION
COAL COMBUSTION WASTE LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS
CCR UNIT 801**

CERTIFICATIONS

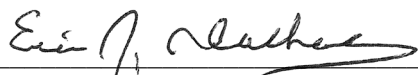
I, Brian G. Hennings, a professional geologist in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used other than for its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.



Brian G. Hennings
Professional Geologist
196-001482
Illinois
Ramboll Americas Engineering Solutions, Inc.
Date: April 13, 2022



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: April 13, 2022



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FIGURES (ATTACHED)

Figure 1 Monitoring Well Location Map
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APPENDICES

Appendix A Groundwater 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
D9	Detection Monitoring Round 9
HDPE	high-density polyethylene
Hennepin East	includes Landfill, AP2, AP4, and East Ash Pond
HPP	Hennepin Power Plant
IEPA	Illinois Environmental Protection Agency
Landfill	Coal Combustion Waste Landfill
LOE	line(s) of evidence
mg/L	milligrams per liter
NAVD88	North American Vertical Datum of 1988
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), or that the SSI(s) resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality (Alternate Source Demonstration [ASD]).

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) Coal Combustion Waste Landfill (Landfill), located near Hennepin, Illinois.

The most recent Detection Monitoring sampling event (Detection Monitoring Round 9 [D9]) was completed on September 10, 2021, and analytical data were received on October 15, 2021. 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 13, 2022, within 90 days of receipt of the analytical data. The statistical determination identified the following SSIs at compliance monitoring wells:

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

Pursuant to 40 C.F.R. § 257.94(e)(2), the lines of evidence (LOE) described in Section 3 demonstrate that sources other than the Landfill were the cause of the SSIs listed above. This ASD was completed by April 13, 2022, 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 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 other CCR unit monitoring wells located upgradient of the Landfill (12, 13, 16, and 17) which are not part of the Landfill monitoring network but are used to support the LOE 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], 2017a). Statistical evaluation of analytical data is performed in accordance with the Statistical Analysis Plan (NRT/OBG, 2017b).

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 site features shown on **Figure 1** includes AP2/AP4, East Ash Pond, Polishing Pond, and Leachate Pond, which are discussed 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). This Work Plan was approved by IEPA in a letter dated March 3, 2010. The Landfill is Phase I of this 2010 Closure Plan. The formerly proposed Landfill Phases II, III, and IV will no longer be constructed upon AP2. Therefore, a supplemental Closure Plan for AP2 was submitted for IEPA approval in February 2018 (Civil & Environmental Consultants, Inc. [CEC], 2018). An addendum to the Closure Plan, 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 March 5, 2020 following correspondence in 2019 and early 2020 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.
1989	Embankment raise of AP2 to elevation 494 feet.
1996	Pond 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 2010 Closure 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 then. The Landfill has not yet been placed into service.

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 1×10^{-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 1×10^{-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 1×10^{-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 2018 Closure Plan and Addenda (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 Hennepin Power Plant (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 direction of groundwater flow and hydraulic gradient within the Uppermost Aquifer 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 8, 2021 prior to the D9 sampling event at the site. Groundwater elevations for Hennepin East during the D9 sampling event are shown in **Figure 2** and ranged from 446.71 feet NAVD88 (in well 02) to 452.80 feet NAVD88 (in well 17). 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. Former vertical infiltration of surface water through ash fill in AP2.
4. Upgradient concentrations of fluoride.
5. Upgradient pH values.

Data and information supporting these LOE 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 1×10^{-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 2021 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.

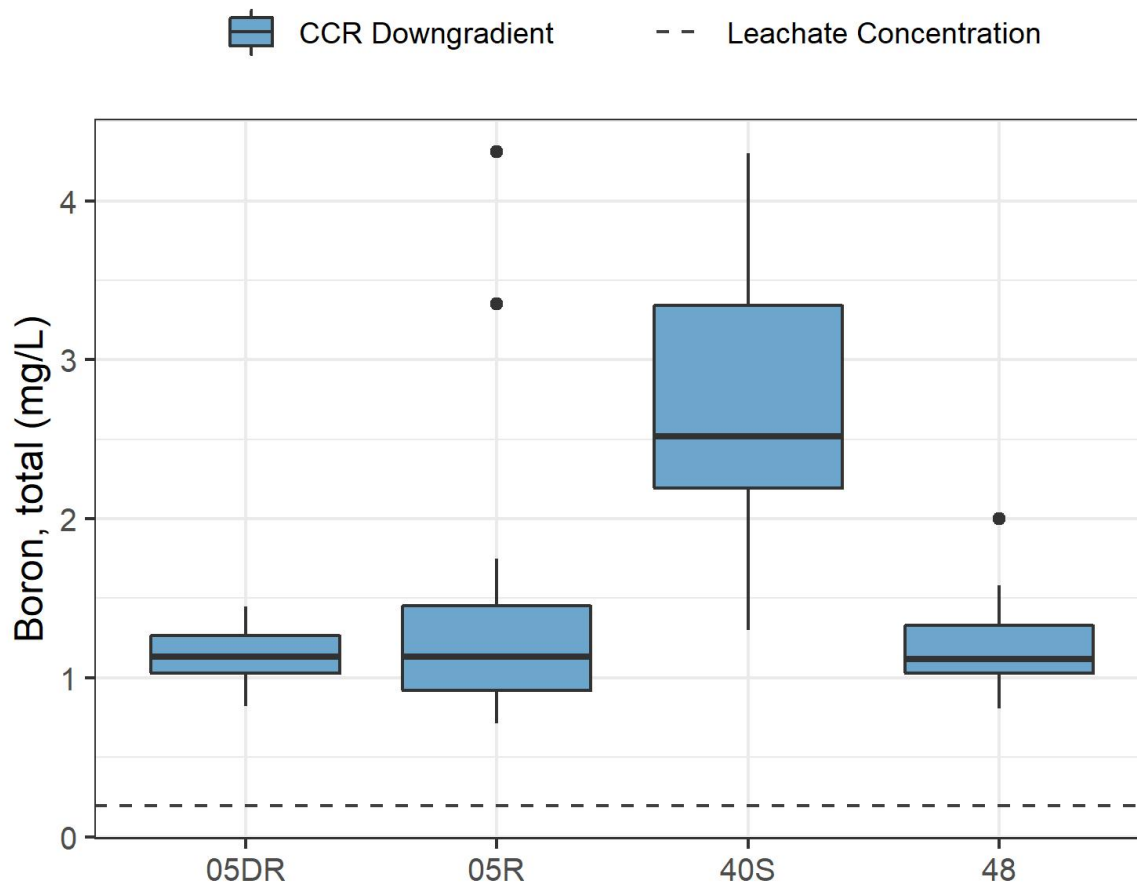


Figure A. Box-Whisker Plot Showing Distribution of Total Boron.

3.3 LOE #3: Former 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 Closure 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. The pond is unlined, potentially allowing CCR constituents to percolate downward to groundwater. Consequently, 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 supplemental 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, 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 (Closure Plan Addendum 3 [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 contour map in **Figure 2** shows a major component of groundwater flow from the east and southeast. A box-whisker plot of total fluoride concentrations detected between 2015 and 2021 at monitoring wells near the Landfill is presented in **Figure B** below. 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).

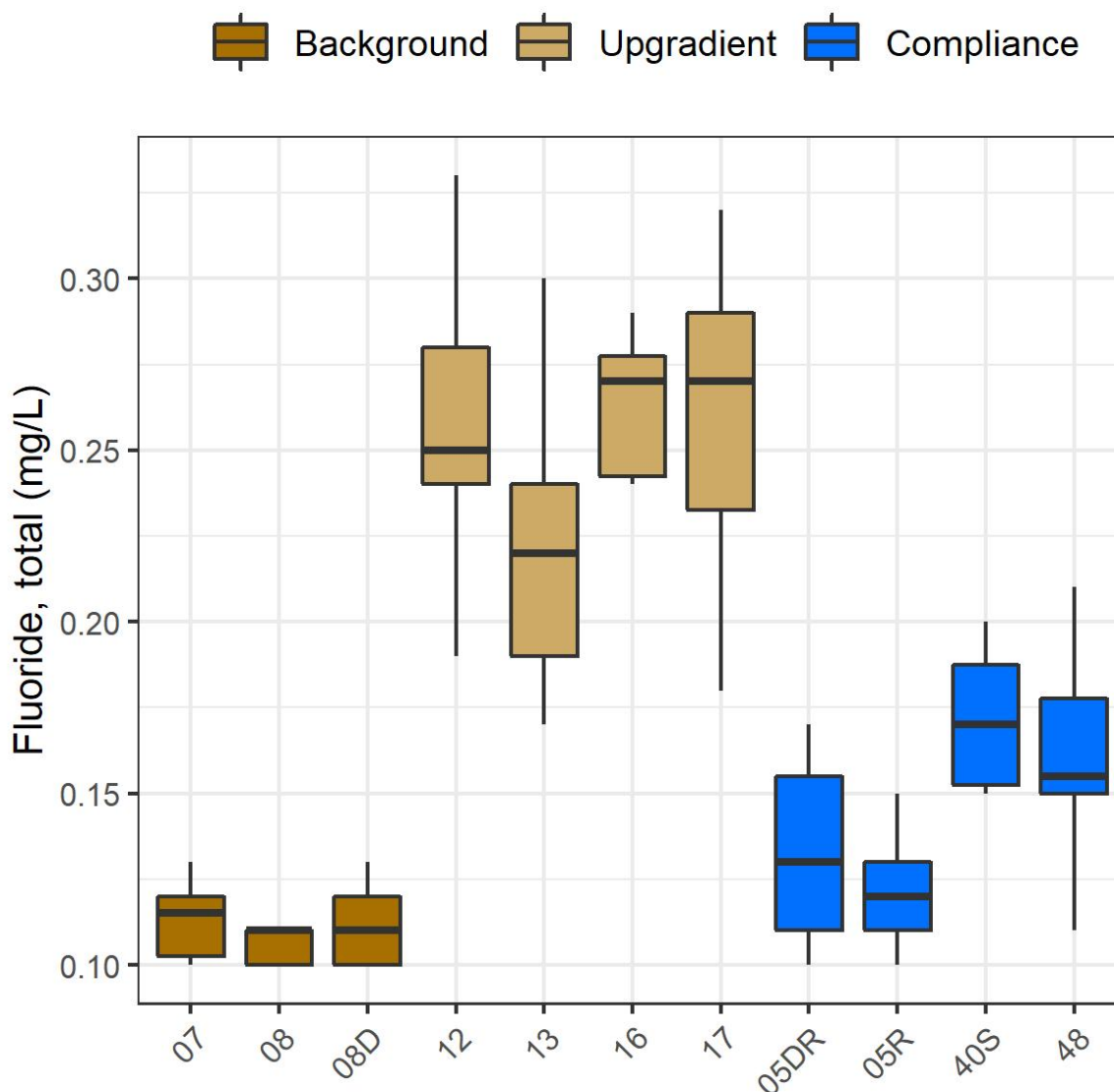


Figure B. Box-Whisker Plot Showing Total Fluoride Concentrations.

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.

3.5 LOE #5: Upgradient pH Values

The groundwater contour map in **Figure 2** shows a major component of groundwater flow from the east and southeast. A box-whisker plot of pH values observed between 2015 and 2021 at monitoring wells near the Landfill is presented in **Figure C** on the following page. Also included on this figure are pH values observed 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 C** shows two groupings of pH values as follows:

- Lower pH: The lower pH values relative to all monitoring wells compared are at background monitoring wells 07, 08, and 08D.
- Higher pH: The groundwater monitoring wells with higher pH values relative to all monitoring wells compared include downgradient compliance wells located in the vicinity of the Landfill (05R, 05DR, 40S, and 48), and wells located upgradient of the Landfill (12, 13) and upgradient of the East Ash Pond near the property boundary (16, 17).

The fact that the pH values upgradient of the Landfill (12, 13, 16, and 17) are elevated above background pH values (07, 08, 08D), and similar to pH values downgradient of the Landfill (05R, 05DR, 40S, and 48), demonstrates that the Landfill is not the source of the observed pH SSIs. If the Landfill were affecting pH values, those downgradient would be different from those upgradient.

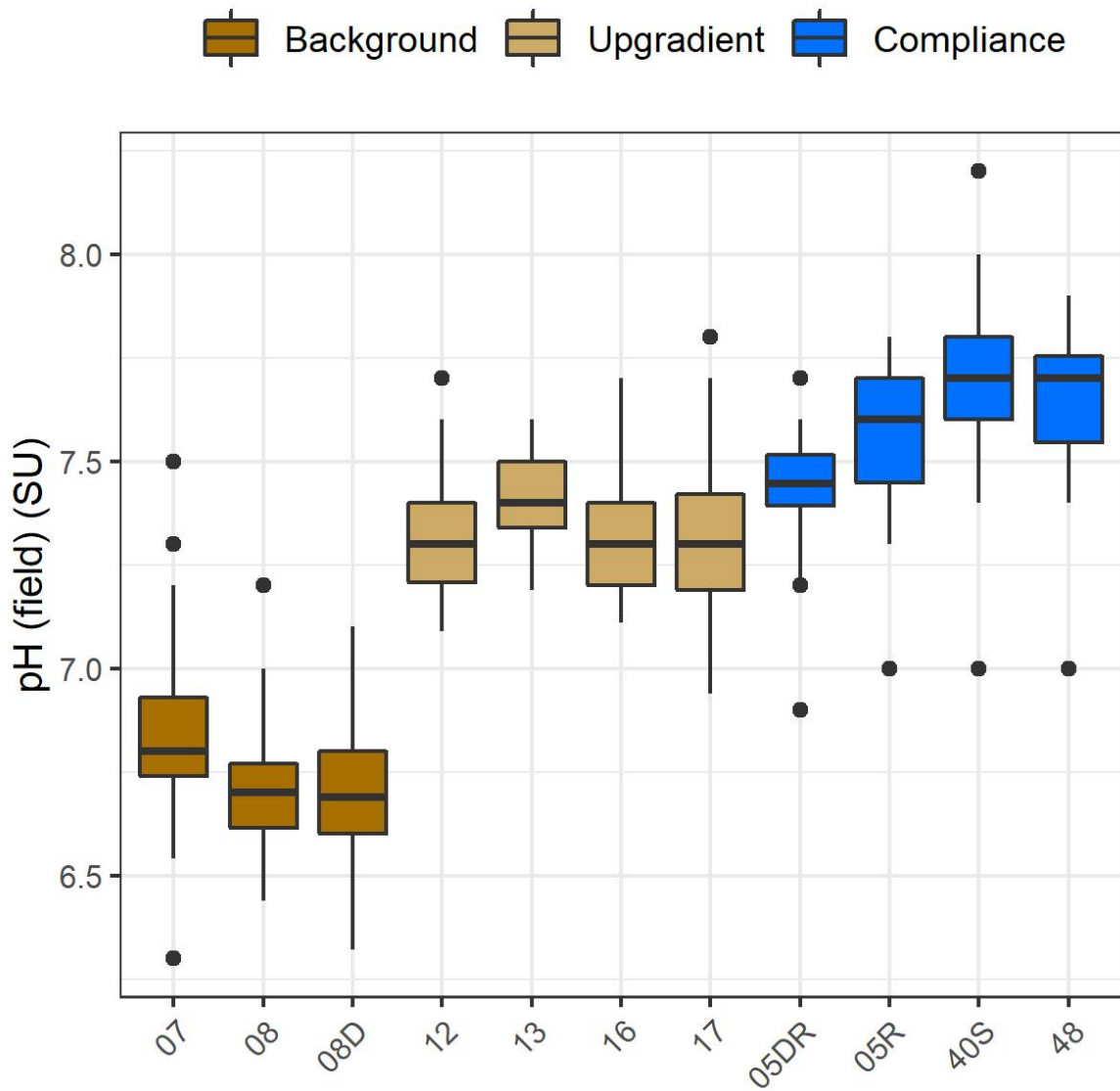


Figure C. Box-Whisker Plot Showing pH Values.

4. CONCLUSIONS

Based on these five 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. Former vertical infiltration of surface water through ash fill in AP2.
4. Upgradient concentrations of fluoride.
5. Upgradient pH values.

Based on the LOE presented, the following alternate sources are causing the SSIs observed in the Landfill's compliance wells:

- Boron: SSIs for boron may be caused by movement of CCR constituents from previously exposed ash deposits in AP2 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: It is likely that areas upgradient of the Landfill present alternate sources of elevated pH based on the fact that pH values upgradient of the Landfill are above background pH values and similar to those observed downgradient of the Landfill.

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 D9 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

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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.

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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
COAL COMBUSTION WASTE LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.





- UPGRADIENT MONITORING WELL
- BACKGROUND WELL
- COMPLIANCE WELL
- PORE WATER WELL
- MONITORING WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- PART 257 REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. NM = NOT MEASURED
3. 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 8, 2021

ALTERNATE SOURCE DEMONSTRATION
COAL COMBUSTION WASTE LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 2

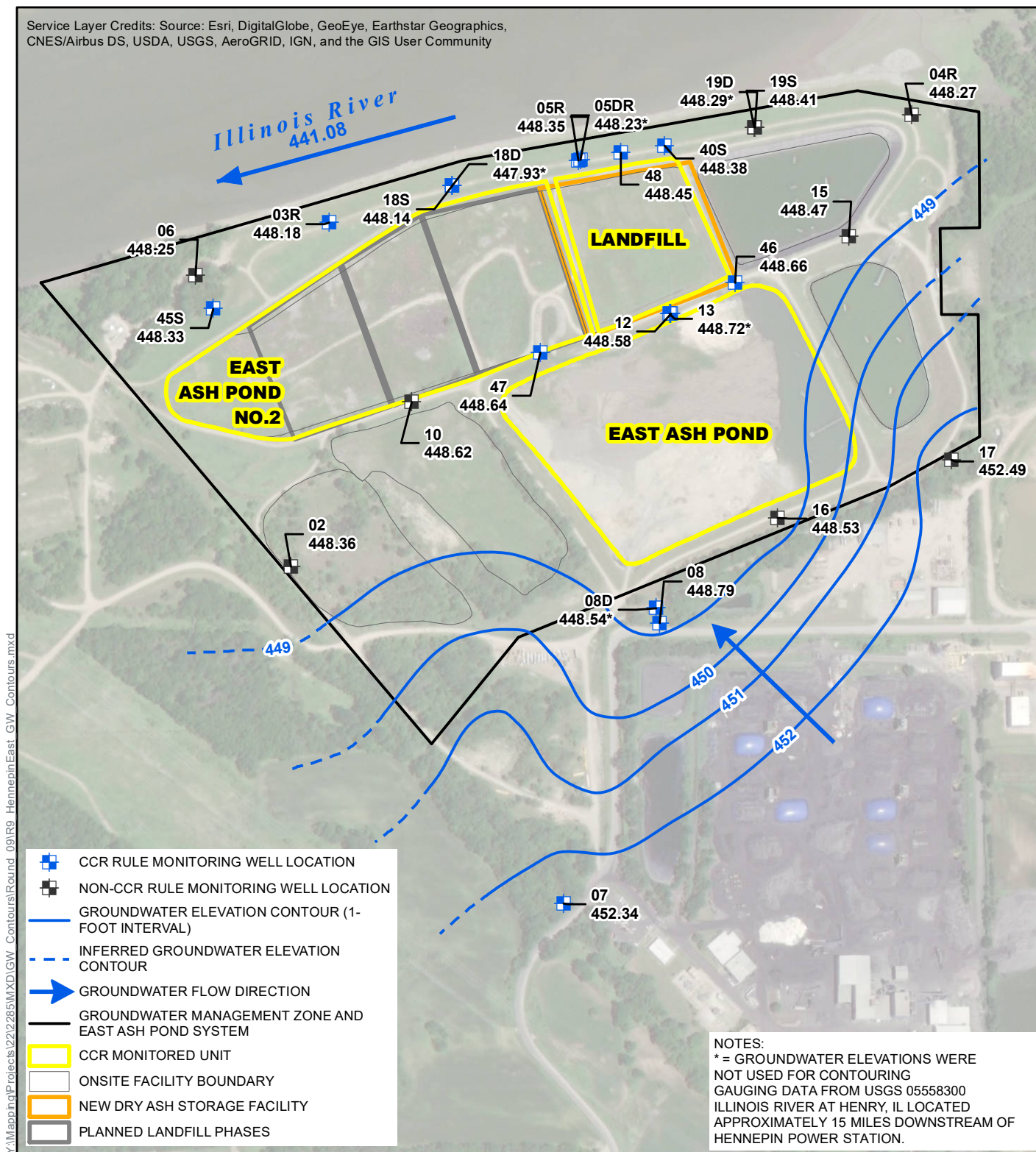
RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



APPENDICES

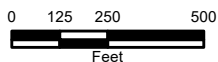
APPENDIX A GROUNDWATER CONTOUR MAPS

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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
 NOVEMBER 15, 2017

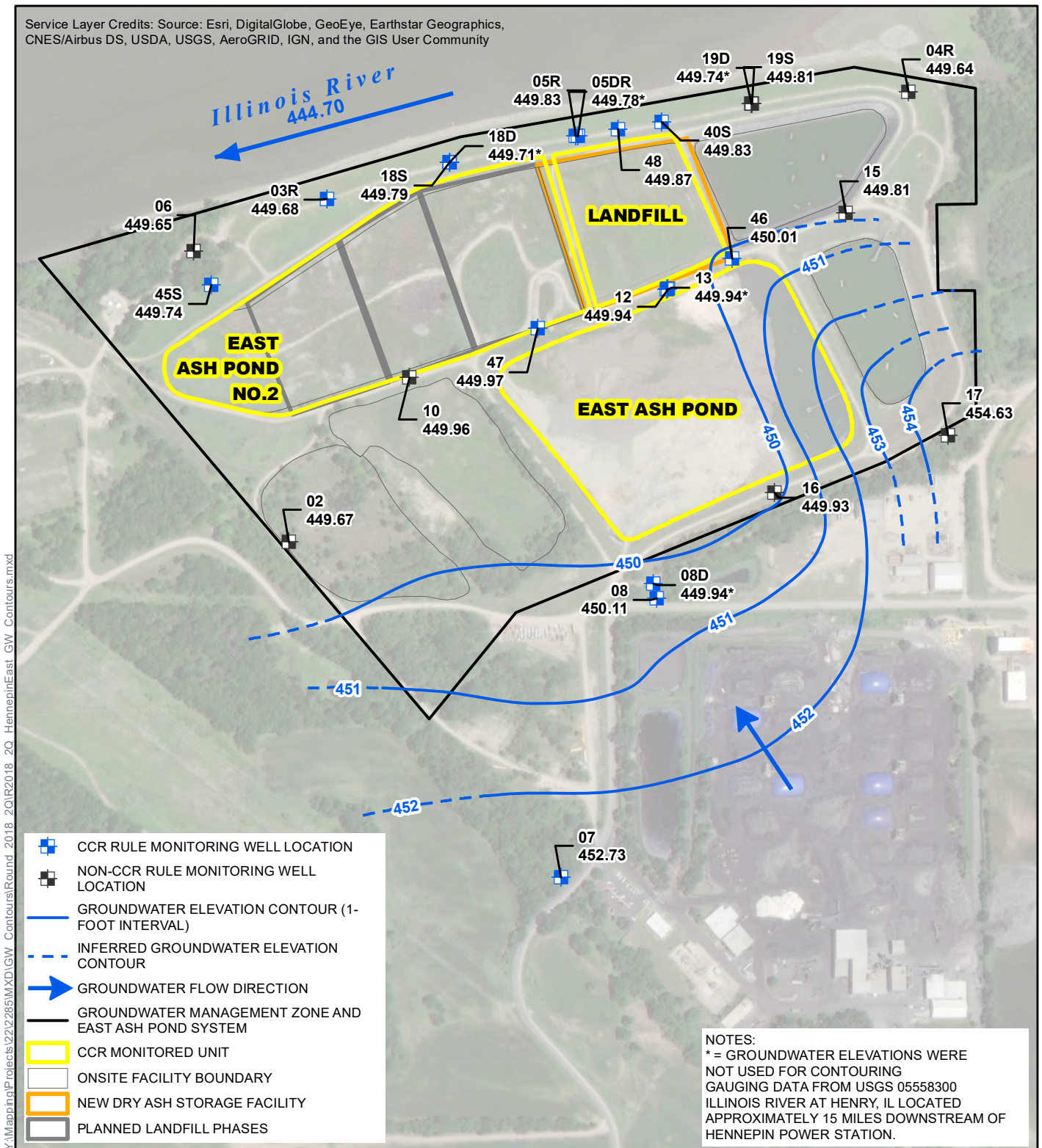
CCR RULE GROUNDWATER MONITORING
 HENNEPIN POWER STATION
 HENNEPIN, ILLINOIS



O'BRIEN & GERE ENGINEERS, INC.

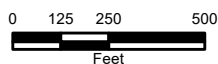


Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

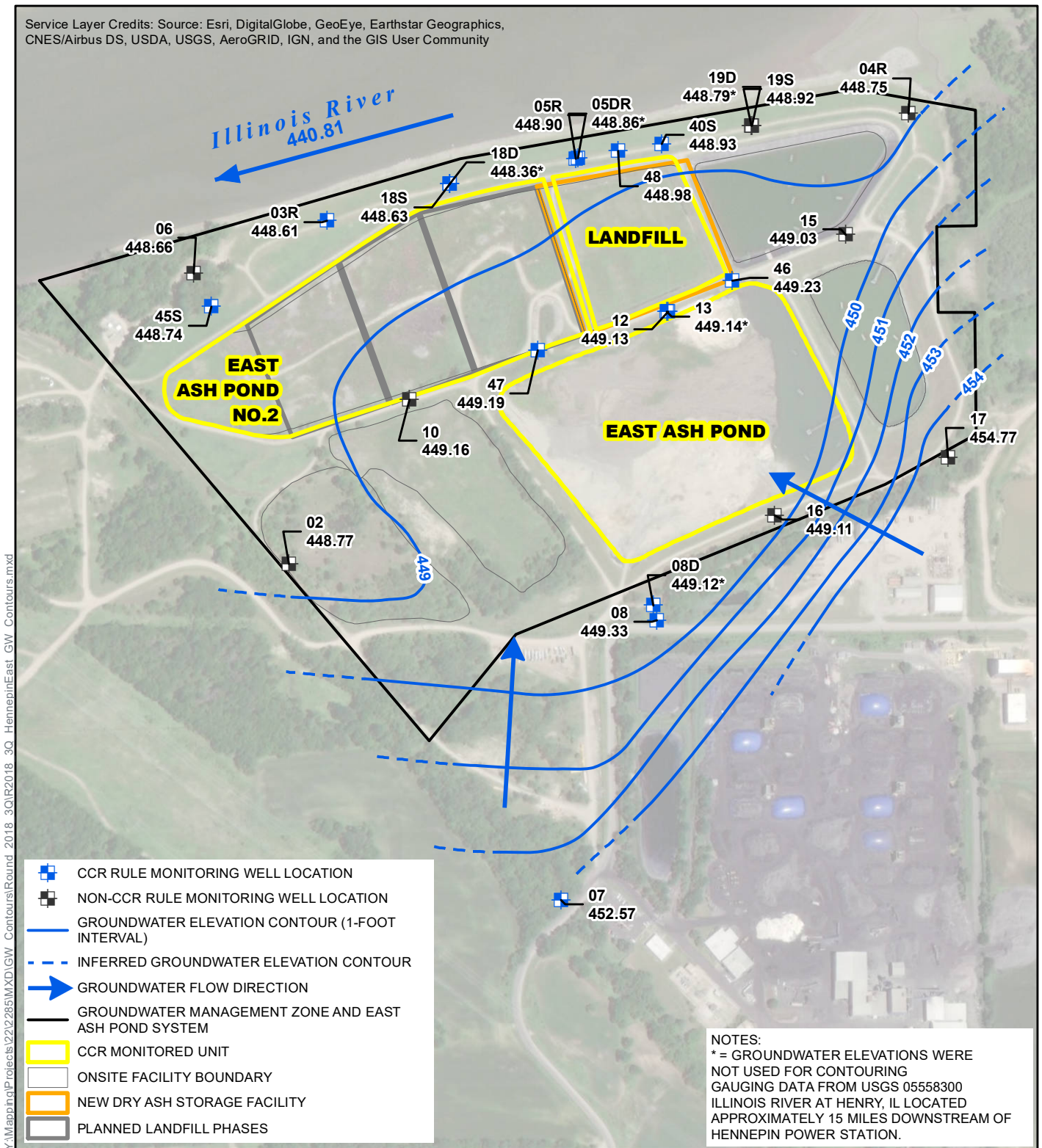


HENNEPIN LANDFILL (UNIT ID: 801), HENNEPIN ASH POND NO. 2 (UNIT ID: 802), AND HENNEPIN EAST ASH POND (UNIT ID: 803)
GROUNDWATER ELEVATION CONTOUR MAP
JUNE 13, 2018

CCR RULE GROUNDWATER MONITORING
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

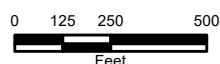


Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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 12, 2018

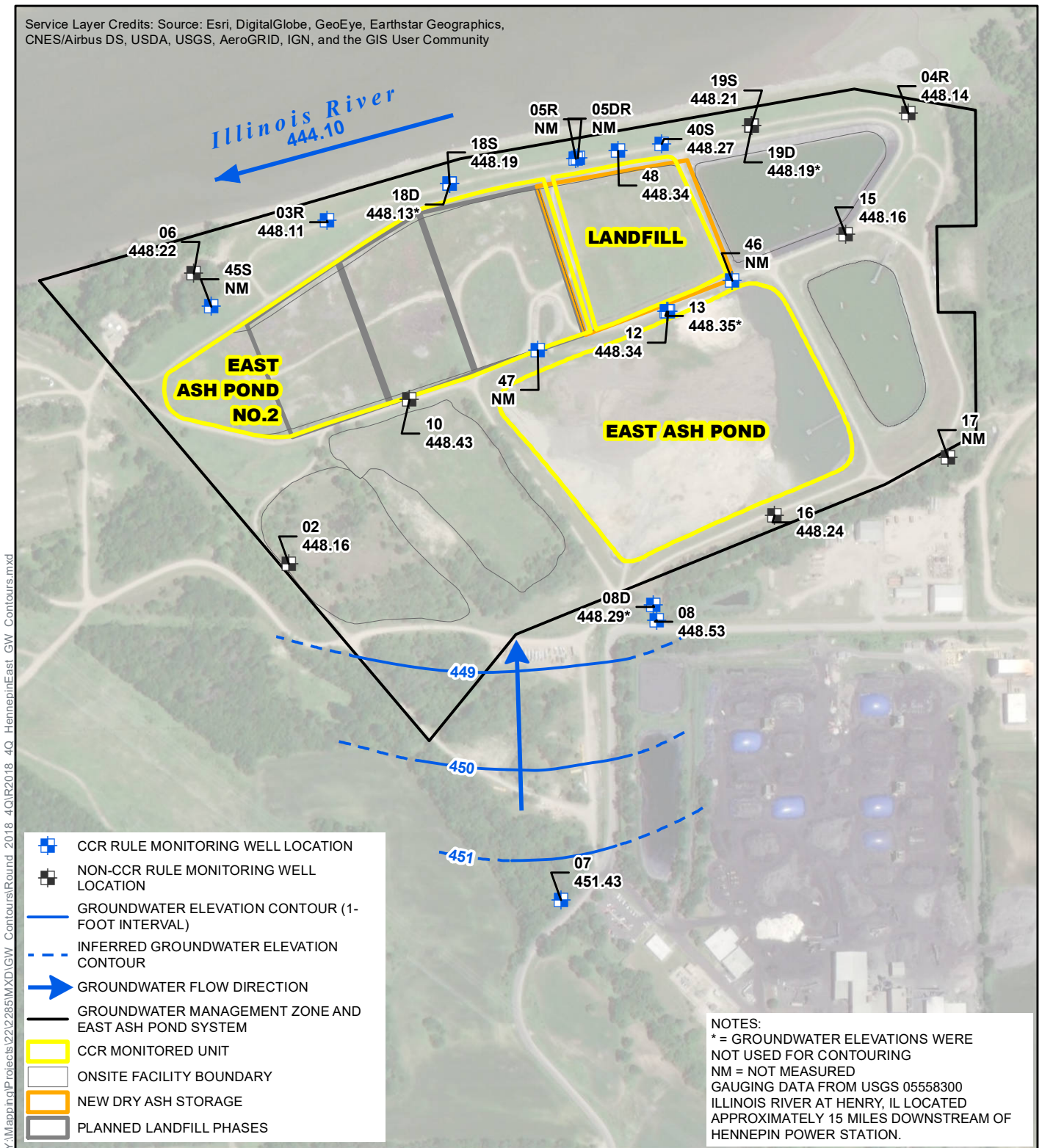
CCR RULE GROUNDWATER MONITORING
 HENNEPIN POWER STATION
 HENNEPIN, ILLINOIS



O'BRIEN & GERE ENGINEERS, INC.

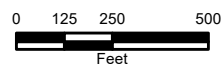
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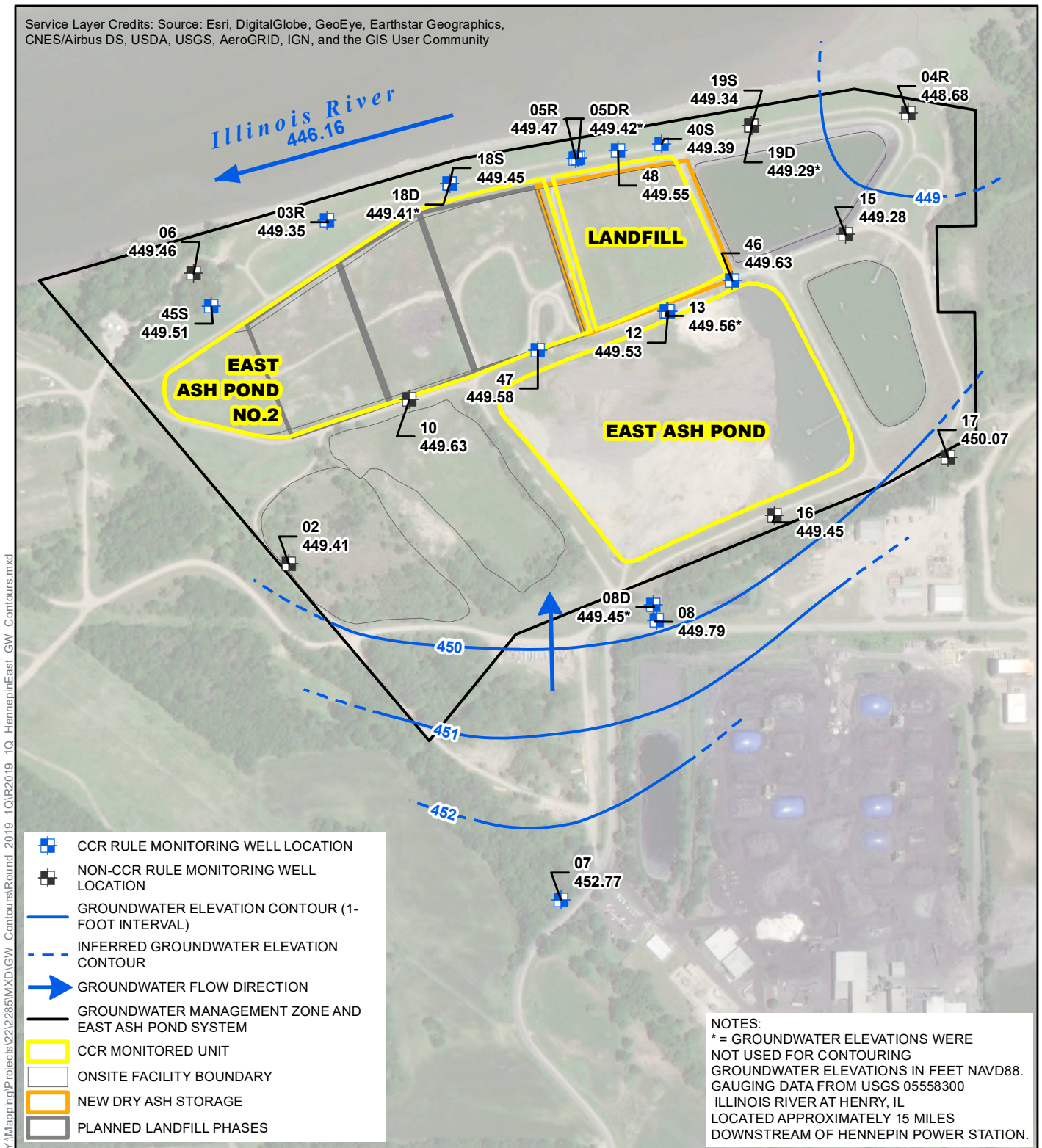


HENNEPIN LANDFILL (UNIT ID: 801), HENNEPIN ASH POND NO. 2 (UNIT ID: 802), AND HENNEPIN EAST ASH POND (UNIT ID: 803)
GROUNDWATER ELEVATION CONTOUR MAP
DECEMBER 12, 2018

CCR RULE GROUNDWATER MONITORING
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

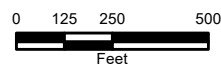


Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

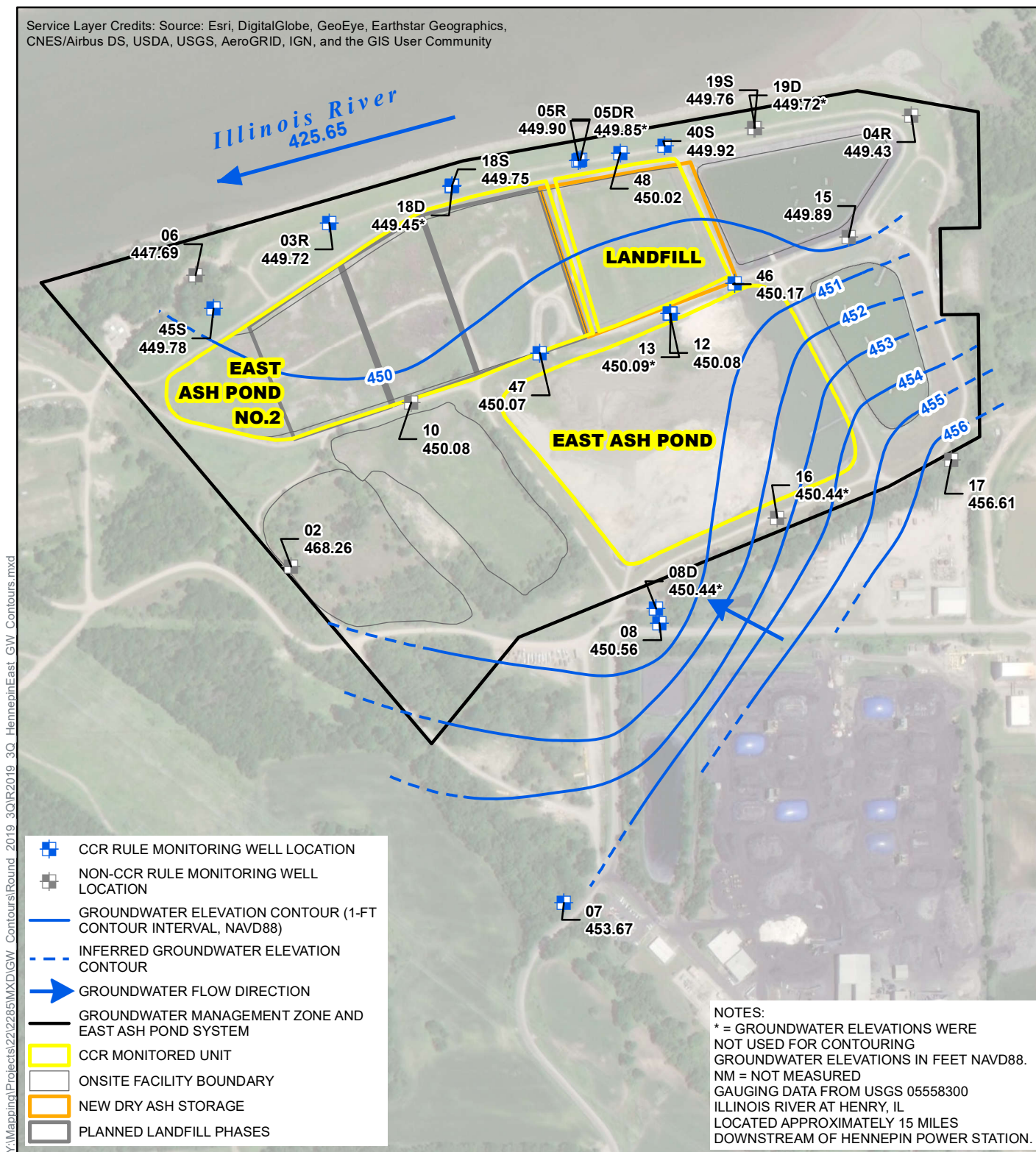


HENNEPIN LANDFILL (UNIT ID: 801), HENNEPIN ASH POND NO. 2 (UNIT ID: 802), AND HENNEPIN EAST ASH POND (UNIT ID: 803)
 GROUNDWATER ELEVATION CONTOUR MAP
 MARCH 13, 2019

CCR RULE GROUNDWATER MONITORING
 HENNEPIN POWER STATION
 HENNEPIN, ILLINOIS



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



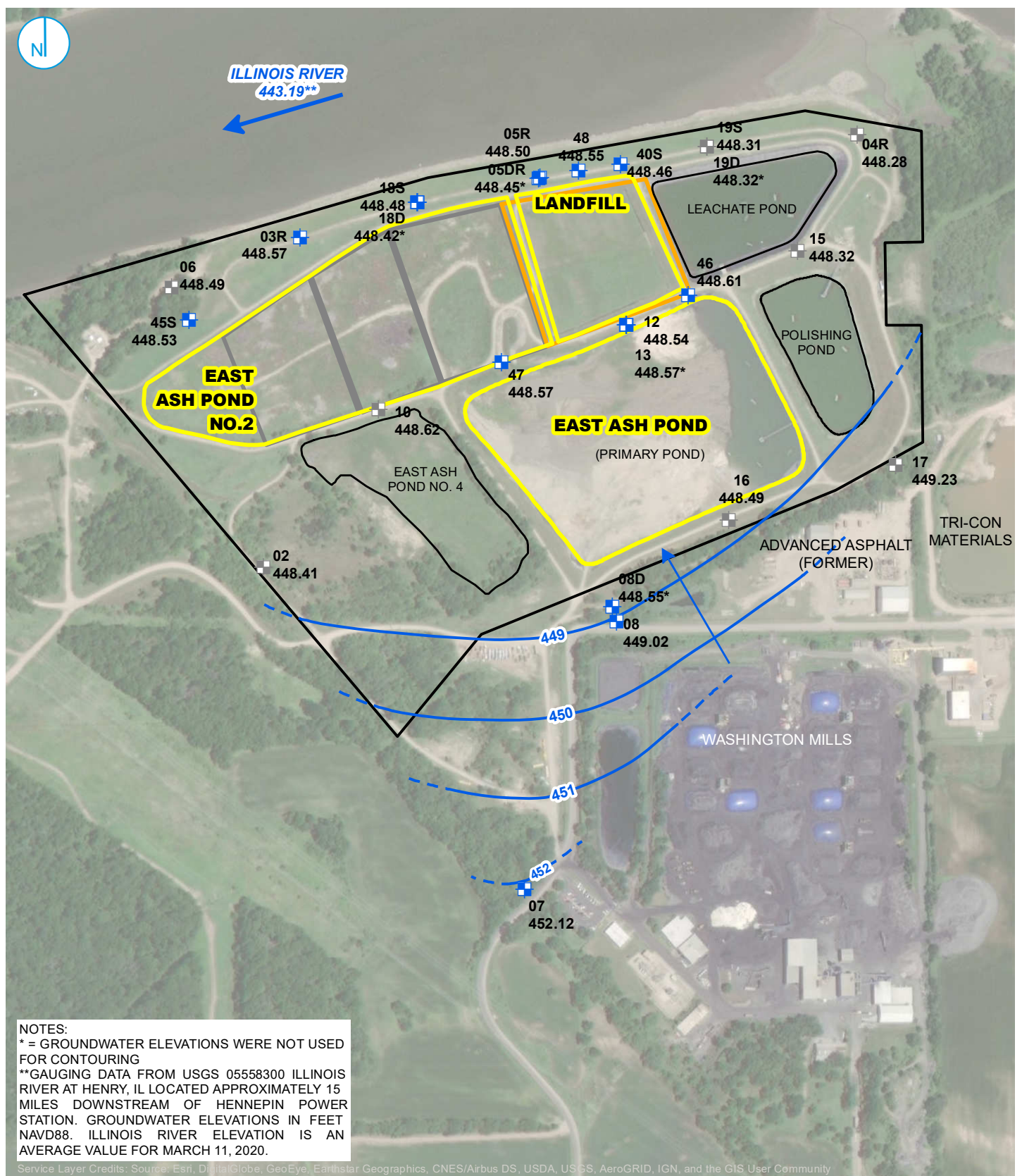
HENNEPIN LANDFILL (UNIT ID: 801), HENNEPIN ASH POND NO. 2 (UNIT ID: 802), AND HENNEPIN EAST ASH POND (UNIT ID: 803)
 GROUNDWATER ELEVATION CONTOUR MAP
 SEPTEMBER 17, 2019

CCR RULE GROUNDWATER MONITORING
 HENNEPIN POWER STATION
 HENNEPIN, ILLINOIS

0 125 250 500
 Feet



O'BRIEN & GERE ENGINEERS, INC.



- 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

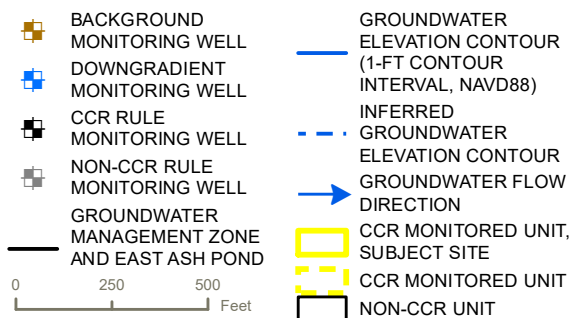
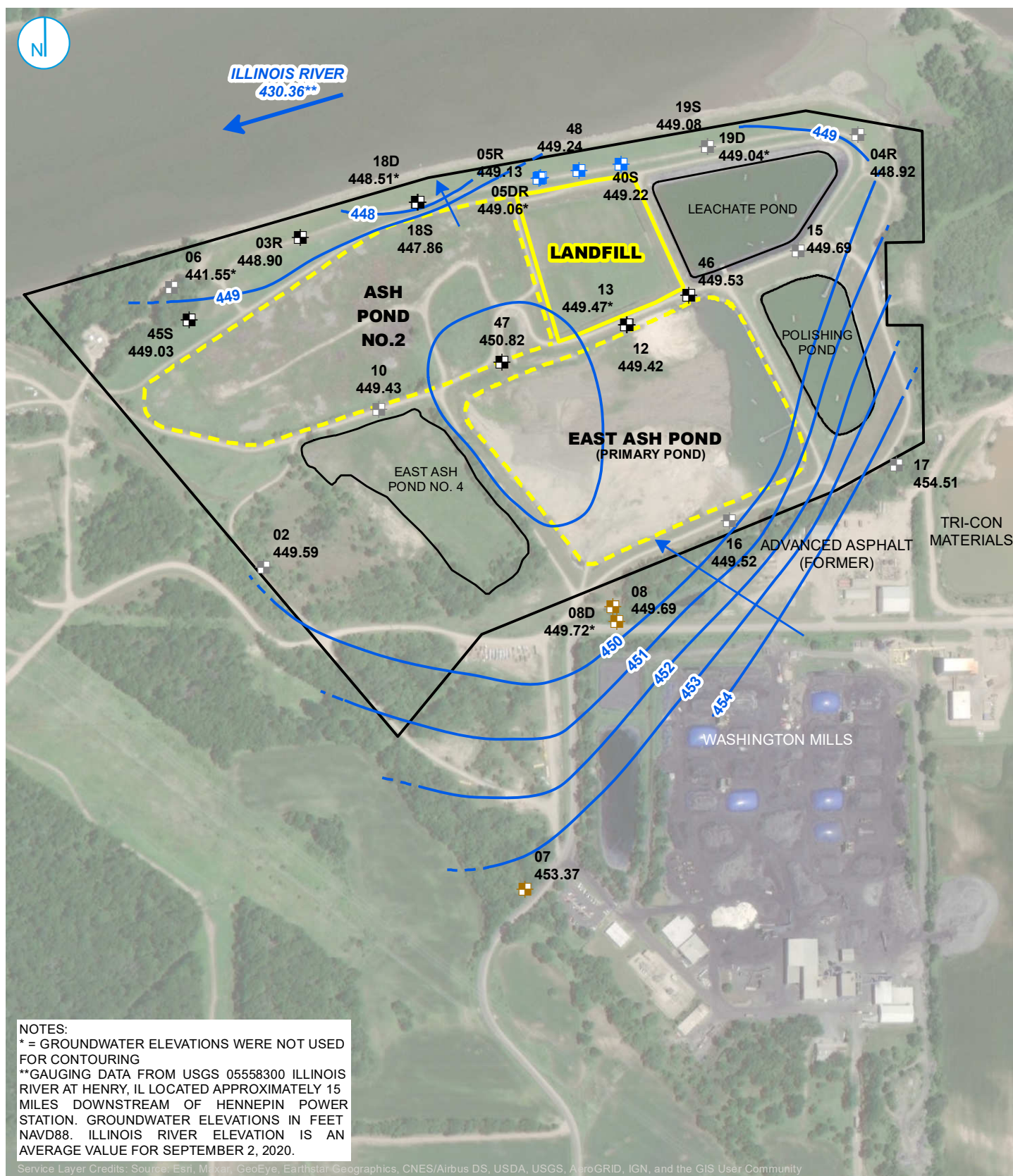
0 250 500
Feet

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



GROUNDWATER ELEVATION CONTOUR MAP SEPTEMBER 2, 2020

ALTERNATE SOURCE DEMONSTRATION
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.





- 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.



**GROUNDWATER ELEVATION
CONTOUR MAP
MARCH 17, 2021**

**ALTERNATE SOURCE DEMONSTRATION
COAL COMBUSTION WASTE LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS**

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



APPENDIX B

BOTTOM ASH LEACHATE DATA

August 03, 2009

John Augspols
Dynergy Midwest Generation
13498 East 800th Street
Hennepin, IL 61327
TEL: (815) 339-9218
FAX:



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,

A handwritten signature in black ink that reads "Heather A. White".

Heather A. White
Project Manager
(618)344-1004 ex 20

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

RL - Reporting Limit

ND - Not Detected at the Reporting Limit

Surr - Surrogate Standard added by lab

TNTC - Too numerous to count (> 200 CFU)

Q - QC criteria failed or noncompliant CCV

NELAP - IL ELAP and NELAP Accredited Field of Testing

B - Analyte detected in the associated Method Blank

J - Analyte detected below reporting limits

R - RPD outside accepted recovery limits

S - Spike Recovery outside accepted recovery limits

X - Value exceeds Maximum Contaminant Level

- Unknown hydrocarbon

IDPH - IL Dept. of Public Health

C - Client requested RL below PQL

D - Diluted out of sample

E - Value above quantitation range

H - Holding time exceeded

MI - Matrix interference

DNI - Did not ignite

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: Hennepin Station Bottom Ash

Collection Date: 7/22/2009 11:00:00 AM

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<u>ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP</u>								
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
<u>ASTM D3987, SW-846 3020A, METALS IN SHAKE EXTRACT BY GFAA</u>								
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
<u>ASTM D3987, SW-846 7470A IN SHAKE EXTRACT</u>								
Mercury, SHAKE		0.00020		< 0.00020	mg/L	1	7/28/2009	ALU

Sample Narrative

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

Client: Dynegy Midwest Generation

Project: Hennepin Station Bottom Ash

Lab Order: 09070896

Report Date: 03-Aug-09

RECEIVING CHECK LIST

Carrier: UPS

Received By: DB

Completed by: *Marvin L. Darling II*

Reviewed by: *Heather A. White*

On:

On:

24-Jul-09

24-Jul-09

Marvin L. Darling

Heather A. White

Pages to follow: Chain of custody

Extra pages included

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 ☐		
<i>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.</i>				
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

TEKLAB, INC

5445 Horseshoe Lake Road

Collinsville, IL 62234-7425

TEL: (618) 344-1004

FAX: (618) 344-1005

CHAIN-OF-CUSTODY RECORD

09070896

Page 1 of 1

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

Sample ID	ClientSampID	Matrix	Date Collected	Bottle	Requested Tests				
					D3987/6010B	D3987/7000 G	D3987/SW74 70A		
09070896-001	Hennipin Station Bottom	Solid	7/22/2009 11:00:00 AM		A	A	A		

Comments:

	Date/Time	22.8°C ICE	Date/Time
Relinquished by: _____		Received by: <u>R. Butty (WPS)</u>	7/24/09 900
Relinquished by: _____		Received by: _____	
Relinquished by: _____		Received by: _____	

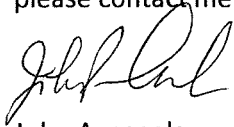
NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

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 :

A handwritten signature in black ink, appearing to read 'John Augspols', written in a cursive style.

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 FeUP
DB 7/24/09

Prepared for

Dynegy Midwest Generation, LLC

Date

November 1, 2022

Project No.

1940102203-008

**40 C.F.R. § 257.94(e)(2): ALTERNATE
SOURCE DEMONSTRATION
COAL COMBUSTION WASTE LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS
CCR UNIT 801**



Bright ideas. Sustainable change.

CERTIFICATIONS

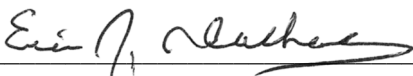
I, Brian G. Hennings, a professional geologist in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used other than for its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.



Brian G. Hennings
Professional Geologist
196-001482
Illinois
Ramboll Americas Engineering Solutions, Inc.
Date: November 1, 2022



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: November 1, 2022



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APPENDICES

Appendix A Groundwater Contour Maps
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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
D10	Detection Monitoring Round 10
HDPE	high-density polyethylene
Hennepin East	includes Landfill, AP2, AP4, and East Ash Pond
HPP	Hennepin Power Plant
IEPA	Illinois Environmental Protection Agency
Landfill	Coal Combustion Waste Landfill
LOE	line(s) of evidence
mg/L	milligrams per liter
NAVD88	North American Vertical Datum of 1988
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) Coal Combustion Waste Landfill (Landfill), located near Hennepin, Illinois.

The most recent Detection Monitoring sampling event (Detection Monitoring Round 10 [D10]) was completed on March 23, 2022, and analytical data were received on May 5, 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 August 3, 2022, within 90 days of receipt of the analytical data. 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 well 40S

In accordance with the Statistical Analysis Plan (Natural Resource Technology, an OBG Company [NRT/OBG], 2017a) well 40S was resampled on June 8, 2022 and analyzed only for pH to confirm the SSI. Following evaluation of analytical data from the resample event, the following SSIs remained:

- Boron at wells 05R, 05DR, 40S, and 48
- Fluoride at wells 05R, 05DR, 40S, and 48
- pH at well 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 November 1, 2022, 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 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 other CCR unit monitoring wells located upgradient of the Landfill (12, 13, 16, and 17) which are not part of the Landfill monitoring network 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 (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 site features shown on **Figure 1** include AP2/AP4, East Ash Pond, Polishing Pond, and Leachate Pond, which are discussed 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.
1989	Embankment raise of AP2 to elevation 494 feet.
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. The Landfill has not yet been placed into service.

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 1×10^{-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 1×10^{-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 1×10^{-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, un lithified 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 March 21, 2022 prior to the D10 sampling event at the site. Groundwater elevations for Hennepin East during the D10 sampling event are shown in **Figure 2** and ranged from 447.67 feet NAVD88 (in well 47) to 450.65 feet NAVD88 (in well 07). 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 1×10^{-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.

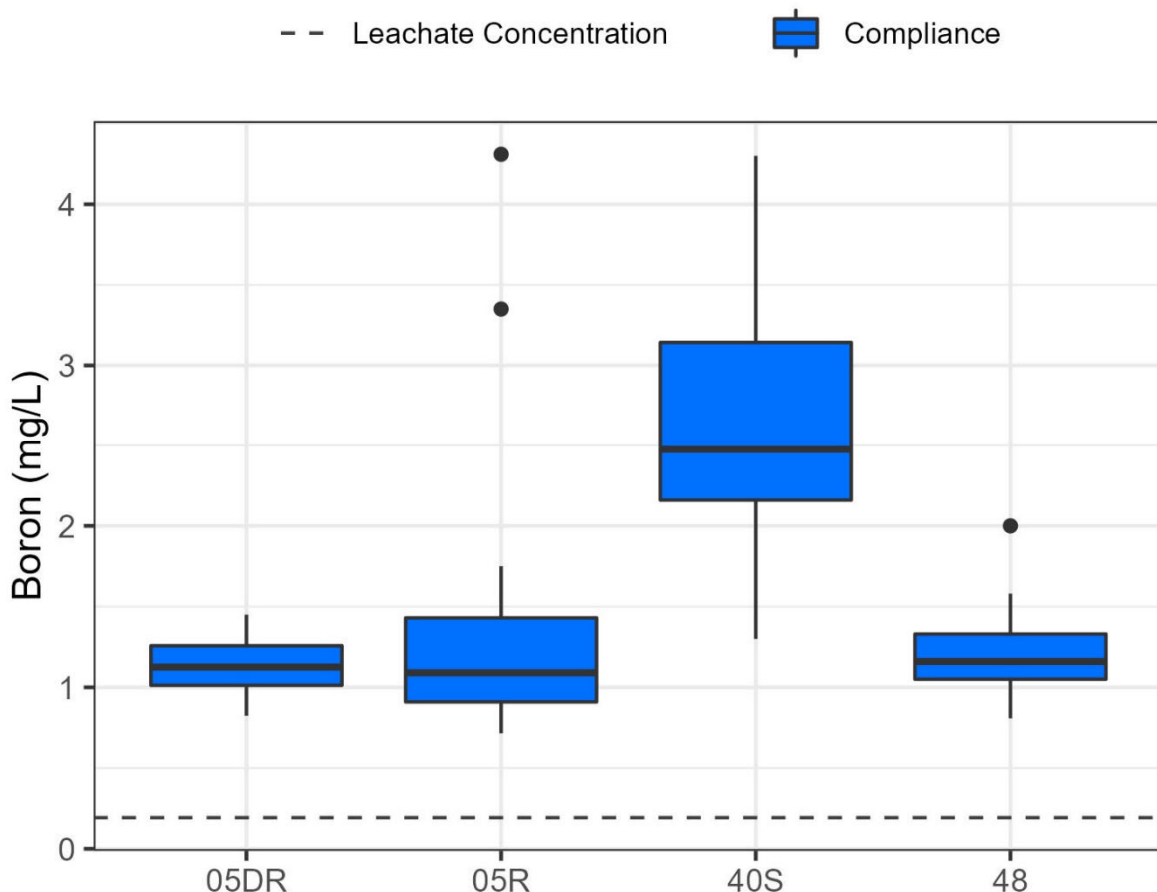


Figure A. Box-Whisker Plot Showing Distribution of Total Boron.

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, 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 contour map in **Figure 2** shows a major component of unconfined groundwater flow originates from areas upgradient of the Landfill. A box-whisker plot of total fluoride concentrations detected between 2015 and 2022 at monitoring wells near the Landfill is presented in **Figure B** below. 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. The groundwater contour map presented in **Figure 2** shows a major component of groundwater flow from the east and southeast in the direction from which the unconfined Uppermost Aquifer extends.

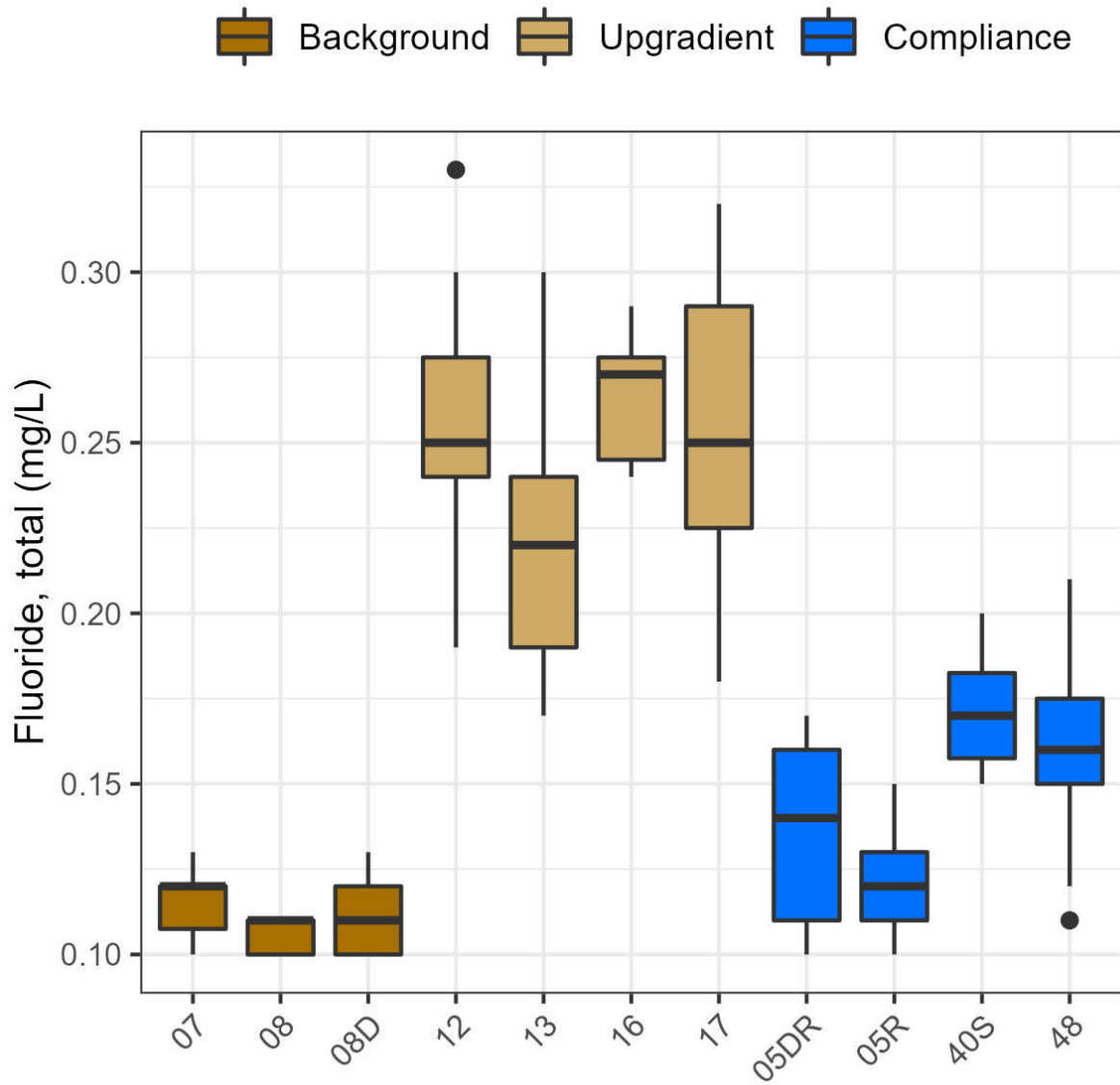


Figure B. Box-Whisker Plot Showing Total Fluoride Concentrations.

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 caused by movement of CCR constituents from previously exposed ash deposits in AP2 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 D10 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

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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
COAL COMBUSTION WASTE LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.





- BACKGROUND WELL
- COMPLIANCE WELL
- MONITORING WELL
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- PART 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



POTENTIOMETRIC SURFACE MAP
MARCH 21, 2022

2022 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

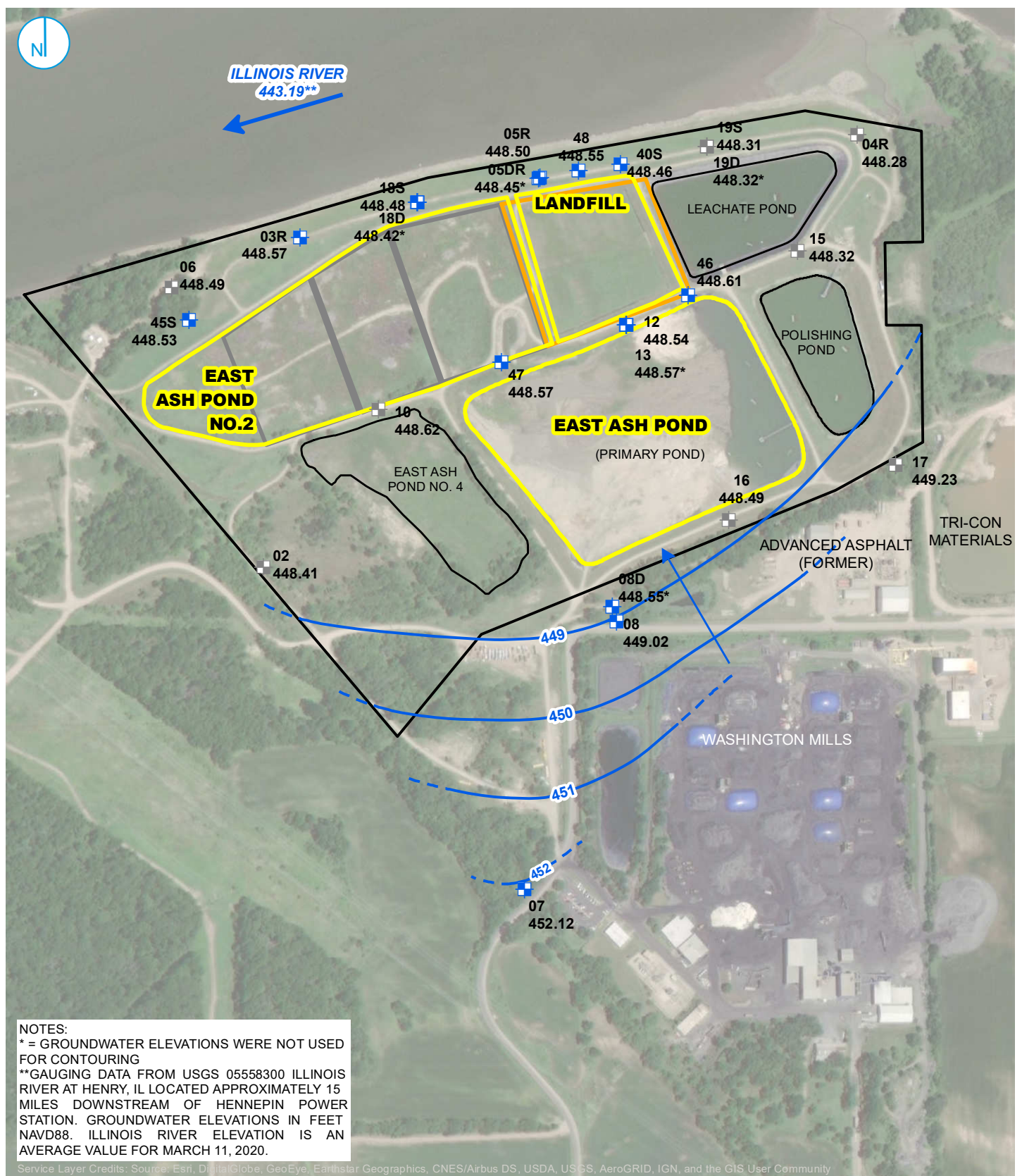
FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



APPENDICES

APPENDIX A GROUNDWATER CONTOUR MAPS



- 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

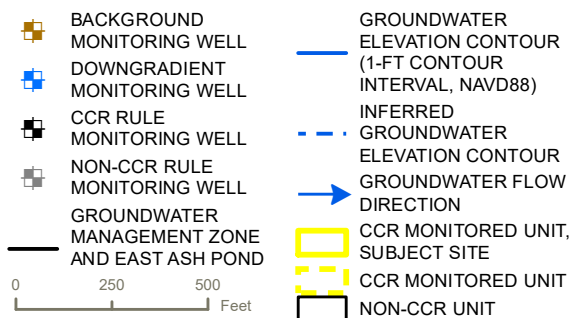
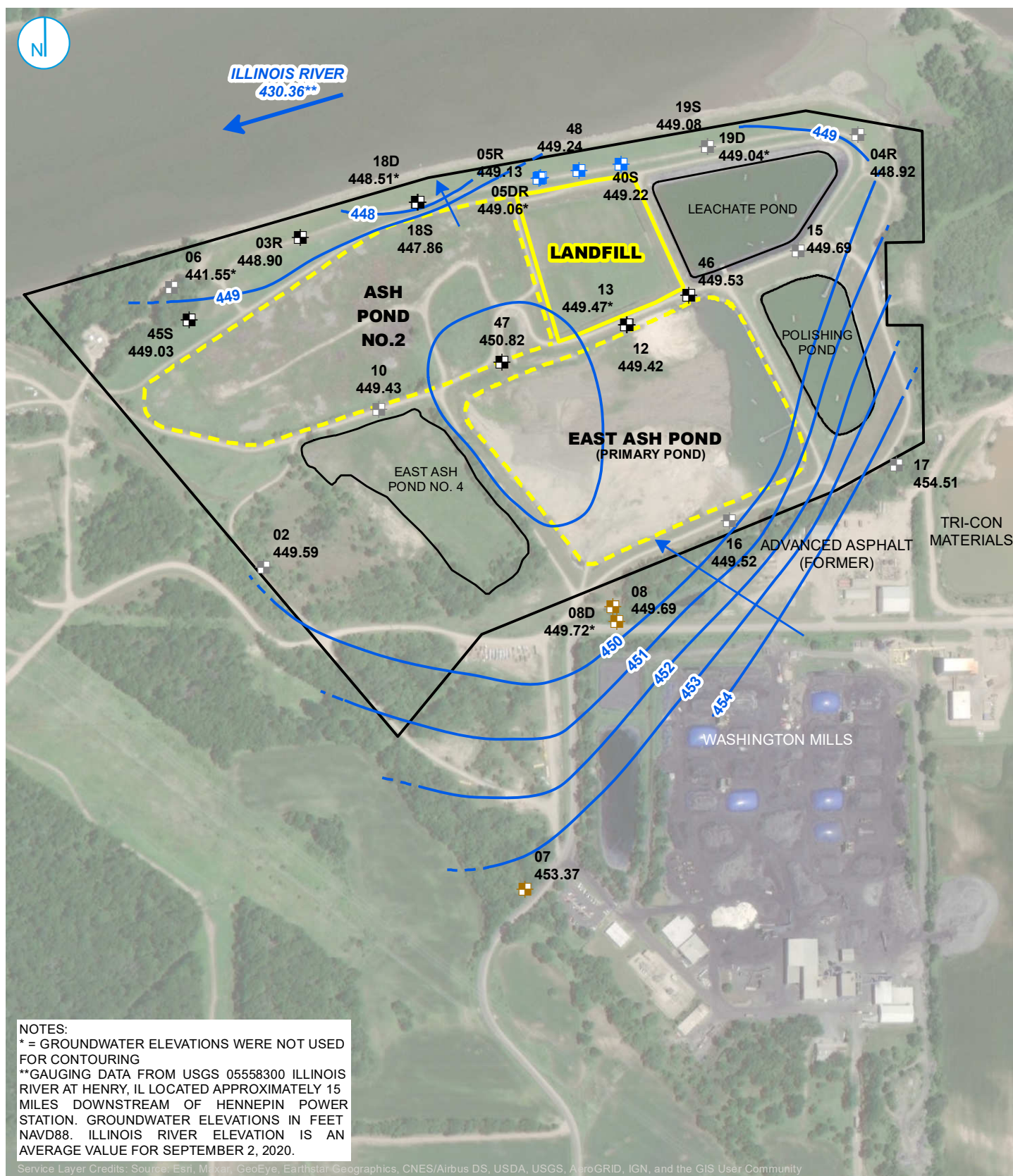
0 250 500
Feet

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



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.





- BACKGROUND WELL
- MONITORING WELL
- SOURCE SAMPLE LOCATION
- STAFF GAGE
- GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- PART 845 REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

NOTE:
ELEVATIONS IN PARENTHESIS WERE NOT USED
FOR CONTOURING.

0 175 350
Feet

UPPERMOST AQUIFER
GROUNDWATER ELEVATION
CONTOURS
APRIL 7, 2021

HYDROGEOLOGIC SITE
CHARACTERIZATION REPORT
EAST ASH POND
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

FIGURE 3-5

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



PROJECT: 169000X.XXX | DATED: 3/24/2022 | DESIGNER: galammc
Y:\Mapping\Projects\222285\MXD\GW_Contours\Round_2021\HennepinLandfill_801\HEN Landfill GWE Contours D9A4D 20210908.mxd



- BACKGROUND WELL
- COMPLIANCE WELL
- PORE WATER WELL
- MONITORING WELL
- STAFF GAGE, CCR UNIT
- GROUNDWATER ELEVATION CONTOUR (1 FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- PART 257 REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

NOTES:

- ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
- NM = NOT MEASURED
- 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



POTENTIOMETRIC SURFACE MAP SEPTEMBER 8, 2021

2021 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT
LANDFILL
HENNEPIN POWER PLANT
HENNEPIN, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



APPENDIX B

BOTTOM ASH LEACHATE DATA

August 03, 2009

John Augspols
Dynergy Midwest Generation
13498 East 800th Street
Hennepin, IL 61327
TEL: (815) 339-9218
FAX:



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,

A handwritten signature in black ink that reads "Heather A. White".

Heather A. White
Project Manager
(618)344-1004 ex 20

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

RL - Reporting Limit

ND - Not Detected at the Reporting Limit

Surr - Surrogate Standard added by lab

TNTC - Too numerous to count (> 200 CFU)

Q - QC criteria failed or noncompliant CCV

NELAP - IL ELAP and NELAP Accredited Field of Testing

B - Analyte detected in the associated Method Blank

J - Analyte detected below reporting limits

R - RPD outside accepted recovery limits

S - Spike Recovery outside accepted recovery limits

X - Value exceeds Maximum Contaminant Level

- Unknown hydrocarbon

IDPH - IL Dept. of Public Health

C - Client requested RL below PQL

D - Diluted out of sample

E - Value above quantitation range

H - Holding time exceeded

MI - Matrix interference

DNI - Did not ignite

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: Hennepin Station Bottom Ash

Collection Date: 7/22/2009 11:00:00 AM

Matrix: SOLID

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Analyst
<u>ASTM D3987, SW-846 3005A, 6010B, METALS IN SHAKE EXTRACT BY ICP</u>								
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
<u>ASTM D3987, SW-846 3020A, METALS IN SHAKE EXTRACT BY GFAA</u>								
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
<u>ASTM D3987, SW-846 7470A IN SHAKE EXTRACT</u>								
Mercury, SHAKE		0.00020		< 0.00020	mg/L	1	7/28/2009	ALU

Sample Narrative

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

Client: Dynegy Midwest Generation

Project: Hennepin Station Bottom Ash

Lab Order: 09070896

Report Date: 03-Aug-09

RECEIVING CHECK LIST

Carrier: UPS

Received By: DB

Completed by: *Marvin L. Darling II*

Reviewed by: *Heather A. White*

On:

On:

24-Jul-09

24-Jul-09

Marvin L. Darling

Heather A. White

Pages to follow: Chain of custody

Extra pages included

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 ☐		
<i>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.</i>				
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

TEKLAB, INC

5445 Horseshoe Lake Road

Collinsville, IL 62234-7425

TEL: (618) 344-1004

FAX: (618) 344-1005

CHAIN-OF-CUSTODY RECORD

09070896

Page 1 of 1

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

Sample ID	ClientSampID	Matrix	Date Collected	Bottle	Requested Tests				
					D3987/6010B	D3987/7000 G	D3987/SW74 70A		
09070896-001	Hennepin Station Bottom	Solid	7/22/2009 11:00:00 AM		A	A	A		

Comments:

	Date/Time	22.8°C ICE	Date/Time
Relinquished by: _____		Received by: <u>R. Butly (WPS)</u>	7/24/09 900
Relinquished by: _____		Received by: _____	
Relinquished by: _____		Received by: _____	

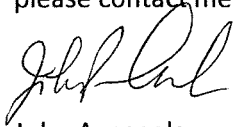
NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

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 :

A handwritten signature in black ink, appearing to read 'John Augspols', written in a cursive style.

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 FeUP
DB 7/24/09