Annual Groundwater Monitoring Report

Public Service Company of Oklahoma

Northeastern Power Station

Landfill CCR Management Unit

Permit Number: FA3566010

7300 E HWY 88

Oologah, Oklahoma

January 31, 2024

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PUBLIC SERVICE COMPANY OF OKLAHOMA℠

An AEP Company

BOUNDLESS ENERGY℠

Table of Contents

		Page
I.	Overview	2
II.	Groundwater Monitoring Well Locations and Identification Numbers	4
III.	Monitoring Wells Installed or Decommissioned	5
IV.	Groundwater Quality Data and Static Water Elevation Data, With Flow Rate and Direction and Discussion	5
V.	Groundwater Quality Data Statistical Analysis	6
VI.	Alternate Source Demonstrations completed	6
VII.	Discussion About Transition Between Monitoring Requirements or Alternate Monitoring Frequency	6
VIII.	Other Required Information - NA	7
IX.	Description of Any Problems Encountered and Actions Taken	7
X.	A Projection of Key Activities for the Upcoming Year	7

Appendix 1: Groundwater Figures and Data Tables
Appendix 2: Statistical Analyses
Appendix 3: Alternative Source Demonstrations - NA
Appendix 4: Notices for Monitoring Program Transitions - NA
Appendix 5: Well Installation/Decommissioning Logs - NA
Appendix 6: Groundwater Monitoring Field Sheets and Laboratory Reports

Abbreviations:
ASD - Alternate Source Demonstration
CCR – Coal Combustion Residual
GWPS - Groundwater protection standards
LF – Landfill
NPS – Northeastern Power Station
SSI - Statistically Significant Increase

I. Overview

This *Annual Groundwater Monitoring Report* (Report) has been prepared to report the status of activities for the preceding year for an existing Coal Combustion Residual **(**CCR) unit at Public Service Company of Oklahoma's (PSO's), a wholly owned subsidiary of American Electric Power Company (AEP), Northeastern Power Station (NPS). The Oklahoma Department of Environmental Quality (ODEQ) CCR rules require that the Annual Groundwater Monitoring Report be posted to the operating record for the preceding year no later than January 31, 2024.
In general, the following activities were completed:

- At the start of the current annual reporting period, the LF was operating under the Detection monitoring program.
- At the end of the current annual reporting period, the LF was operating under the Detection monitoring program.
- A statistical process in accordance with OAC 252:517 to evaluate groundwater data was updated, certified, and posted to AEP's CCR website in 2022 titled: *Statistical Analysis Plan (*Geosyntec Nov 2021). The statistical process was guided by USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* ("Unified Guidance," USEPA, 2009). This report was approved by ODEQ January 20, 2022.
- Semi-Annual groundwater samples were collected and analyzed for Appendix A constituents, as specified in OAC 255:517-9-5 Detection Monitoring program and AEP's *Groundwater Sampling and Analysis Plan* (2021).
- The background data was re-established in December 2021.
- Data and statistical analysis not available for the previous reporting period indicated that during the 2nd semi-annual 2022 sampling event (November and December 2022):
    - No SSIs were detected.
- During the 1st semi-annual 2023 sampling event (June 2023):
    - No SSIs were detected.
- Statistical evaluation of the 2nd semi-annual 2023 groundwater sampling event (November and December 2023) is underway.

The major components of this annual report, to the extent applicable at this time, are presented in sections that follow:

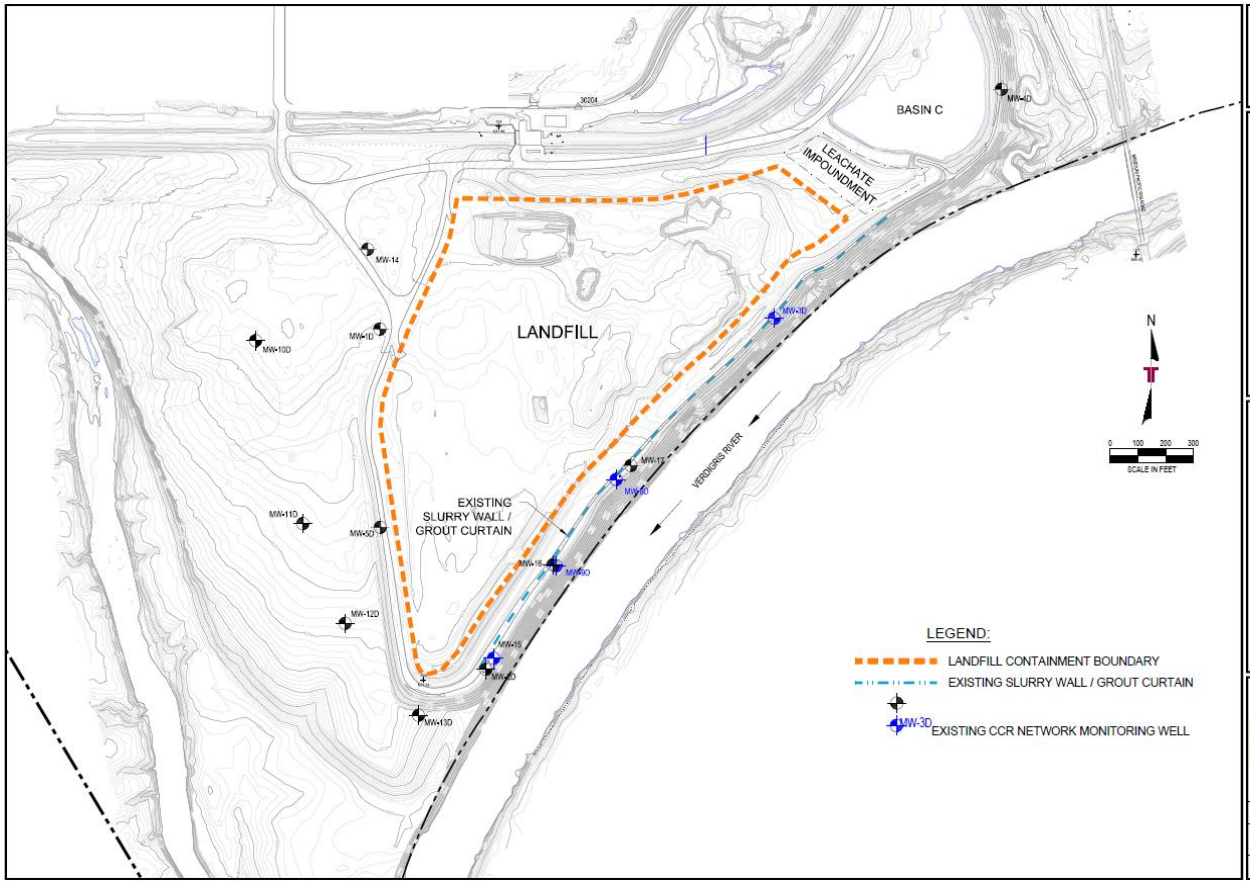
- A map, aerial photograph or a drawing showing the LF CCR management unit, all groundwater monitoring wells and monitoring well identification numbers;
- All of the monitoring data collected, including the rate and direction of groundwater flow, plus a summary showing the number of samples collected per monitoring well, the dates the samples were collected and whether the sample was collected as part of detection monitoring programs is included in Appendix 1;
- Statistical comparison of monitoring data to determine if there have been SSI(s) (Attached as Appendix 2, where applicable);
- A discussion of whether any alternate source demonstrations (ASDs) were performed, and the conclusions (Attached as Appendix 3, where applicable);
- A summary of any transition between monitoring programs or an alternate monitoring frequency (Appendix 4, where applicable).
- Identification of any monitoring wells that were installed, or decommissioned during the preceding year, along with a statement as to why that happened (Attached as Appendix 5, where applicable); and
- Other information required to be included in the annual report such field sheets, analytical reports, etc., (if applicable.

In addition, this report summarizes key actions completed, and where applicable, describes any problems encountered and actions taken to resolve those problems. The report includes a projection of key activities for the upcoming year.

II. Groundwater Monitoring Well Locations and Identification Numbers

The figure that follows depicts the PE-certified groundwater monitoring network, the monitoring well locations and their corresponding identification numbers.

Landfill Monitoring Wells	
Background	**Down Gradient**
Pending	MW-1D through MW-6D,
	MW-9D through MW-13D
	MW-14 through MW-17



III. Monitoring Wells Installed or Decommissioned

There were no groundwater monitoring wells installed or decommissioned during this reporting period. A revised groundwater monitoring well network design report that discusses the hydrogeological setting, the hydrostratigraphic units, the uppermost aquifer, and the background monitoring well locations was submitted to the ODEQ December 5, 2022 (via email) for approval. ODEQ approved the revised groundwater monitoring well network design report in a letter dated January 27, 2023.

IV. Groundwater Quality Data and Static Water Elevation Data, With Flow Rate and Direction and Discussion

Appendix 1 contains tables showing the applicable groundwater quality data obtained under OAC 252:517-9-4 through 252:517-9-5 relevant to this reporting period. Static water elevation data from each monitoring event also are shown in Appendix 1, along with the groundwater velocity calculations groundwater flow directions and potentiometric maps developed after each sampling event.

The site-wide groundwater flow velocity varies from the velocity computed in residence time calculations because assumptions used in these calculations vary based on the scale of the application of groundwater flow. The site-wide groundwater flow velocity is determined as a representative average over the entire CCR unit, which is a large area (multiple acres) consisting of different rock formations. The residence time calculation is a localized estimate use to establish the residence time of groundwater within a single well (<100 sq ft). The site-wide groundwater flow velocity utilizes the maximum and minimum hydraulic gradient based on groundwater elevation differences between two widely spaced site monitoring wells. For a localized hydraulic gradient, the residence time calculations use the elevation difference between the target monitoring well and the nearest groundwater elevation contour line. Additionally, the hydraulic conductivity and effective porosity used in the site-wide groundwater flow velocity are represented by average parameters based on field tests conducted at the Unit. The residence time calculation uses an estimated hydraulic conductivity and effective porosity from a reference work representative of the formation in contact with the well.

Groundwater samples were collected semi-annually and analyzed for Appendix A constituents as specified in OAC 255:517-9-5 Detection Monitoring program and AEP's Groundwater Sampling and Analysis Plan, which was approved by ODEQ September 2018.

Appendix 6 contains the field sheets and laboratory analytical reports that are available for this reporting period.

V. Groundwater Quality Data Statistical Analysis

Semi-Annual groundwater samples were collected and analyzed for Appendix A constituents, as specified in OAC 255:517-9-5 Detection Monitoring program and AEP's *Groundwater Sampling and Analysis Plan* (2021) and approved by ODEQ January 20, 2022.

ODEQ issued a Notice of Deficiency (NOD) January 30, 2020, for the boron ASD submitted October 2018, which presented revised statistical results through intra-well analysis. ODEQ agreed that a statistical error had occurred related to inappropriate background wells MWs 7D and 8D and background concentrations could not be established; therefore prior to instituting an assessment monitoring program, a background well or wells representative of the aquifer must be established. Monitoring wells MW-18 and MW-19 were installed in 2022 and groundwater samples were collected in 2023. An upgradient background well has not been established. Until the background concentrations can be established, statistical analysis will be completed through intra-well comparison.

- Data and statistical analysis not available for the previous reporting period and certified February 16, 2023 indicated that during the 2nd semi-annual 2022 groundwater sampling event conducted November 7, 2022 with 2 of 2 confirmatory sampling conducted December 12, 2022:
    - No potential SSIs were identified
- During the 1st semi-annual 2023 sampling event conducted June 6, 2023, and certified October 3, 2023:
    - No potential SSIs were identified
- The 2nd semi-annual 2023 statistical evaluation for the groundwater samples collected in October 10, 2023 with 2 of 2 confirmatory sampling conducted December 28, 2023 is underway.

The statistical reports available for this reporting period are found in Appendix 2.

VI. Alternate Source Demonstrations completed

No alternate source demonstrations (ASDs) were completed since no SSIs were identified.

VII. Discussion About Transition Between Monitoring Requirements or Alternate Monitoring Frequency

This CCR Unit remained in detection monitoring throughout 2023.

The semi-annually sampling frequency will be maintained for the current monitoring program.

VIII. Other Required Information

Appendix 2 contains a memorandum that explains the reissuance of select analytical laboratory reports to correct laboratory equipment data quality assurance/quality control issues.

IX. Description of Any Problems Encountered and Actions Taken

As required by OAC 252:517-9-1(b)(1)(c), a minimum of eight independent samples are to be collected from each downgradient well within the monitoring well network. NPS continues to attempt to collect background data from wells 1D, 2D, 10D, 11D, 13D, 14, 16, and 17, which often lack sufficient water volume for sample collection after allowing for 24 hours of recharge.

Of these wells:

During the 1st semi-annual sampling event, groundwater samples were successfully collected from wells 13D (no radium) for Appendix B parameters.

During the 2nd semi-annual sampling event, groundwater samples were successfully collected from MWs 2D and 14 for Appendix A parameters.

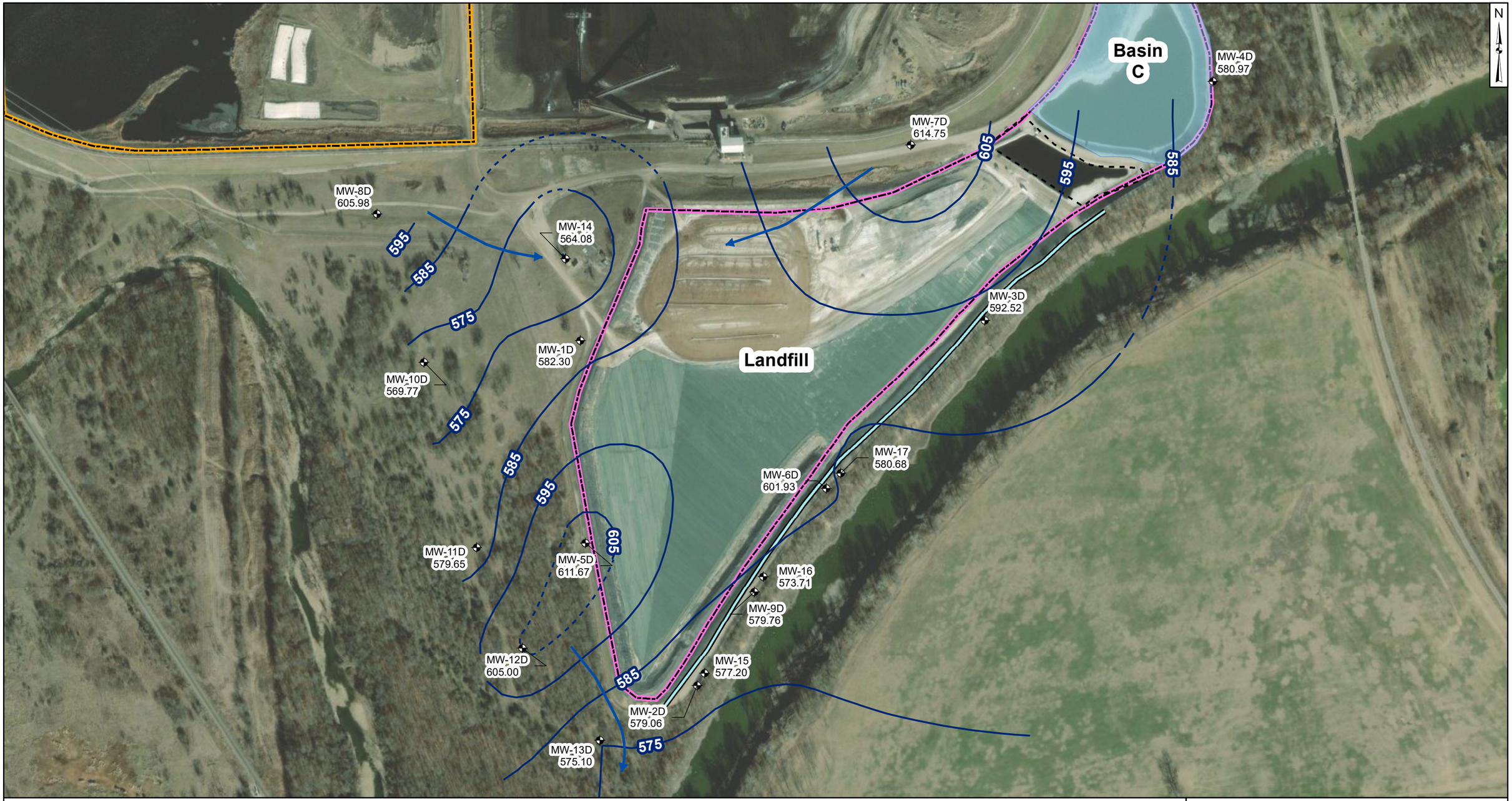
X. A Projection of Key Activities for the Upcoming Year

Key activities for the upcoming year include:

- As required by OAC 252:517-9-5, conduct detection monitoring of the groundwater for the LF CCR unit on a semi-annual bases;
- Evaluation of the detection monitoring results from a statistical analysis viewpoint, looking for SSIs above background;
- Complete ASDs for potential SSIs, as needed, and submit to ODEQ for approval;
- Preparation of the next annual groundwater report.

APPENDIX 1

Potentiometric Maps and Tables follow, showing the groundwater monitoring data collected, the rate and direction of groundwater flow, and a summary showing the number of samples collected per monitoring well. The dates that the samples were collected also is shown.



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Approximate Groundwater Flow Direction
- Bottom Ash Pond
- Landfill
- Impoundment
- Slurry Wall

Notes

1. Monitoring well coordinates and water level data (collected June 20, 2023) provided by AEP.
2. Groundwater elevation units are feet above mean sea level (ft. msl).
3. River water elevation was 533.01 ft. msl on June 20, 2023 (USGS 07178452).
4. Satellite imagery provided by ESRI.

500 250 0 500 Feet

Potentiometric Map - Uppermost Aquifer
June 2023

AEP Northeastern Power Plant - Landfill
Oologah, Oklahoma

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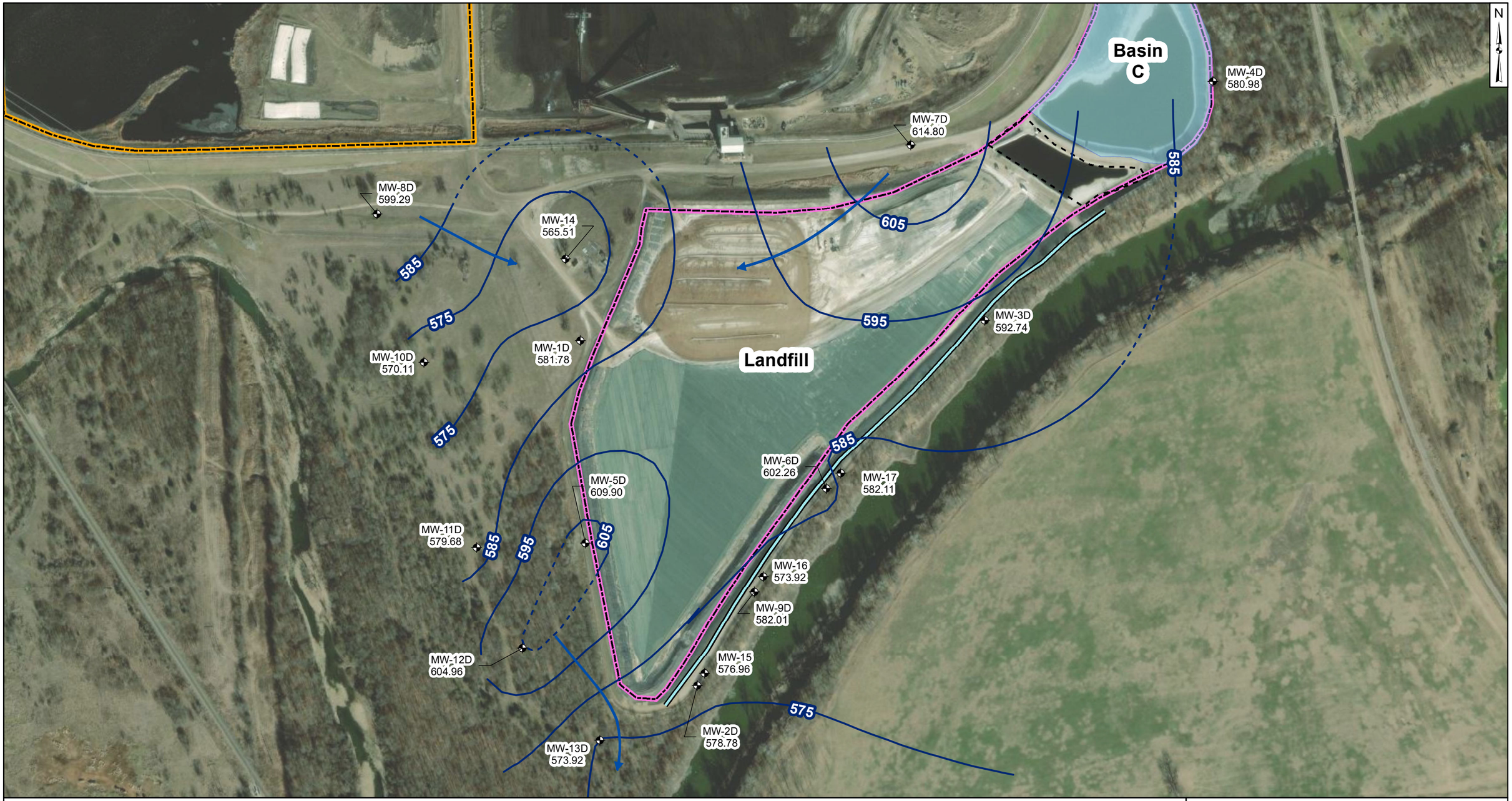
Columbus, Ohio | 2023/10/13

Figure 1

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Northeastern\2023\AEP-Northeastern_LF_2023-06_June.mxd. Okiemute.Commander. 10/13/2023. Project/Phase/Task.



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Approximate Groundwater Flow Direction
- Bottom Ash Pond
- Landfill
- Impoundment
- Slurry Wall

Notes

1. Monitoring well coordinates and water level data (collected October 10, 2023) provided by AEP.
2. Groundwater elevation units are feet above mean sea level (ft. msl).
3. River water elevation was 533.02 ft. msl on October 10, 2023 (USGS 07178452).
4. Satellite imagery provided by ESRI.

500 250 0 500 Feet

Potentiometric Map - Uppermost Aquifer
October 2023

AEP Northeastern Power Plant - Landfill
Oologah, Oklahoma

Geosyntec consultants

Columbus, Ohio | 2023/11/08

Figure 2

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Northeastern\2023\AEP-Northeastern_LF_2023-10_Oct.mxd. Okiemute.Commander. 11/8/2023. Project/Phase/Task.

Table 1: Residence Time Calculation Summary
Northeastern Landfill

Geosyntec Consultants, Inc.

			2022-06		2023-10		2021-12[3]	
CCR Management Unit	Monitoring Well	Well Diameter (inches)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Landfill	MW-3D [2]	2.0	0.7	89	0.7	89	NC	NC
	MW-4D [2]	2.0	0.8	79	0.7	84	NC	NC
	MW-5D [2]	2.0	1.6	39	1.4	42	NC	NC
	MW-6D [2]	2.0	1.0	61	0.9	66	NC	NC
	MW-7D [1]	2.0	0.9	64	0.9	66	NC	NC
	MW-8D [1]	2.0	2.3	27	1.7	35	NC	NC
	MW-9D [2]	2.0	1.9	32	0.8	74	0.8	72
	MW-12D [2]	2.0	1.8	34	1.8	34	NC	NC
	MW-15 [2]	2.0	0.5	133	1.2	50	NC	NC

Notes:
[1] - Observation Well
[2] - Downgradient Well
[3] - Only select wells were gauged as part of two-of-two verification sampling
NC - Not Calculated

Table 1. Groundwater Data Summary: MW-1D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/30/2018	Background	1.2	135	--	--	7.4	--	--
11/7/2022	Background	1.20	163	237	1.41	7.4	1,330	2,740
12/12/2022	Background	2.22	328	265	1.44	7.5	1,340	3,170
1/24/2023	Background	1.30	186	--	--	7.3	--	--

Table 1. Groundwater Data Summary: MW-1D
Northeastern - LF
Appendix B Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/30/2018	Background	4.57 J1	< 1.05 U1	18.1	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.36 J1	--	--	< 0.68 U1	0.05481	< 0.005 U1	10.73	3.11 J1	43
11/7/2022	Background	0.40	1.74	62.9	0.26 J1	0.325	5.38	3.39	--	1.41	4.67	0.114	--	14.2	1.03	0.12 J1
12/12/2022	Background	0.4 J1	23.0	758	3.51	4.80	70.0	52.9	--	1.44	46.2	0.152	0.070 J1	28	9.8	0.9 J1
1/24/2023	Background	0.5 J1	7.9	238	1.33	1.43	29.8	14.3	--	--	14.5	0.0968	0.04 J1	15	3.6 J1	0.4 J1

Table 1. Groundwater Data Summary: MW-2D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/2/2018	Background	10.5	7.52	14	2.028	10.6	628	1,206
5/30/2018	Background	10.1	19.2	--	--	10.4	--	--
2/27/2019	Background	9.67	9.26	16.4	1.56	11.0	612	1,218
8/26/2019	Background	10.7	14.3	12	1.661	12.8	591	1,236
6/29/2020	Background	11.3	11.9	11.5	1.91	13.7	732	1,310
4/13/2021	Background	10.6	12.5	12.1	1.81	11.0	654	1,250
6/14/2022	Background	8.46	18.5	15.5	1.22	10.1	617	1,180 L1
2/21/2023	Background	8.67	8.48	14.9	1.58	10.4	634	1,260
3/8/2023	Background	9.55	9.2	14.0	1.58	10.8	638	1,180
4/10/2023	Background	9.54	75.5	--	--	10.4	--	--
6/20/2023	Background	8.93	14.9	--	--	10.4	--	--
10/10/2023	Background	9.36	10.6	14.5	1.48	10.3	597	1,180

Table 1. Groundwater Data Summary: MW-2D
Northeastern - LF
Appendix B Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/2/2018	Background	2.12 J1	37.15	9.62	< 0.02 U1	0.3 J1	< 0.23 U1	0.36 J1	1.259	2.028	< 0.68 U1	0.0006 J1	0.046	588	82.77	1.1 J1
5/30/2018	Background	1.95 J1	34.61	29.17	< 0.02 U1	0.44 J1	1.4	0.3 J1	--	--	1.28 J1	0.00125	0.04	552	72.31	2
2/27/2019	Background	--	--	--	--	--	--	--	--	1.56	--	--	0.028	--	--	--
8/26/2019	Background	--	--	--	--	--	--	--	--	1.661	--	--	--	--	--	--
6/29/2020	Background	--	--	--	--	--	--	--	--	1.91	--	--	--	--	--	--
4/13/2021	Background	--	--	--	--	--	--	--	--	1.81	--	--	--	--	--	--
6/14/2022	Background	--	--	--	--	--	--	--	--	1.22	--	--	--	--	--	--
2/21/2023	Background	0.48	28.2	12.7	0.027 J1	0.191	1.08	0.326	2.24	1.58	1.31	0.0007	0.033	546	63.4	0.14 J1
3/8/2023	Background	0.5 J1	28.2	13.0	<0.07 U1	0.27	2.1	0.35	1.84	1.58	1.6 J1	0.0015 J1	0.033	524	49.3	<0.4 U1
10/10/2023	Background	--	--	--	--	--	--	--	--	1.48	--	--	--	--	--	--

Table 1. Groundwater Data Summary: MW-3D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
1/25/2017	Background	0.919	111	16	< 1 U1	7.5	174	658
3/14/2017	Background	0.913	120	14	1	--	175	648
4/25/2017	Background	0.972	110	14	0.77 J1	7.9	181	662
5/18/2017	Background	0.789	163	12	< 0.083 U1	--	192	598
6/15/2017	Background	0.873	137	12	0.8472 J1	7.3	225	742
6/27/2017	Background	0.84	194	13	0.7591 J1	7.3	232	766
7/12/2017	Background	0.864	129	13	< 0.083 U1	6.9	210	728
8/4/2017	Background	0.856	135	12	0.7381 J1	6.7	227	710
8/17/2017	Background	0.841	138	23	< 0.083 U1	6.8	213	728
8/30/2017	Background	0.84	136	12	0.7144 J1	6.9	216	696
9/13/2017	Background	0.877	152	11	< 0.083 U1	6.8	212	848
9/20/2017	Background	0.853	139	11	< 0.083 U1	6.9	214	724
10/11/2017	Detection	0.878	134	13	< 0.083 U1	6.9	218	722
5/2/2018	Detection	1.08	127	13	0.757 J1	7.3	196	736
5/30/2018	Detection	0.952	129	13	0.896 J1	7.5	214	724
10/22/2018	Detection	1.02	142	14.89	1.09	7.2	210.57	702
11/28/2018	Detection	0.964	--	--	0.648 J1	8.0	--	--
2/27/2019	Detection	0.973	127	13.2	0.71	7.8	223	700
5/7/2019	Detection	1.56	--	--	--	--	--	--
8/26/2019	Detection	0.979	130	12	0.608 J1	8.5	181	686
12/3/2019	Detection	--	--	--	--	7.4	--	--
6/30/2020	Detection	0.941	116	13.7	0.77	8.6	206	680
7/28/2020	Detection	--	--	--	--	8.3	--	--
10/21/2020	Detection	0.833	120	12.6	0.77	8.7	189	667
12/16/2020	Detection	--	--	--	--	6.9	--	--
4/13/2021	Detection	0.924	114	12.6	0.84	7.4	184	633
12/28/2021	Detection	0.829	114 M1	12.3	0.82	7.1	175	620
6/14/2022	Detection	0.882	124	12.5	0.84	7.2	177	630 L1
11/7/2022	Detection	0.864	121	12.9	0.81	7.2	181	650
6/20/2023	Detection	0.890	103	13.3	0.83	7.2	176	630
10/10/2023	Detection	0.809	113	12.8	0.78	7.6	174	630

Table 1. Groundwater Data Summary: MW-3D
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
1/25/2017	Background	< 5 U1	< 5 U1	111	< 1 U1	< 1 U1	2	< 5 U1	2.153	< 1 U1	< 5 U1	0.017	< 0.025 U1	< 5 U1	< 5 U1	< 2 U1
3/14/2017	Background	< 5 U1	< 5 U1	100	< 1 U1	< 1 U1	< 1 U1	< 5 U1	1.456	1	< 5 U1	0.016	< 0.025 U1	< 5 U1	< 5 U1	< 2 U1
4/25/2017	Background	< 0.93 U1	3.3 J1	89.64	< 0.02 U1	0.26 J1	0.35 J1	1.3 J1	0.419	0.77 J1	< 0.68 U1	0.01508	< 0.005 U1	1.97 J1	< 0.99 U1	< 0.86 U1
5/18/2017	Background	< 0.93 U1	10.64	1,040	0.92 J1	0.61 J1	18.06	5.32	2.443	< 0.083 U1	3.24 J1	0.01943	0.01 J1	4.15 J1	< 0.99 U1	< 0.86 U1
6/15/2017	Background	1.44 J1	1.48 J1	150	0.08 J1	0.22 J1	1.23	1.09 J1	1.706	0.8472 J1	0.83 J1	0.01451	< 0.005 U1	3.04 J1	< 0.99 U1	< 0.86 U1
6/27/2017	Background	< 0.93 U1	< 1.05 U1	97.64	0.09 J1	0.45 J1	4.8	2.69 J1	2.431	0.7591 J1	2.99 J1	0.01836	0.007 J1	79.28	< 0.99 U1	< 0.86 U1
7/12/2017	Background	< 0.93 U1	< 1.05 U1	118	0.05 J1	0.08 J1	0.41 J1	0.82 J1	14.283	< 0.083 U1	< 0.68 U1	0.01435	< 0.005 U1	3.22 J1	< 0.99 U1	< 0.86 U1
8/4/2017	Background	< 0.93 U1	< 1.05 U1	124	0.07 J1	0.21 J1	0.82 J1	0.84 J1	2.242	0.7381 J1	0.8 J1	0.01344	0.013 J1	3.08 J1	< 0.99 U1	< 0.86 U1
8/17/2017	Background	< 0.93 U1	< 1.05 U1	274	0.17 J1	0.24 J1	3.11	1.83 J1	2.328	< 0.083 U1	< 0.68 U1	0.01495	< 0.005 U1	2.91 J1	1 J1	< 0.86 U1
8/30/2017	Background	< 0.93 U1	2.6 J1	244	0.16 J1	0.33 J1	2.36	1.54 J1	2.215	0.7144 J1	< 0.68 U1	0.01465	< 0.005 U1	2.68 J1	< 0.99 U1	< 0.86 U1
9/13/2017	Background	< 0.93 U1	4.52 J1	430	0.35 J1	0.49 J1	6.32	2.97 J1	1.566	< 0.083 U1	1.55 J1	0.01639	< 0.005 U1	2.74 J1	< 0.99 U1	1.02 J1
9/20/2017	Background	1.63 J1	1.14 J1	267	0.17 J1	0.21 J1	2.74	1.41 J1	2.162	< 0.083 U1	< 0.68 U1	0.01508	< 0.005 U1	3.33 J1	< 0.99 U1	< 0.86 U1

Table 1. Groundwater Data Summary: MW-4D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
3/15/2017	Background	--	209	25	< 1 U1	--	237	848
5/2/2018	Background	1.21	192	22	< 0.083 U1	7.1	328	984
5/30/2018	Background	1.27	164	20	0.4188 J1	7.0	279	910
6/27/2018	Background	1.16	177	20	< 0.083 U1	7.9	258	882
7/31/2018	Background	1.04	196	31	< 0.083 U1	7.8	294	856
8/30/2018	Background	1.26	183	--	--	8.1	--	886
9/19/2018	Background	1.13	174	31	< 0.083 U1	7.8	260	884
10/15/2018	Background	0.656	195	37.9	< 0.083 U1	7.6	289.3	846
10/22/2018	Background	--	--	39.8	< 0.083 U1	7.9	306	--
11/28/2018	Background	1.24	193	27	0.3357 J1	7.9	295	972
1/15/2019	Detection	1.16	183	24.6	0.37 J1	7.5	417.6	--
2/27/2019	Detection	1.42	187	31.2	0.30	7.7	463	696
5/7/2019	Detection	--	--	--	--	--	419	--
8/26/2019	Detection	0.987	184	23	0.171 J1	8.1	274	830
6/30/2020	Detection	0.988	176	22.2	0.27	8.4	336	867
10/21/2020	Detection	0.761	163	24.3	0.27	8.4	272	813
4/12/2021	Detection	1.20	195	23.0	0.33	7.3	429	979
6/22/2021	Detection	--	--	--	--	7.1	398	--
12/28/2021	Detection	0.881	167	29.4	0.26	6.9	281	810
6/14/2022	Detection	0.865	161	36.3	0.32	7.1	283	850 L1
11/7/2022	Detection	0.762	181	36.9	0.26	7.2	258	810
6/20/2023	Detection	0.723	154	30.0	0.26	7.2	290	790
10/10/2023	Detection	0.789	166	32.5	0.24	7.1	282	810

Table 1. Groundwater Data Summary: MW-4D
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
3/15/2017	Background	< 5 U1	5	225	< 1 U1	< 1 U1	4	< 5 U1	--	< 1 U1	< 5 U1	--	< 0.025 U1	--	< 5 U1	< 2 U1
5/2/2018	Background	4.05 J1	2.3 J1	171	< 0.02 U1	0.14 J1	1.37	2.36 J1	1.625	< 0.083 U1	1.47 J1	0.00533	< 0.005 U1	6.74	< 0.99 U1	1.19 J1
5/30/2018	Background	< 0.93 U1	< 1.05 U1	173	< 0.02 U1	< 0.07 U1	< 0.23 U1	1.28 J1	1.991	0.4188 J1	< 0.68 U1	0.0033	< 0.005 U1	4.91 J1	< 0.99 U1	2.94
6/27/2018	Background	< 0.93 U1	< 1.05 U1	167	< 0.02 U1	< 0.07 U1	1.93	1.82 J1	1.244	< 0.083 U1	< 0.68 U1	0.00491	< 0.005 U1	4.64 J1	< 0.99 U1	2.94
7/31/2018	Background	0.05	1.25	173	0.01 J1	0.04	< 7 U1	0.521	1.506	< 0.083 U1	0.130	0.00315	< 0.005 U1	4.59	0.2	0.02 J1
8/30/2018	Background	0.1	1.6	163	0.049	0.11	0.551	0.807	0.912	--	0.804	0.00296	0.007 J1	4.48	0.3	0.02 J1
9/19/2018	Background	0.04 J1	1.20	177	0.02 J1	0.03 J1	0.273	0.551	3.91	< 0.083 U1	0.595	0.00289	< 0.005 U1	3.71	0.2	< 0.1 U1
10/15/2018	Background	0.15	2.28	166	0.06 J1	0.16	0.872	0.873	3.056	< 0.083 U1	1.41	0.00336	< 0.005 U1	4.58	0.3	< 0.1 U1
10/22/2018	Background	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
11/28/2018	Background	< 0.1 U1	1.31	171	< 0.1 U1	0.06 J1	0.3 J1	0.677	1.629	0.3357 J1	0.3 J1	0.00378	< 0.005 U1	8 J1	0.2 J1	< 0.5 U1

Table 1. Groundwater Data Summary: MW-5D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
3/14/2017	Background	--	127	--	--	--	--	--
5/2/2018	Background	0.476	132	25	0.703 J1	7.3	126	636
5/30/2018	Background	0.468	136	24	0.711 J1	7.2	113	628
6/27/2018	Background	0.478	134	26	0.7487 J1	8.2	122	658
7/31/2018	Background	0.491	142	30	0.8769 J1	8.3	662	628
8/30/2018	Background	0.52	158	--	--	8.1	--	648
9/19/2018	Background	0.444	156	30	0.7519 J1	7.7	134	662
10/15/2018	Background	0.439	141	30.2	0.845 J1	7.8	138.7	636
10/22/2018	Background	--	--	30.3	0.806 J1	8.0	138	--
11/28/2018	Background	0.612	143	24	0.371 J1	8.1	143	614
1/15/2019	Detection	0.540	157	24	0.316 J1	7.8	127.6	--
2/27/2019	Detection	0.531	130	26.7	0.50	8.5	153	616
5/7/2019	Detection	--	--	--	--	--	158	--
8/26/2019	Detection	0.568	146	24	0.412 J1	9.8	134	670
12/3/2019	Detection	--	--	--	--	7.2	--	--
6/29/2020	Detection	0.508	124	26.7	0.57	8.7	165	641
7/28/2020	Detection	--	--	--	--	8.3	--	--
10/21/2020	Detection	0.469	122	26.3	0.54	8.8	158	655
4/13/2021	Detection	0.539	131	27.3	0.59	7.6	160	632
12/28/2021	Detection	0.458	123	26.9	0.60	7.1	157	590
6/14/2022	Detection	0.479	131	26.5	0.61	7.4	150	620 L1
11/7/2022	Detection	0.445	123	26.3	0.58	7.1	148	610
6/20/2023	Detection	0.444	113	25.9	0.58	7.3	140	620
10/10/2023	Detection	0.419	121	25.2	0.57	7.4	140	580

Table 1. Groundwater Data Summary: MW-5D
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
3/14/2017	Background	< 5 U1	< 5 U1	99	< 1 U1	< 1 U1	< 1 U1	< 5 U1	--	--	< 5 U1	--	< 0.025 U1	--	< 5 U1	< 2 U1
5/2/2018	Background	2.91 J1	1.24 J1	127	< 0.02 U1	0.36 J1	0.59 J1	1.14 J1	2.449	0.703 J1	1.01 J1	0.01243	< 0.005 U1	1.33 J1	1.35 J1	1.25 J1
5/30/2018	Background	< 0.93 U1	< 1.05 U1	139	< 0.02 U1	< 0.07 U1	1.53	1.31 J1	3.06	0.711 J1	1.09 J1	0.01199	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/27/2018	Background	2.5 J1	< 1.05 U1	126	< 0.02 U1	< 0.07 U1	0.8 J1	0.63 J1	2.512	0.7487 J1	< 0.68 U1	0.01208	< 0.005 U1	0.96 J1	< 0.99 U1	2
7/31/2018	Background	0.16	1.27	143	0.103	0.21	0.355	0.482	2.876	0.8769 J1	1.43	0.011	< 0.005 U1	1.21	0.4	0.02 J1
8/30/2018	Background	0.1	0.98	111	0.076	0.1	0.518	0.3	2.906	--	0.706	0.0112	0.006 J1	1.24	0.3	0.04 J1
9/19/2018	Background	0.13	1.18	118	0.08 J1	0.09	0.745	0.336	5.163	0.7519 J1	0.720	0.0107	< 0.005 U1	2 J1	0.4	< 0.1 U1
10/15/2018	Background	0.07 J1	0.99	103	0.07 J1	0.08	0.423	0.289	5.319	0.845 J1	0.379	0.00977	< 0.005 U1	1 J1	0.3	< 0.1 U1
10/22/2018	Background	--	--	--	--	--	--	--	--	0.806 J1	--	--	--	--	--	--
11/28/2018	Background	< 0.1 U1	1.15	113	< 0.1 U1	0.06 J1	0.5 J1	0.324	2.393	0.371 J1	0.4 J1	0.0121	< 0.005 U1	0.2 J1	0.3 J1	< 0.5 U1

Table 1. Groundwater Data Summary: MW-6D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/15/2017	Background	3.51	201	28	0.8054 J1	7.5	508	1,054
6/27/2017	Background	0.877	133	29	0.7596 J1	7.9	524	1,024
7/12/2017	Background	3.49	218	30	< 0.083 U1	7.3	504	1,044
8/4/2017	Background	3.64	222	31	0.7656 J1	6.4	532	1,022
8/17/2017	Background	3.55	211	30	0.729 J1	6.9	509	1,016
8/30/2017	Background	3.41	210	30	0.7158 J1	7.2	522	986
9/13/2017	Background	2.96	237	32	0.5406 J1	7.1	521	1,140
9/20/2017	Background	3.81	196	32	< 0.083 U1	7.1	505	1,008
10/11/2017	Detection	3.74	165	29	0.9597 J1	6.9	545	1,032
1/22/2018	Detection	4.24	--	--	0.76 J1	6.9	494	--
5/2/2018	Detection	3.52	173	31	0.806 J1	7.3	406	1,062
5/30/2018	Detection	3.35	269	32	0.9218 J1	7.4	401	1,090
10/22/2018	Detection	4.34	237	31.68	1.28	7.3	471.81	1,152
11/28/2018	Detection	--	--	--	0.844 J1	7.7	--	--
2/27/2019	Detection	3.63	360	26.9	0.89	7.6	496	1,144
5/7/2019	Detection	--	185	--	--	--	--	1,038
8/26/2019	Detection	2.88	181	13	0.634 J1	8.6	401	1,044
12/3/2019	Detection	--	--	--	--	7.5	--	--
6/30/2020	Detection	3.07	180	24.9	0.76	8.8	533	1,080
7/28/2020	Detection	--	--	--	--	8.4	--	--
10/21/2020	Detection	3.00	170	29.9	0.75	8.7	426	1,060
12/16/2020	Detection	--	--	--	--	7.1	--	--
4/13/2021	Detection	3.35	170	28.4	0.93	8.1	478	1,090
12/28/2021	Detection	2.98	163	27.0	0.93	7.1	469	1,040
6/14/2022	Detection	3.04	203	28.7	1.01	7.3	451	1,090 L1
11/7/2022	Detection	3.00	171	30.2	0.92	7.1	455	1,050
6/20/2023	Detection	2.75	161	28.5	0.88	7.1	466	1,070
10/10/2023	Detection	2.56	168	27.0	0.82	7.6	454	1,030

Table 1. Groundwater Data Summary: MW-6D
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/15/2017	Background	< 0.93 U1	1.99 J1	113	0.18 J1	0.8 J1	5.99	3.73 J1	1.822	0.8054 J1	3.48 J1	0.02203	0.012 J1	85.01	< 0.99 U1	< 0.86 U1
6/27/2017	Background	1.28 J1	< 1.05 U1	170	0.06 J1	0.37 J1	0.86 J1	1.09 J1	1.917	0.7596 J1	0.76 J1	0.01356	< 0.005 U1	2.79 J1	< 0.99 U1	< 0.86 U1
7/12/2017	Background	< 0.93 U1	< 1.05 U1	107	0.22 J1	0.56 J1	6.82	3.82 J1	1.784	< 0.083 U1	5	0.02244	0.007 J1	61.81	< 0.99 U1	< 0.86 U1
8/4/2017	Background	< 0.93 U1	< 1.05 U1	128	0.22 J1	0.93 J1	6.62	3.39 J1	1.115	0.7656 J1	4.96 J1	0.01921	0.016 J1	82.11	< 0.99 U1	< 0.86 U1
8/17/2017	Background	1.26 J1	1.18 J1	99.54	0.19 J1	0.44 J1	6.77	3.07 J1	1.155	0.729 J1	3.25 J1	0.01925	0.011 J1	81.32	< 0.99 U1	< 0.86 U1
8/30/2017	Background	< 0.93 U1	2.06 J1	103	0.22 J1	0.36 J1	6.68	3.03 J1	1.057	0.7158 J1	2.5 J1	0.01829	< 0.005 U1	85.75	< 0.99 U1	< 0.86 U1
9/13/2017	Background	< 0.93 U1	1.19 J1	109	0.31 J1	0.49 J1	8.15	3.71 J1	1.377	0.5406 J1	3.28 J1	0.02105	< 0.005 U1	58	< 0.99 U1	< 0.86 U1
9/20/2017	Background	1.18 J1	1.93 J1	75.04	0.14 J1	0.22 J1	3.86	2.27 J1	1.43	< 0.083 U1	2.33 J1	0.01701	< 0.005 U1	81	< 0.99 U1	< 0.86 U1

Table 1. Groundwater Data Summary: MW-9D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/15/2017	Background	7.09	229	100	0.9857 J1	7.1	781	1,458
6/27/2017	Background	7.01	191	232	0.8986 J1	7.7	876	1,114
7/12/2017	Background	7.63	244	98	2.191	7.4	1,048	2,146
8/4/2017	Background	7.59	337	60	0.6947 J1	7.0	1,217	2,256
8/17/2017	Background	7.46	328	216	0.681 J1	7.1	1,193	2,486
8/30/2017	Background	6.93	354	64	< 0.083 U1	7.3	1,192	2,392
9/13/2017	Background	6.78	366	293	0.37 J1	7.2	1,244	2,826
10/4/2017	Background	6.68	304	180	< 0.083 U1	7.3	1,079	2,296
10/11/2017	Detection	7.07	288	314	1.5191	7.1	1,075	2,188
1/22/2018	Detection	7.43	--	--	--	7.1	--	--
10/22/2018	Detection	7.19	199	106	0.6 J1	7.1	519.42	1,258
2/27/2019	Detection	6.49	155	28.9	0.89	7.6	555	1,174
8/26/2019	Detection	6.95	136	24	0.758 J1	8.8	526	1,084
12/3/2019	Detection	--	--	--	--	7.6	--	--
6/30/2020	Detection	6.51	128	26.2	0.95	10.9	602	1,070
7/28/2020	Detection	--	--	--	--	8.7	--	--
10/21/2020	Detection	6.12	129	25.3	0.97	8.9	547	1,160
12/16/2020	Detection	--	--	--	--	7.5	--	--
4/13/2021	Detection	6.70	158	26.1	0.99	8.2	594	1,180
6/22/2021	Detection	--	--	--	--	7.6	--	--
6/14/2022	Detection	6.19	196	25.9	0.93	7.3	775	1,560 L1
8/15/2022	Detection	--	--	--	--	7.2	--	1,250
11/7/2022	Detection	6.11	160	26.2	0.92	8.5	624	1,270
12/12/2022	Detection	--	--	--	--	7.6	--	--
1/23/2023	Detection	--	--	--	--	7.2	--	--
6/20/2023	Detection	6.12 M1	204 M1	--	--	7.2	--	--
10/10/2023	Detection	5.87	186	25.5	0.80	8.3	783	1,570
12/28/2023	Detection	--	--	--	--	7.4	--	1,210

Table 1. Groundwater Data Summary: MW-9D
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/15/2017	Background	< 0.93 U1	< 1.05 U1	188	0.32 J1	0.81 J1	12.34	6.18	0.931	0.9857 J1	7.02	0.02386	0.009 J1	173	5	< 0.86 U1
6/27/2017	Background	< 0.93 U1	< 1.05 U1	58.15	< 0.02 U1	0.26 J1	0.89 J1	7.14	--	0.8986 J1	1.24 J1	0.01647	< 0.005 U1	166	< 0.99 U1	< 0.86 U1
7/12/2017	Background	< 0.93 U1	< 1.05 U1	69.89	0.05 J1	< 0.07 U1	4.09	5.69	--	2.191	2.36 J1	0.02221	< 0.005 U1	151	1.32 J1	< 0.86 U1
8/4/2017	Background	< 0.93 U1	< 1.05 U1	132	0.17 J1	0.54 J1	7.15	7.34	--	0.6947 J1	4.26 J1	0.02155	0.017 J1	117	3.57 J1	< 0.86 U1
8/17/2017	Background	< 0.93 U1	< 1.05 U1	196	0.22 J1	0.25 J1	9.52	8.17	--	0.681 J1	5.33	0.02401	0.011 J1	98.19	3.53 J1	< 0.86 U1
8/30/2017	Background	< 0.93 U1	< 1.05 U1	323	0.37 J1	0.91 J1	20.06	15.08	--	< 0.083 U1	9.27	0.02964	0.016 J1	93.84	2.94 J1	< 0.86 U1
9/13/2017	Background	< 0.93 U1	< 1.05 U1	399	0.4 J1	0.68 J1	13.34	12.88	--	0.37 J1	8.28	0.03257	0.016 J1	78.39	2.8 J1	< 0.86 U1
10/4/2017	Background	< 0.93 U1	< 1.05 U1	410	0.43 J1	2.4	14.79	8.38	--	< 0.083 U1	9.69	0.03222	0.015 J1	73.77	3.83 J1	< 0.86 U1
12/12/2022	Background	--	--	--	--	--	--	--	1.93	--	--	--	--	--	--	--

Table 1. Groundwater Data Summary: MW-10D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/30/2018	Background	1.15	54.9	--	--	7.5	--	--
6/27/2018	Background	1.16	52.5	--	--	--	--	--
1/24/2023	Background	1.18	89.7	--	--	7.5	--	--

Table 1. Groundwater Data Summary: MW-10D
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/30/2018	Background	2.47 J1	< 1.05 U1	102	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.61 J1	--	--	< 0.68 U1	0.451	< 0.005 U1	19.72	7.02	< 0.86 U1
6/27/2018	Background	1.74 J1	1.59 J1	131	< 0.02 U1	< 0.07 U1	< 0.23 U1	1.01 J1	--	--	< 0.68 U1	0.461	< 0.005 U1	16.2	5.03	< 0.86 U1
1/24/2023	Background	0.63	4.87	150	0.150	0.152	32.2	1.32	--	--	0.7 J1	0.362	<0.0018 U1	20.0	7.71	< 0.4 U1

Table 1. Groundwater Data Summary: MW-11D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/30/2018	Background	0.641	114	--	--	7.3	--	--

Table 1. Groundwater Data Summary: MW-11D
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/30/2018	Background	< 0.93 U1	1.77 J1	55.76	< 0.02 U1	< 0.07 U1	2.1	0.43 J1	--	--	< 0.68 U1	0.03979	< 0.005 U1	12.14	< 0.99 U1	1.8 J1

Table 1. Groundwater Data Summary: MW-12D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
3/15/2017	Background	--	76.9	16	2	--	613	1,142
5/2/2018	Background	8.63	184	17	2.199	7.4	541	1,044
5/30/2018	Background	8.35	89.9	91	2.379	7.7	542	1,088
6/27/2018	Background	8.45	74.9	17	1.988	8.2	586	1,070
7/31/2018	Background	8.72	108	22	2.6173	8.7	662	1,034
8/30/2018	Background	9.71	141	--	--	9.2	--	1,050
9/19/2018	Background	9.02	110	21	2.8416	8.1	582	1,052
10/15/2018	Background	8.68	70.0	21	2.99	9.4	561.2	1,060
10/22/2018	Background	--	--	19.44	2.8	9.0	504.3	--
11/28/2018	Background	9.69	103	16	2.2238	8.9	570	1,068
1/15/2019	Detection	9.08	68.0	14.6	2.028	8.1	437.4	--
2/27/2019	Detection	8.88	64.7	16.8	2.11	8.5	564	1,014
8/26/2019	Detection	8.90	96.3	14	1.6	8.7	540	1,018
6/29/2020	Detection	8.04	82.2	15.0	1.92	8.8	602	945
10/20/2020	Detection	7.19	118	16.1	2.06	9.1	585	1,060
4/13/2021	Detection	7.96	79.0	16.1	2.00	8.4	590	1,030
12/27/2021	Detection	6.38	80.7	12.1	1.90	8.3	498	920
6/14/2022	Detection	6.89	68.3	13.4	1.88	8.1	511	940 L1
11/8/2022	Detection	7.11	61.2	13.1	1.93	8.5	507	920
6/20/2023	Detection	6.60	63.5	13.4	1.80	8.3	522	910
10/10/2023	Detection	6.33	59.1	12.5	1.74	8.1	489	850

Table 1. Groundwater Data Summary: MW-12D
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
3/15/2017	Background	< 5 U1	< 5 U1	31	< 1 U1	< 1 U1	< 1 U1	< 5 U1	--	2	< 5 U1	--	< 0.025 U1	--	< 5 U1	< 2 U1
5/2/2018	Background	< 0.93 U1	1.56 J1	121	0.13 J1	0.8 J1	7.95	3.52 J1	1.625	2.199	7.03	0.00841	0.013 J1	693	4.5 J1	< 0.86 U1
5/30/2018	Background	< 0.93 U1	1.24 J1	77.75	< 0.02 U1	0.25 J1	2.74	1.49 J1	1.213	2.379	3.04 J1	0.00608	< 0.005 U1	667	3.88 J1	2.2
6/27/2018	Background	< 0.93 U1	< 1.05 U1	36.18	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.39 J1	1.331	1.988	< 0.68 U1	0.00541	< 0.005 U1	666	1.55 J1	1.99 J1
7/31/2018	Background	0.11	3.00	42.0	0.053	0.07	0.414	0.674	0.721	2.6173	2.32	0.006	< 0.005 U1	818	1.7	0.106
8/30/2018	Background	0.2	3.39	65.8	0.097	0.31	1.82	2.17	3.137	--	5.43	0.00396	< 0.005 U1	872	3.1	0.241
9/19/2018	Background	0.36	4.67	82.6	0.1 J1	0.33	2.03	1.57	4.417	2.8416	5.18	0.00410	0.012 J1	828	2.9	0.2 J1
10/15/2018	Background	0.43	6.46	50.2	0.06 J1	0.20	1.60	1.31	3.541	2.99	3.51	0.00308	0.007 J1	774	4.6	0.3 J1
10/22/2018	Background	--	--	--	--	--	--	--	--	2.8	--	--	--	--	--	--
11/28/2018	Background	0.3 J1	3.99	71.7	0.1 J1	0.33	1.70	0.989	1.486	2.2238	4.12	0.00483	0.007 J1	744	1.9	< 0.5 U1

Table 1. Groundwater Data Summary: MW-13D
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
3/15/2017	Background	--	203	7	< 1 U1	7.5	402	1,116
5/2/2018	Background	1.08	172	5	< 0.083 U1	7.1	354	1,064
5/30/2018	Background	0.864	171	6	0.4361 J1	6.9	343	1,068
6/27/2018	Background	1.35	212	--	--	7.3	--	--
6/29/2020	Background	0.954	188	4.68	0.32	8.3	476	1,100
4/13/2021	Background	1.39	192	5.83	0.46	7.7	519	1,170
12/27/2021	Background	0.832	184	4.82	0.38	7.0	435	1,120
6/14/2022	Background	0.742	167	4.36	0.37	7.3	341	990 L1
11/8/2022	Background	0.752	181	4.41	0.34	7.0	397	1,060
12/12/2022	Background	1.08	199	--	--	7.2	--	--
3/8/2023	Background	1.39	245	--	--	7.0	--	--
6/20/2023	Background	1.74	197	10.8	0.45	7.1	606	1,290

Table 1. Groundwater Data Summary: MW-13D
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
3/15/2017	Background	< 5 U1	< 5 U1	64	< 1 U1	< 1 U1	2	< 5 U1	--	< 1 U1	< 5 U1	--	< 0.025 U1	--	< 5 U1	< 2 U1
5/2/2018	Background	< 0.93 U1	< 1.05 U1	48.84	< 0.02 U1	0.13 J1	0.8 J1	1.61 J1	3.214	< 0.083 U1	< 0.68 U1	0.02997	< 0.005 U1	12.38	11.93	< 0.86 U1
5/30/2018	Background	< 0.93 U1	< 1.05 U1	76.07	0.03 J1	< 0.07 U1	1.48	4.37 J1	4.03	0.4361 J1	< 0.68 U1	0.03287	< 0.005 U1	13.07	11.96	< 0.86 U1
6/27/2018	Background	< 0.93 U1	1.13 J1	119	0.12 J1	< 0.07 U1	3.74	4.96 J1	--	--	1.84 J1	0.02781	< 0.005 U1	24.56	10.11	< 0.86 U1
6/29/2020	Background	--	--	--	--	--	--	--	--	0.32	--	--	--	--	--	--
4/13/2021	Background	--	--	--	--	--	--	--	--	0.46	--	--	--	--	--	--
12/27/2021	Background	--	--	--	--	--	--	--	--	0.38	--	0.0233	--	--	--	--
6/14/2022	Background	--	--	--	--	--	--	--	--	0.37	--	--	--	--	--	--
11/8/2022	Background	0.35	1.21	57.6	0.12 J1	0.088	1.43	2.15	--	0.34	0.83	0.0276	--	8.9	8.69	0.05 J1
12/12/2022	Background	0.21	1.37	114	0.118	0.143	1.92	1.91	--	--	1.44	0.0242	< 0.002 U1	11.6	6.11	0.05 J1
3/8/2023	Background	0.47	2.63	131	0.244	0.286	4.05	2.59	--	--	3.51	0.022	0.002 J1	15.5	10.5	0.05 J1
6/20/2023	Background	0.234	0.81	47.9	0.095	0.115	1.18	1.18	--	0.45	0.93	0.0208	<0.002 U1	15.4	4.84	0.03 J1

Table 1. Groundwater Data Summary: MW-14
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/30/2018	Background	1.47	77.1	--	--	6.7	--	--
6/27/2018	Background	1.56	71	--	--	--	--	--
7/31/2018	Background	1.50	68.0	--	--	7.4	--	--
8/30/2018	Background	2.09	181	--	--	7.8	--	--
8/26/2019	Background	1.69	110	3,117	3.066	8.6	357	6,198
6/30/2020	Background	1.36	60.8	2,980	3.97	8.5	189	5,370
10/21/2020	Background	1.39	64.3	2,830	4.22	8.6	226	11,900
12/28/2021	Background	1.20	58.2	2,920	4.5	7.2	278	5,890
11/7/2022	Background	1.29	100 M1	2,870	4.9	7.2	214	5,600
12/12/2022	Background	1.23	75.3	--	--	7.3	--	--
1/24/2023	Background	1.16	129	--	--	7.5	--	--
3/8/2023	Background	1.31	50.5	2,710	4.7	8.1	255	5,390
4/10/2023	Background	1.55	106	--	--	7.4	--	--
10/10/2023	Background	1.42	122	2,880	4.2	7.4	346	5,840

Table 1. Groundwater Data Summary: MW-14
Northeastern - LF
Appendix B Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/30/2018	Background	0.93 J1	1.15 J1	157	< 0.02 U1	< 0.07 U1	< 0.23 U1	3.29 J1	--	--	< 0.68 U1	0.361	0.009 J1	20.67	5.51	< 0.86 U1
6/27/2018	Background	< 0.93 U1	< 1.05 U1	161	< 0.02 U1	< 0.07 U1	< 0.23 U1	3.14 J1	--	--	< 0.68 U1	0.378	0.006 J1	20.16	4.35 J1	42
7/31/2018	Background	1.35	0.58	172	0.029	0.18	< 7 U1	2.63	--	--	0.037	0.362	0.008 J1	27.8	3.5	0.05 J1
8/30/2018	Background	1.61	0.57	153	0.034	0.21	0.286	1.71	--	--	1.06	0.38	< 0.005 U1	31.7	2.2	0.03 J1
8/26/2019	Background	--	--	--	--	--	--	--	--	3.066	--	--	--	--	--	--
6/30/2020	Background	--	--	--	--	--	--	--	--	3.97	--	--	--	--	--	--
10/21/2020	Background	--	--	--	--	--	--	--	--	4.22	--	--	--	--	--	--
12/28/2021	Background	--	--	--	--	--	--	--	--	4.5	--	0.268	--	--	--	--
11/8/2022	Background	0.81	0.95	353 M1	0.053	0.165	4.61	2.08	--	4.9	1.12	0.322	--	12.9	0.72	< 0.04 U1
12/12/2022	Background	0.84	1.14	283	0.029 J1	0.163	1.80	3.28	--	--	0.58	0.265	0.002 J1	14.1	1.34	< 0.04 U1
1/24/2023	Background	1.2	2.9	644	0.34 J1	6.49	29.9	5.64	--	--	6.6	0.297	0.008 J1	13	2.0 J1	<0.4 U1
3/8/2023	Background	1.1	2.9	854	0.22 J1	0.22	33.3	2.17	--	4.7	5.1	0.335	0.003 J1	14	2.0 J1	<0.4 U1
4/10/2023	Background	2.26	2.2	861	0.19 J1	0.19 J1	25	2.01	--	--	6.6	0.312	0.006	30	4.0 J1	<0.2 U1
10/10/2023	Background	--	--	--	--	--	--	--	--	4.2	--	--	--	--	--	--

Table 1. Groundwater Data Summary: MW-15
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
1/25/2017	Background	9.45	87	19	2	8.0	530	1,112
3/13/2017	Background	8.23	104	28	2	--	551	1,110
4/25/2017	Background	9.44	73.1	78	1.83	7.6	558	1,128
5/18/2017	Background	10.2	52.2	111	2	--	596	1,092
6/15/2017	Background	9.74	126	24	1.96	7.9	559	1,060
6/27/2017	Background	9.75	79.2	22	1.8739	8.5	616	1,072
7/12/2017	Background	9.87	110	19	1.894	8.2	632	1,076
8/4/2017	Background	9.66	86.3	19	1.759	7.6	612	1,032
8/17/2017	Background	9.53	93.1	18	1.691	7.8	572	1,110
8/30/2017	Background	9.59	64.9	17	2.0289	6.7	590	1,038
9/13/2017	Background	9.13	68	17	1.671	8.6	584	1,080
9/20/2017	Background	9.65	67.6	15	0.642 J1	7.5	543	1,036
10/11/2017	Detection	9.62	80.1	46	1.9468	7.6	593	1,124
1/22/2018	Detection	9.16	--	--	--	7.2	--	--
5/30/2018	Detection	8.76	105	33	2.331	7.7	549	1,128
10/15/2018	Detection	--	--	--	2.27	--	--	--
10/22/2018	Detection	8.90	250	46.81	2.17	7.8	549.46	1,082
11/28/2018	Detection	--	119	--	--	8.3	--	--
2/27/2019	Detection	8.34	96.9	24.3	1.45	8.6	574	1,046
8/26/2019	Detection	8.28	119	20	1.252	10.5	587	1,072
12/3/2019	Detection	--	--	--	--	7.7	--	--
6/30/2020	Detection	8.00	105	17.9	1.55	9.3	706	1,100
7/28/2020	Detection	--	--	--	--	9.0	--	--
10/21/2020	Detection	7.79	117	15.7	1.53	11.0	631	1,140
12/16/2020	Detection	--	--	--	--	7.8	--	--
4/13/2021	Detection	8.40	93.5	15.5	1.71	8.8	659	1,100
6/22/2021	Detection	--	--	--	--	7.8	662	--
12/28/2021	Detection	7.28	123	15.9	1.49	7.5	631	1,090
6/14/2022	Detection	8.71	85.5	15.3	1.71	8.7	643	1,080 L1, S7
11/7/2022	Detection	7.08	122	17.0	1.32	7.9	628	1,090
6/20/2023	Detection	6.96	129	16.3	1.42	8.0	635	1,080
10/10/2023	Detection	6.61	122	15.7	1.28	8.0	619	1,080

Table 1. Groundwater Data Summary: MW-15
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
1/25/2017	Background	< 5 U1	< 5 U1	107	< 1 U1	< 1 U1	3	< 5 U1	0.505	2	< 5 U1	0.012	< 0.025 U1	643	< 5 U1	< 2 U1
3/13/2017	Background	< 5 U1	< 5 U1	100	< 1 U1	< 1 U1	3	< 5 U1	1.241	2	< 5 U1	0.01	< 0.025 U1	550	< 5 U1	< 2 U1
4/25/2017	Background	1.31 J1	2.85 J1	55.73	< 0.02 U1	< 0.07 U1	0.23 J1	0.64 J1	0.203	1.83	< 0.68 U1	0.00786	< 0.005 U1	614	1.83 J1	1.05 J1
5/18/2017	Background	1.38 J1	13.61	52.06	< 0.02 U1	0.26 J1	0.96 J1	0.62 J1	1.097	2	1.7 J1	0.00834	0.022 J1	605	22.28	< 0.86 U1
6/15/2017	Background	< 0.93 U1	7.56	212	0.25 J1	0.64 J1	8.57	3.96 J1	1.215	1.96	5.25	0.01148	0.02 J1	662	12.46	< 0.86 U1
6/27/2017	Background	< 0.93 U1	4.4 J1	98.67	0.02 J1	< 0.07 U1	1.79	1.29 J1	1.652	1.8739	2.42 J1	0.00722	0.022 J1	644	5.76	< 0.86 U1
7/12/2017	Background	1.63 J1	3.77 J1	150	0.12 J1	0.09 J1	4.03	2.64 J1	0.287	1.894	2.87 J1	0.0091	0.009 J1	668	9	< 0.86 U1
8/4/2017	Background	1.56 J1	3.73 J1	94.19	0.08 J1	0.09 J1	1.51	1.4 J1	0.914	1.759	1.36 J1	0.00752	0.021 J1	647	6	< 0.86 U1
8/17/2017	Background	0.99 J1	4.44 J1	133	0.09 J1	< 0.07 U1	3.3	1.69 J1	0.649	1.691	1.44 J1	0.00823	0.015 J1	642	5.95	< 0.86 U1
8/30/2017	Background	< 0.93 U1	6.32	64.87	0.04 J1	< 0.07 U1	0.86 J1	0.78 J1	0.393	2.0289	< 0.68 U1	0.00629	0.01 J1	656	9.24	< 0.86 U1
9/13/2017	Background	< 0.93 U1	4.18 J1	54.34	0.03 J1	< 0.07 U1	< 0.23 U1	0.66 J1	1.07	1.671	< 0.68 U1	0.00635	0.008 J1	638	1.45 J1	< 0.86 U1
9/20/2017	Background	< 0.93 U1	3.87 J1	49.23	< 0.02 U1	< 0.07 U1	0.23 J1	0.77 J1	0.887	0.642 J1	< 0.68 U1	0.00621	< 0.005 U1	652	3.77 J1	< 0.86 U1

Table 1. Groundwater Data Summary: MW-16
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/18/2017	Background	4.77	338	62	< 0.083 U1	--	499	1,314
6/15/2017	Background	4.1	154	56	0.879 J1	8.5	467	1,328
8/17/2017	Background	6.48	201	36	0.84 J1	7.2	745	1,856

Table 1. Groundwater Data Summary: MW-16
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/18/2017	Background	< 0.93 U1	6.8	494	1.01	2.94	36.5	15.32	0.969	< 0.083 U1	16.64	0.05597	0.032	198	10.98	< 0.86 U1
6/15/2017	Background	< 0.93 U1	< 1.05 U1	83.73	0.07 J1	< 0.07 U1	2.51	2.43 J1	1.258	0.879 J1	1.44 J1	0.02944	0.007 J1	212	3.86 J1	< 0.86 U1
8/17/2017	Background	< 0.93 U1	< 1.05 U1	139	0.16 J1	0.41 J1	7.64	5.26	0.653	0.84 J1	3.4 J1	0.04163	0.012 J1	204	14.41	< 0.86 U1

Table 1. Groundwater Data Summary: MW-17
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
1/25/2017	Background	--	--	--	--	7.8	--	--
6/27/2017	Background	1.13	894	38	0.9268 J1	7.5	820	1,592
8/17/2017	Background	1.2	789	28	0.699 J1	7.4	1,078	2,046
5/30/2018	Assessment	0.702	191	--	--	8.0	--	--
6/27/2018	Assessment	0.715	205	--	--	--	--	--
7/31/2018	Assessment	0.843	234	--	--	8.6	--	--
9/19/2018	Assessment	0.767	330	--	--	7.9	--	--
11/7/2022	Detection	1	231	11.3	0.89	7.0	440	1,010
2/21/2023	Detection	1.2	469	11.7	0.68	7.3	764	1,500 S7

Table 1. Groundwater Data Summary: MW-17
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/27/2017	Background	< 0.93 U1	20.5	975	2.77	6.77	74.59	47.64	0.9268 J1	76.11	0.06776	0.144	30.24	19.31	< 0.86 U1
8/17/2017	Background	< 0.93 U1	18.23	763	2.66	3.88	91.46	47.25	0.699 J1	56.22	0.07669	0.097	29.04	17.5	< 0.86 U1
5/30/2018	Assessment	1.61 J1	< 1.05 U1	40.12	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.31 J1	--	< 0.68 U1	0.01139	< 0.005 U1	8.38	26.7	< 0.86 U1
6/27/2018	Assessment	2.57 J1	< 1.05 U1	41.52	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.75 J1	--	< 0.68 U1	0.01282	< 0.005 U1	7.94	12.46	1.63 J1
7/31/2018	Assessment	0.28	0.28	39.5	0.005 J1	0.10	< 0.007 U1	1.84	--	0.056	0.017	< 0.005 U1	8.66	5.4	0.057
9/19/2018	Assessment	0.20	0.27	36.7	< 0.02 U1	0.07	< 0.04 U1	2.98	--	0.06 J1	0.0121	< 0.005 U1	9.62	4.4	< 0.1 U1

Table 1. Groundwater Data Summary: MW-18
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
11/7/2022	Background	0.91	547	8,060	0.9 J1	7.0	311	13,700 S1
12/12/2022	Background	1.34	490	9,850	0.9	6.8	275	16,400
1/23/2023	Background	1.06	642	11,500	0.9	6.7	242	18,600 L1
2/21/2023	Background	1.16	642	13,200	1	6.8	213	20,600
3/8/2023	Background	1.08	141	--	--	6.9	--	--
4/10/2023	Background	1.21	847	--	--	6.8	--	--
5/16/2023	Background	1.11	531	15,200	1.1 J1	6.7	174	23,600
6/20/2023	Background	1.22	585	--	--	6.8	--	--
10/10/2023	Background	1.37 M1	1,120 M1	16,600	1.6	6.8	114	25,900

Table 1. Groundwater Data Summary: MW-18
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
11/7/2022	Background	0.3 J1	14.2	1,600	1.90	0.56	56.4	14.0	2.43	0.9 J1	31.8	0.752	0.300	7	5.2	0.8 J1
12/12/2022	Background	0.4 J1	10.9	1,700	1.33	0.51	48.3	10.4	5.15	0.9	23.2	0.916	0.130	11	4.7 J1	0.7 J1
1/23/2023	Background	0.5 J1	2.1	1390	0.24 J1	0.40	10	6.46	--	0.9	3.3	1.1	0.012	9	2.0 J1	0.6 J1
2/21/2023	Background	0.6 J1	2.6	1860	0.31 J1	0.48	17.6	7.54	--	1.0	4.1	1.3	<0.02 U1	10	2.4 J1	0.5 J1
3/8/2023	Background	0.6 J1	4.3	1840	0.58	0.50	27	9.3	--	--	9.5	1.42	0.07	9	2.8 J1	0.5 J1
4/10/2023	Background	0.43 J1	1.5	1820	0.12 J1	0.53	5.6	6.23	--	--	2.0	1.26	0.029 J1	8	2.2 J1	0.4 J1
5/16/2023	Background	0.39 J1	0.6 J1	1710	0.07 J1	0.52	2.7 J1	4.55	--	1.1 J1	0.6 J1	1.42	0.018	7	1.1 J1	0.3 J1
6/20/2023	Background	0.38 J1	0.5 J1	2130	<0.07 U1	0.64	1.9 J1	4.3	--	--	<0.5 U1	1.45	<0.018 U1	7	0.8 J1	0.3 J1
10/10/2023	Background	--	--	--	--	--	--	--	--	1.6	--	--	--	--	--	--

Table 1. Groundwater Data Summary: MW-19
Northeastern - LF
Appendix A Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
11/7/2022	Background	1.4 J1	640	13,400	2.3	7.1	21	21,300 S1
12/12/2022	Background	2.7	664	14,900	2.4	7.1	10	22,700
1/23/2023	Background	1.4 J1	581	15,100	2.5	7.0	6 J1	23,000 L1
2/21/2023	Background	1.3 J1	473	15,600	2.6	7.0	11	23,100
3/8/2023	Background	1.1 J1	87 M1	15,600	2.8	7.3	13	22,700 S7
4/10/2023	Background	1.4 J1	805	15,400	2.8	7.1	12 J1	23,100
5/16/2023	Background	1.3 J1	552 M1	15,400	2.9	7.0	13 J1	23,100
6/20/2023	Background	1.4 J1	502	--	--	7.1	--	--
10/10/2023	Background	1.22	642	18,100	3.0	7.3	9 J1	23,100

Table 1. Groundwater Data Summary: MW-19
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
11/7/2022	Background	< 1 U1	< 2 U1	13,500	< 0.4 U1	< 0.2 U1	< 2 U1	2.1	2.31	2.3	< 3 U1	1.57	< 0.007 U1	23 J1	< 5 U1	< 0.2 U1
12/12/2022	Background	< 1 U1	4 J1	20,300	< 0.4 U1	< 0.2 U1	3 J1	4.6	4.1	2.4	< 3 U1	1.59	< 0.002 U1	16 J1	< 5 U1	< 0.2 U1
1/23/2023	Background	< 1 U1	< 2 U1	66200	< 0.4 U1	< 0.2 U1	< 2 U1	0.5 J1	4.86 R2	2.5	< 3 U1	1.63	< 0.002 U1	< 5 U1	< 5 U1	< 2 U1
2/21/2023	Background	< 1 U1	< 2 U1	88200	< 0.4 U1	< 0.2 U1	< 2 U1	0.3 J1	12.14 R2	2.6	< 0.5 U1	1.71	< 0.007 U1	< 5 U1	< 5 U1	< 0.06 U1
3/9/2023	Background	< 1 U1	2 J1	86500 M1	< 0.4 U1	< 0.2 U1	7 J1	0.5 J1	5.99 R2	2.8	< 3 U1	1.75 M1	< 0.002 U1	< 5 U1	< 5 U1, M1	< 2 U1
4/10/2023	Background	< 0.4 U1	3 J1	85,400	< 0.4 U1	< 0.2 U1	< 4 U1	< 0.3 U1	5.06 R2, J1	2.8	< 3 U1	1.62	< 0.002 U1	< 5 U1	< 2 U1	< 1 U1
5/16/2023	Background	< 0.4 U1	2 J1	92700 M1	< 0.4 U1	< 0.2 U1	< 4 U1	< 0.3 U1	4.52 R2, J1	2.9	< 3 U1	1.57 M1	< 0.002 U1	< 5 U1	< 2 U1, M1	< 1 U1
6/20/2023	Background	< 0.4 U1	1.7 J1	89200	< 0.35 U1	< 0.2 U1	5 J1	< 0.25 U1	22.64 R2, J1	--	< 2.5 U1	1.68	< 0.0018 U1	< 5 U1	< 2 U1	< 0.1 U1
10/10/2023	Background	--	--	--	--	--	--	--	--	3.0	--	--	--	--	--	--

Notes:
- -: Not analyzed
<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.
In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
S1: Residue weight is above or below the method criteria and needs to be re-analyzed at a different dilution.
S7: Sample did not achieve constant weight.
R2: Radium-226 carrier recovery outside of acceptance limits.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
mg/L: milligrams per liter
pCi/L: picocuries per liter
SU: standard unit
µg/L: micrograms per liter

APPENDIX 2

Where applicable, shown in this appendix are the results from statistical analyses, and a description of the statistical analysis method chosen.

Geosyntec consultants

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Memorandum

Date:	January 16, 2024
To:	Rebecca Jones (AEP)
Copies to:	Brian Newton (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Evaluation of 2023 Reissued Analytical Laboratory Data for Northeastern Power Station's Landfill

In accordance with Oklahoma Department of Environmental Quality (ODEQ) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (Oklahoma Administrative Code [OAC] 252:517) sampling was completed in 2023 to support groundwater monitoring at the Landfill, an existing CCR unit at the Northeastern Power Station in Oologah, Oklahoma. Following transmittal of groundwater analytical data to ODEQ for proposed background locations MW-18 and MW-19[1], select analytical laboratory reports were reissued to correct an inconsistent number of significant figures in electronic data deliverables and the published laboratory reports.

A review of the reissued analytical laboratory reports found that the mercury results of 70 nanograms per liter (ng/L) reported for the March 8, 2023 sample at background location MW-18 had the number of significant figures changed, resulting in a revised value of 71 ng/L. Similarly, the mercury result of 30 ng/L reported for the April 10, 2023 sample at background location MW-18 had the number of significant figures changed, resulting in a revised value of 29 ng/L. The Landfill is currently in detection monitoring, so these mercury results were not used in any statistical evaluations in 2023 and no further revisions are required.

The revised mercury values in the reissued laboratory analytical reports will be used in future reporting and statistical evaluations.

[1] AEP, 2023. *Letter transmittal: Response to Background Wells Landfill; 2023 Annual Groundwater Monitoring Report. Public Service Company of Oklahoma – Northeastern Power Station Ash Landfill. Rogers County. Solid Waste Permit No. 3566010.* August 31, 2023.

Geosyntec consultants

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Memorandum

Date:	February 17, 2023
To:	David Miller (AEP)
Copies to:	Jill Parker-Witt (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Evaluation of Detection Monitoring Data at Northeastern Plant's Landfill (LF)

The second semiannual detection monitoring event of 2022 at the Landfill (LF), an existing CCR unit at the Northeastern Power Plant located in Oologah, Oklahoma, was completed on November 7, 2022 in accordance with Oklahoma Department of Environmental Quality rules regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (OAC 252.517). Based on these results, verification sampling was completed on December 12, 2022.

Background values for the LF were previously calculated for wells MW-3D, MW-6D, MW-9D, MW-12D, and MW-15 in January 2018. Background values for wells MW-4D, MW-5D, and MW-12D were previously calculated in July 2019. After a minimum of four detection monitoring events, the results of those events were compared to the existing background dataset, and the background dataset was updated as appropriate. Revised upper prediction limits (UPLs) were calculated for each Appendix A parameter to represent background values. Lower prediction limits (LPLs) were also calculated for pH. Details on the calculation of the most recent revision to background values are described in Geosyntec's *Statistical Analysis Summary – Background Update Calculations* report, dated December 28, 2021.

To achieve an acceptably high statistical power while maintaining a site-wide false-positive rate (SWFPR) of 10% per year or less, prediction limits were calculated based on a one-of-two retesting procedure. With this procedure, a statistically significant increase (SSI) is only concluded if both samples in a series of two exceeds the UPL. In practice, if the initial result did not exceed the UPL, a second sample was not collected or analyzed.

Detection monitoring results and the relevant background values are compared in Table 1. No SSIs were observed at the Northeastern LF CCR unit, and as a result the Northeastern LF will remain in detection monitoring.

The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with OAC 252:517-9-4(h)(6). A certification of these statistics by a qualified professional engineer is provided in Attachment A.

Table 1: Detection Monitoring Data Comparison
Northeastern Plant - Landfill

Geosyntec Consultants

Analyte	Unit	Description	MW-3D	MW-4D	MW-5D	MW-6D	MW-9D		MW-12D	MW-15
			11/7/2022	11/7/2022	11/7/2022	11/7/2022	11/7/2022	12/12/2022	11/7/2022	11/7/2022
Boron	mg/L	Intrawell Background Value (UPL)	1.06	1.59	0.621	4.52	7.94		10.2	10.6
		Analytical Result	0.864	0.762	0.445	3.00	6.11	--	7.11	7.08
Calcium	mg/L	Intrawell Background Value (UPL)	175	214	166	272	295		172	137
		Analytical Result	121	181	123	171	160	--	61.2	122
Chloride	mg/L	Intrawell Background Value (UPL)	15.5	41.0	32.6	34.1	147		23.3	111
		Analytical Result	12.9	36.9	26.3	30.2	26.2	--	13.1	17.0
Fluoride	mg/L	Intrawell Background Value (UPL)	1.02	0.500	1.05	1.18	2.03		3.16	2.59
		Analytical Result	0.81	0.26	0.58	0.92	0.92	--	1.93	1.32
pH	SU	Intrawell Background Value (UPL)	8.2	8.7	9.5	8.1	7.7		9.8	9.3
		Intrawell Background Value (LPL)	6.3	6.7	6.6	6.3	6.8		7.2	6.7
		Analytical Result	7.2	7.2	7.1	7.1	**8.5**	7.6	8.5	7.9
Sulfate	mg/L	Intrawell Background Value (UPL)	243	485	178	581	1,010		683	690
		Analytical Result	181	258	148	455	624	--	507	628
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	815	1,050	682	1,170	1,550		1,150	1,160
		Analytical Result	650	810	610	1,050	1,270	--	920	1,090

Notes:
UPL: Upper prediction limit
LPL: Lower prediction limit
Bold values exceed the background value.
Background values are shaded gray.

ATTACHMENT A

Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected statistical method, described above and in the December 28, 2021 *Statistical Analysis Summary – Background Update Calculations* report, is appropriate for evaluating the groundwater monitoring data for the Northeastern LF CCR management area and that the requirements of OAC 252:517-9-4(g) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

26057	Oklahoma	02.17.2023
License Number	Licensing State	Date

Geosyntec consultants

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Memorandum

Date:	October 3, 2023
To:	David Miller (AEP)
Copies to:	Rebecca Jones (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Evaluation of Detection Monitoring Data at Northeastern Plant's Landfill (LF)

The first semiannual detection monitoring event of 2023 at the Landfill (LF), an existing CCR unit at the Northeastern Power Plant located in Oologah, Oklahoma, was completed on June 20, 2023 in accordance with Oklahoma Department of Environmental Quality rules regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (OAC 252.517).

Background values for the LF were previously calculated for wells MW-3D, MW-6D, MW-9D, MW-12D, and MW-15 in January 2018. Background values for wells MW-4D, MW-5D, and MW-12D were previously calculated in July 2019. After a minimum of four detection monitoring events, the results of those events were compared to the existing background dataset, and the background dataset was updated as appropriate. Revised upper prediction limits (UPLs) were calculated for each Appendix A parameter to represent background values. Lower prediction limits (LPLs) were also calculated for pH. Details on the calculation of the most recent revision to background values are described in Geosyntec's *Statistical Analysis Summary – Background Update Calculations* report, dated December 28, 2021.

To achieve an acceptably high statistical power while maintaining a site-wide false-positive rate (SWFPR) of 10% per year or less, prediction limits were calculated based on a one-of-two retesting procedure. With this procedure, a statistically significant increase (SSI) is only concluded if both samples in a series of two exceeds the UPL. In practice, if the initial result did not exceed the UPL, a second sample was not collected or analyzed.

Detection monitoring results and the relevant background values are compared in Table 1. No SSIs were observed at the Northeastern LF CCR unit, and as a result the Northeastern LF will remain in detection monitoring.

The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with OAC 252:517-9-4(h)(6). A certification of these statistics by a qualified professional engineer is provided in Attachment A.

Table 1: Detection Monitoring Data Comparison
Northeastern Plant - Landfill

Geosyntec Consultants

Analyte	Unit	Description	MW-3D	MW-4D	MW-5D	MW-6D	MW-9D	MW-12D	MW-15
			6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023
Boron	mg/L	Intrawell Background Value (UPL)	1.06	1.59	0.621	4.52	7.94	10.2	10.6
		Analytical Result	0.890	0.723	0.444	2.75	6.12	6.60	6.96
Calcium	mg/L	Intrawell Background Value (UPL)	175	214	166	272	295	172	137
		Analytical Result	103	154	113	161	204	63.5	129
Chloride	mg/L	Intrawell Background Value (UPL)	15.5	41.0	32.6	34.1	147	23.3	111
		Analytical Result	13.3	30.0	25.9	28.5	--	13.4	16.3
Fluoride	mg/L	Intrawell Background Value (UPL)	1.02	0.500	1.05	1.18	2.03	3.16	2.59
		Analytical Result	0.83	0.26	0.58	0.88	--	1.80	1.42
pH	SU	Intrawell Background Value (UPL)	8.2	8.7	9.5	8.1	7.7	9.8	9.3
		Intrawell Background Value (LPL)	6.3	6.7	6.6	6.3	6.8	7.2	6.7
		Analytical Result	7.2	7.2	7.3	7.1	7.2	8.3	8.0
Sulfate	mg/L	Intrawell Background Value (UPL)	243	485	178	581	1,010	683	690
		Analytical Result	176	290	140	466	--	522	635
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	815	1,050	682	1,170	1,550	1,150	1,160
		Analytical Result	630	790	620	1,070	--	910	1,080

Notes:

Bold values exceed the background value.

Background values are shaded gray.

MW-9D ran dry during the 6/20/23 sampling event and insufficient volume was available for all analyses.

LPL: lower prediction limit

mg/L: milligrams per liter

SU: standard units

UPL: upper prediction limit

ATTACHMENT A

Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected statistical method, described above and in the December 28, 2021 *Statistical Analysis Summary – Background Update Calculations* report, is appropriate for evaluating the groundwater monitoring data for the Northeastern LF CCR management area and that the requirements of OAC 252:517-9-4(g) have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

26057	Oklahoma	10.04.2023
License Number	Licensing State	Date

APPENDIX 6

Groundwater monitoring Field and Laboratory Reports

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 11/07-08/22 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III & IV	Appendix III & IV				
Depth to Water (ft)	90.77	23.70				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	3.01	70.10				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.49	11.43				
Water Removed From Well (gallons)	2.50	17.75				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.98	7.07				
Temperature (°C)	21.04	19.49				
Conductivity (µmhos/cc)	24,100	39,000				
Turbidity (NTU)	364	0				
Appearance	Turbid	Clear				
Odor	None	Sulphur				
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C				
Sample Time	1433	1458				
Sample Date	11/7/2022	11/7/2022				

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . **DATE:** December 12, 2022 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III & IV	Appendix III & IV				
Depth to Water (ft)	91.45	24.11				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	2.33	69.69				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.38	11.36				
Water Removed From Well (gallons)	2.00	19.25				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.84	7.07				
Temperature (°C)	17.81	18.60				
Conductivity (µmhos/cc)	28,900	40,300				
Turbidity (NTU)	297	8.4				
Appearance	Muddy	Clear				
Odor	None	None				
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C				
Sample Time	1728	1406				
Sample Date	12/12/2022	12/12/2022				

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . **DATE:** January 23-24, 2023 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III & IV	Appendix III & IV				
Depth to Water (ft)	91.99	23.54				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	1.79	70.26				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.29	11.45				
Water Removed From Well (gallons)	0.25	18.75				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.73	6.97				
Temperature (°C)	17.41	18.11				
Conductivity (µmhos/cc)	33,700	42,000				
Turbidity (NTU)	347	14.8				
Appearance	Turbid	Clear				
Odor	None	None				
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C				
Sample Time	1608	1553				
Sample Date	1/23/2023	1/23/2023				

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . **DATE:** February 21, 2023 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III & IV	Appendix III & IV				
Depth to Water (ft)	91.98	24.59				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	1.80	69.21				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.29	11.28				
Water Removed From Well (gallons)	0.25	17.50				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.78	7.01				
Temperature (°C)	18.21	18.39				
Conductivity (µmhos/cc)	34,200	42,300				
Turbidity (NTU)	428	17.6				
Appearance	Turbid	Clear				
Odor	None	None				
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C				
Sample Time	1601	1521				
Sample Date	2/21/2023	2/21/2023				

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . **DATE:** March 8, 2023 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III & IV	Appendix III & IV				
Depth to Water (ft)	92.24	28.12				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	1.54	65.68				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.25	10.71				
Water Removed From Well (gallons)	0.10	18.75				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.87	7.27				
Temperature (°C)	16.25	17.90				
Conductivity (µmhos/cc)	39,200	41,900				
Turbidity (NTU)	387	28.4				
Appearance	Turbid	Clear				
Odor	None	None				
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C				
Sample Time	1112	1138				
Sample Date	3/8/2023	3/8/2023				

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . **DATE:** April 10, 2023 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III & IV	Appendix III & IV				
Depth to Water (ft)	91.87	24.27				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	1.91	69.53				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.31	11.33				
Water Removed From Well (gallons)	0.10	20.25				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.77	7.11				
Temperature (°C)	20.87	19.32				
Conductivity (µmhos/cc)	39,900	42,200				
Turbidity (NTU)	127	7.4				
Appearance	Slightly Turbid	Clear				
Odor	None	Sulphur				
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C				
Sample Time	1548	1634				
Sample Date	4/10/2023	4/10/2023				

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . **DATE:** May 16, 2023 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III & IV	Appendix III & IV				
Depth to Water (ft)	91.39	23.48				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	2.39	70.32				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.39	11.46				
Water Removed From Well (gallons)	0.25	22.75				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.66	7.03				
Temperature (°C)	20.32	18.63				
Conductivity (µmhos/cc)	42,000	42,600				
Turbidity (NTU)	223	13.7				
Appearance	Slightly Turbid	Clear				
Odor	None	Sulphur				
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C				
Sample Time	1533	1500				
Sample Date	5/16/2023	5/16/2023				

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 06/20/23 .

Well Identification Number	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-3S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Makeup	NA	Makeup	Slurry Wall	Landfill	Slurry Wall
Depth to Water (ft)	55.77	25.36	59.13	33.56	38.13	22.84
Measured Depth Total Depth of Well (ft.)	58.25	37.76	61.80	36.75	62.95	27.21
Height of Water Column (ft.)	2.48	12.40	2.67	3.19	24.82	4.37
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.40	2.02	0.44	0.52	4.05	0.71
Water Removed From Well (gallons)	0.25	-----	1.50	1.00	13.00	1.50
Method of Removal	Pump	-----	Pump	Pump	Pump	Pump
Was Well Purged Dry?	Yes	-----	Yes	Yes	No	Yes
pH (standard units)	-----	-----	10.36	8.19	7.22	7.21
Temperature (°C)	-----	-----	22.03	21.54	21.04	22.54
Conductivity (µmhos/cc)	-----	-----	1820	2,640	956	2860
Turbidity (NTU)	-----	-----	23.9	194	8.6	102
Appearance	-----	-----	Clear	Turbid	Clear	Turbid
Odor	-----	-----	None	None	None	None
Containers	250 mL HNO3 1 L Cool 0-6C	-----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	-----	-----	1256	1301	1504	1450
Sample Date	-----	-----	6/20/2023	6/20/2023	6/20/2023	6/20/2023

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 06/20/23 .

Well Identification Number	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D	MW-6S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Landfill	NA	Landfill	NA	Landfill	Slurry Wall
Depth to Water (ft)	44.03	Dry	25.17	23.88	34.73	Dry
Measured Depth Total Depth of Well (ft.)	53.86	32.94	58.42	33.15	58.51	28.20
Height of Water Column (ft.)	9.83	----	33.25	9.27	23.78	----
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.60	----	5.42	1.51	3.88	----
Water Removed From Well (gallons)	8.00	----	14.75	----	8.00	----
Method of Removal	Pump	----	Pump	----	Pump	----
Was Well Purged Dry?	No	----	Yes	----	Yes	----
pH (standard units)	7.20	----	7.31	----	7.14	----
Temperature (°C)	19.86	----	19.96	----	20.12	----
Conductivity (µmhos/cc)	1,170	----	1020	----	1,480	----
Turbidity (NTU)	15.2	----	9.7	----	90.3	----
Appearance	Clear	----	Clear	----	Slightly Turbid	----
Odor	None	----	None	----	None	----
Containers	250 mL HNO3 1 L Cool 0-6C	----	250 mL HNO3 1 L Cool 0-6C	----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	1218	----	1244	----	1438	----
Sample Date	6/20/2023	----	6/20/2023	----	6/20/2023	----

Landfill Dup 1230

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 06/20/23 .

Well Identification Number	MW-7D	MW-7S	MW-8D	MW-8S	MW-9D	MW-9S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	NA	NA	NA	NA	Makeup	Slurry Wall
Depth to Water (ft)	11.71	11.74	23.34	8.73	57.28	27.02
Measured Depth Total Depth of Well (ft.)	58.70	33.54	64.50	43.30	63.10	36.71
Height of Water Column (ft.)	46.99	21.80	41.16	34.57	5.82	9.69
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	7.66	3.55	6.71	5.63	0.95	1.58
Water Removed From Well (gallons)	----	----	----	----	1.75	2.75
Method of Removal	----	----	----	----	Pump	Pump
Was Well Purged Dry?	----	----	----	----	Yes	Yes
pH (standard units)	----	----	----	----	7.24	11.94
Temperature (°C)	----	----	----	----	19.37	20.33
Conductivity (µmhos/cc)	----	----	----	----	1,730	3,580
Turbidity (NTU)	----	----	----	----	103	20.1
Appearance	----	----	----	----	Slightly Turbid	Yellowish Color
Odor	----	----	----	----	None	Odor
Containers	------	------	------	------	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	----	----	----	----	1428	1419
Sample Date	----	----	----	----	6/20/2023	6/20/2023

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 06/20/23 .

Well Identification Number	MW-10D	MW-10S	MW-11D	MW-11S	MW-12D	MW-12S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Makeup	NA	Makeup	NA	Landfill	Slurry Wall
Depth to Water (ft)	69.55	25.23	48.62	15.91	18.67	15.72
Measured Depth Total Depth of Well (ft.)	71.33	36.22	50.34	31.02	44.92	22.94
Height of Water Column (ft.)	1.78	10.99	1.72	15.11	26.25	7.22
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.29	1.79	0.28	2.46	4.28	1.18
Water Removed From Well (gallons)	----	----	----	----	14.00	2.00
Method of Removal	----	----	----	----	Pump	Pump
Was Well Purged Dry?	----	----	----	----	No	Yes
pH (standard units)	----	----	----	----	8.26	6.81
Temperature (°C)	----	----	----	----	20.41	20.57
Conductivity (µmhos/cc)	----	----	----	----	1,280	1,140
Turbidity (NTU)	----	----	----	----	62.8	21.3
Appearance	----	----	----	----	Slightly Turbid	Clear
Odor	----	----	----	----	None	None
Containers	250 mL HNO3 1 L Cool 0-6C	------	250 mL HNO3 1 L Cool 0-6C	------	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	----	----	----	----	1358	1349
Sample Date	----	----	----	----	6/20/2023	6/20/2023

Slurry Dup 1300

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 06/20/23 .

Well Identification Number	MW-13D	MW-13S	MW-14	MW-15	MW-16	MW-17
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Makeup	Slurry Wall	Makeup	Landfill	Makeup	Makeup
Depth to Water (ft)	43.96	16.31	76.81	60.51	63.55	55.84
Measured Depth Total Depth of Well (ft.)	47.56	18.12	78.96	74.21	64.15	58.41
Height of Water Column (ft.)	3.60	1.81	2.15	13.70	0.60	2.57
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.59	0.30	0.35	2.23	0.10	0.42
Water Removed From Well (gallons)	1.25	----	----	4.50	----	0.25
Method of Removal	Pump	----	----	Pump	----	Pump
Was Well Purged Dry?	Yes	----	----	Yes	----	Yes
pH (standard units)	7.11	----	----	7.98	----	----
Temperature (°C)	22.19	----	----	21.97	----	----
Conductivity (µmhos/cc)	1,480	----	----	1,450	----	----
Turbidity (NTU)	124	----	----	13.5	----	----
Appearance	Turbid	----	----	Clear	----	----
Odor	None	----	----	None	----	----
Containers	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C
Sample Time	1334	----	----	1412	----	----
Sample Date	6/20/2023	----	----	6/20/2023	----	----

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 06/20/23 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III & IV	Appendix III & IV				
Depth to Water (ft)	91.06	22.61				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	2.72	71.19				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.44	11.60				
Water Removed From Well (gallons)	0.25	18.00				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.82	7.11				
Temperature (°C)	20.59	20.15				
Conductivity (µmhos/cc)	41,800	42,800				
Turbidity (NTU)	216	6.8				
Appearance	Turbid	Clear				
Odor	None	Sulphur				
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C				
Sample Time	1632	1640				
Sample Date	6/20/2023	6/20/2023				

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 10/10/23 .

Well Identification Number	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-3S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	NA	Appendix III	WQ & Metals	Appendix III	WQ & Metals
Depth to Water (ft)	56.29	26.06	59.41	35.66	37.91	25.33
Measured Depth Total Depth of Well (ft.)	58.25	37.76	61.80	36.75	62.95	27.21
Height of Water Column (ft.)	1.96	11.70	2.39	1.09	25.04	1.88
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.32	1.91	0.39	0.18	4.08	0.31
Water Removed From Well (gallons)	0.25	-----	1.25	-----	12.00	0.25
Method of Removal	Pump	-----	Pump	-----	Pump	Pump
Was Well Purged Dry?	Yes	-----	Yes	-----	Yes	Yes
pH (standard units)	-----	-----	10.27	-----	7.55	-----
Temperature (°C)	-----	-----	21.87	-----	22.09	-----
Conductivity (µmhos/cc)	-----	-----	1880	-----	968	-----
Turbidity (NTU)	-----	-----	18.7	-----	10.6	-----
Appearance	-----	-----	Clear	-----	Clear	-----
Odor	-----	-----	None	-----	None	-----
Containers	250 mL HNO3 1 L Cool 0-6C	-----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	-----	-----	1158	-----	1244	-----
Sample Date	-----	-----	10/10/2023	-----	10/10/2023	-----

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 10/10/23 .

Well Identification Number	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D	MW-6S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	NA	Appendix III	NA	Appendix III	WQ & Metals
Depth to Water (ft)	44.02	Dry	26.94	24.37	34.40	Dry
Measured Depth Total Depth of Well (ft.)	53.86	32.94	58.42	33.15	58.51	28.20
Height of Water Column (ft.)	9.84	----	31.48	8.78	24.11	----
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.60	----	5.13	1.43	3.93	----
Water Removed From Well (gallons)	9.00	----	14.00	----	7.50	----
Method of Removal	Pump	----	Pump	----	Pump	----
Was Well Purged Dry?	No	----	Yes	----	Yes	----
pH (standard units)	7.1	----	7.43	----	7.61	----
Temperature (°C)	18.57	----	20.11	----	20.23	----
Conductivity (µmhos/cc)	1,200	----	1080	----	1,420	----
Turbidity (NTU)	31.6	----	3.8	----	106	----
Appearance	Clear	----	Clear	----	Slightly Turbid	----
Odor	None	----	None	----	None	----
Containers	250 mL HNO3 1 L Cool 0-6C	----	250 mL HNO3 1 L Cool 0-6C	----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	906	----	1141	----	1232	----
Sample Date	10/10/2023	----	10/10/2023	----	10/10/2023	----

Landfill Dup 1430

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 10/10/23 .

Well Identification Number	MW-7D	MW-7S	MW-8D	MW-8S	MW-9D	MW-9S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	NA	NA	NA	NA	Appendix III	WQ & Metals
Depth to Water (ft)	11.66	11.93	30.03	9.57	55.03	27.41
Measured Depth Total Depth of Well (ft.)	58.70	33.54	64.50	43.30	63.10	36.71
Height of Water Column (ft.)	47.04	21.61	34.47	33.73	8.07	9.30
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	7.67	3.52	5.62	5.50	1.32	1.52
Water Removed From Well (gallons)	----	----	----	----	2.00	2.00
Method of Removal	----	----	----	----	Pump	Pump
Was Well Purged Dry?	----	----	----	----	Yes	Yes
pH (standard units)	----	----	----	----	8.32	11.98
Temperature (°C)	----	----	----	----	19.58	20.28
Conductivity (µmhos/cc)	----	----	----	----	1,600	3,310
Turbidity (NTU)	----	----	----	----	36.4	32.8
Appearance	----	----	----	----	Clear	Amber
Odor	----	----	----	----	None	Sulphur
Containers	------	------	------	------	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	----	----	----	----	1216	1212
Sample Date	----	----	----	----	10/10/2023	10/10/2023

Slurry Wall Dup
1500

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 10/10/23 .

Well Identification Number	MW-10D	MW-10S	MW-11D	MW-11S	MW-12D	MW-12S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	NA	Appendix III	NA	Appendix III	WQ & Metals
Depth to Water (ft)	69.21	25.57	48.59	16.61	18.71	18.68
Measured Depth Total Depth of Well (ft.)	71.33	36.22	50.34	31.02	44.92	22.94
Height of Water Column (ft.)	2.12	10.65	1.75	14.41	26.21	4.26
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.35	1.74	0.29	2.35	4.27	0.69
Water Removed From Well (gallons)	0.25	----	0.25	----	13.00	1.50
Method of Removal	Pump	----	Pump	----	Pump	Pump
Was Well Purged Dry?	Yes	----	Yes	----	No	Yes
pH (standard units)	----	----	----	----	8.09	6.83
Temperature (°C)	----	----	----	----	18.03	19.13
Conductivity (µmhos/cc)	----	----	----	----	1,290	1,650
Turbidity (NTU)	----	----	----	----	43.7	52.8
Appearance	----	----	----	----	Slightly Turbid	Slightly Turbid
Odor	----	----	----	----	None	Sewage
Containers	250 mL HNO3 1 L Cool 0-6C	------	250 mL HNO3 1 L Cool 0-6C	------	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	----	----	----	----	1004	1012
Sample Date	----	----	----	----	10/10/2023	10/10/2023

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 10/10/23 .

Well Identification Number	MW-13D	MW-13S	MW-14	MW-15	MW-16	MW-17
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	WQ & Metals	Appendix III	Appendix III	Appendix III	Appendix III
Depth to Water (ft)	45.14	18.00	75.38	60.75	63.34	54.41
Measured Depth Total Depth of Well (ft.)	47.56	18.12	78.96	74.21	64.15	58.41
Height of Water Column (ft.)	2.42	0.12	3.58	13.46	0.81	4.00
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.39	0.02	0.58	2.19	0.13	0.65
Water Removed From Well (gallons)	0.25	----	0.50	4.00	----	0.25
Method of Removal	Pump	----	Pump	Pump	----	Pump
Was Well Purged Dry?	Yes	----	Yes	Yes	----	Yes
pH (standard units)	----	----	7.39	8.02	----	----
Temperature (°C)	----	----	19.83	19.71	----	----
Conductivity (µmhos/cc)	----	----	9,740	1,440	----	----
Turbidity (NTU)	----	----	11.2	42.3	----	----
Appearance	----	----	Clear	Clear	----	----
Odor	----	----	None	None	----	----
Containers	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C
Sample Time	----	----	1131	1206	----	----
Sample Date	----	----	10/10/2023	10/10/2023	----	----

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . **DATE:** 10/10/23 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III	Appendix III				
Depth to Water (ft)	89.53	22.42				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	4.25	71.38				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.69	11.63				
Water Removed From Well (gallons)	0.50	17.50				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.82	7.28				
Temperature (°C)	21.35	21.45				
Conductivity (µmhos/cc)	44,800	40,200				
Turbidity (NTU)	3.5	2.3				
Appearance	Clear	Clear				
Odor	None	None				
Containers	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C				
Sample Time	1332	1311				
Sample Date	10/10/2023	10/10/2023				

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . DATE: 12/28/23 .

Well Identification Number	MW-9D					
Activities	Gauge					
Samples	pH & TDS					
Depth to Water (ft)	53.50					
Measured Depth Total Depth of Well (ft.)	58.70					
Height of Water Column (ft.)	5.20					
Well Size (I.D.) (inches)	2					
Volume of Water in Well (gallons)	0.85					
Water Removed From Well (gallons)	1.25					
Method of Removal	Pump					
Was Well Purged Dry?	Yes					
pH (standard units)	7.36					
Temperature (°C)	19.23					
Conductivity (µmhos/cc)	1714					
Turbidity (NTU)	92.4					
Appearance	Slightly Turbid					
Odor	None					
Containers	1 L Cool 0-6C					
Sample Time	1113					
Sample Date	12/28/2023					

For 2" well multiply by	0.163
For 4" well multiply by	0.653

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223561 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/03/2023**

Customer Sample ID: MW-18 Customer Description:
Lab Number: 223561-001 Preparation:
Date Collected: 11/07/2022 15:33 EST Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	8060	mg/L	500	10	5		CRJ	11/22/2022 16:06	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.9	mg/L	50	1.5	0.5	J1	CRJ	11/21/2022 22:44	EPA 300.1 -1997, Rev. 1.0
Sulfate	311	mg/L	50	10	2		CRJ	11/21/2022 22:44	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	13700	mg/L	2	100	40	S1	SDW	11/14/2022 10:30	SM 2540C-2015

Customer Sample ID: MW-19 Customer Description:
Lab Number: 223561-002 Preparation:
Date Collected: 11/07/2022 15:58 EST Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	13400	mg/L	1250	30	10		CRJ	11/22/2022 16:39	EPA 300.1 -1997, Rev. 1.0
Fluoride	2.3	mg/L	50	1.5	0.5		CRJ	11/21/2022 23:16	EPA 300.1 -1997, Rev. 1.0
Sulfate	21	mg/L	50	10	2		CRJ	11/21/2022 23:16	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	21300	mg/L	2	100	40	S1	SDW	11/14/2022 10:37	SM 2540C-2015

223561
Job Comments:

Original report issued 11/28/2022. Report reissued with amended matrix spike precision calculations.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223561 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/03/2023**

Report Verification

This report and the above data have been confirmed by the following analyst.

Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
S1 - Residue weight is above or below the method criteria and needs to be re-analyzed at a different dilution.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling

Contact Name: Jill Parker-Witt

Contact Phone: 318-673-3816

Sampler(s): Kenny McDonald/Matt Hamilton

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 223561

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	500 mL bottle, pH<2, HNO_3	Field-filter 500 mL bottle, then pH<2, HNO_3	1 L bottle, Cool, 0-6°C	Three (six every 10th*) 1 L bottles, pH<2, HNO_3	40 mL Glass vial or 250 mL PTFE lined bottle, HCL**, pH<2			Sample Specific Notes:
							B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL	dissolved Fe and Mn	TDS, F, Cl, SO_4	Ra-226, Ra-228	Hg			
MW-18	11/7/2022	1433	G	GW	1				X					
MW-19	11/7/2022	1458	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company: EAGLE	Date/Time: 11/09/22 1400	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Only	Date/Time: 11/10/22 10:30AM

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Northeastern **Number of Plastic Containers:** 2

Opened By MSO **Number of Glass Containers:** –

Date/Time 11/10/22 10:30am **Number of Mercury Containers:** –

Were all temperatures within 0-6°C? (Y) / N or N/A **Initial:** MSO (on ice) / no ice (IR Gun Ser# 221368900, *Expir. 3/22/2024)* - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Standard **If RUSH, who was notified?** _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) N or N/A **Initial & Date:** MSO 11/10/22

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495 (OR) Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 223561 Initial & Date & Time : _____

Logged by MSO Comments: _____

Reviewed by EDL

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223590 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/10/2023**

Customer Sample ID: MW-18
Lab Number: 223590-001
Date Collected: 11/07/2022 15:33 EST

Customer Description:
Preparation:
Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.3	µg/L	10	1.0	0.2	J1	GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Arsenic	14.2	µg/L	10	1.0	0.3		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Barium	1600	µg/L	10	2.0	0.5		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Beryllium	1.90	µg/L	10	0.50	0.07		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Boron	0.91	mg/L	10	0.50	0.09		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Cadmium	0.56	µg/L	10	0.20	0.04		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Calcium	547	mg/L	10	0.5	0.2		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Chromium	56.4	µg/L	10	2.0	0.4		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Cobalt	14.0	µg/L	10	0.20	0.03		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Lead	31.8	µg/L	10	2.0	0.5		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Lithium	0.752	mg/L	10	0.0020	0.0005		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Mercury	300	ng/L	10	50	20		JAB	11/27/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	7	µg/L	10	5	1		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Selenium	5.2	µg/L	10	5.0	0.9		GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4
Thallium	0.8	µg/L	10	2.0	0.4	J1	GES	11/19/2022 21:39	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.44	pCi/L	0.17	0.13		ST	11/21/2022 12:59	SW-846 9315-1986, Rev. 0
Carrier Recovery	171	%						
Radium-228	0.99	pCi/L	0.19	0.58		TTP	11/18/2022 14:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	79.8	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223590 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/10/2023**

Customer Sample ID: MW-19
Lab Number: 223590-002
Date Collected: 11/07/2022 15:58 EST

Customer Description:
Preparation:
Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<1	µg/L	50	5	1	U1	GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Arsenic	<2	µg/L	50	5	2	U1	GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Barium	13500	µg/L	50	10	3		GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Boron	1.4	mg/L	50	2.5	0.5	J1	GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Calcium	640	mg/L	50	3	1		GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Chromium	<2	µg/L	50	10	2	U1	GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Cobalt	2.1	µg/L	50	1.0	0.2		GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Lithium	1.57	mg/L	50	0.010	0.003		GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Mercury	<7	ng/L	4	20	7	U1	JAB	12/01/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	23	µg/L	50	25	5	J1	GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Selenium	<5	µg/L	50	25	5	U1	GES	11/21/2022 11:23	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	5	1.0	0.2	U1	GES	01/09/2023 10:47	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.62	pCi/L	0.12	0.07		ST	11/21/2022 12:59	SW-846 9315-1986, Rev. 0
Carrier Recovery	329	%						
Radium-228	0.69	pCi/L	0.04	0.12		TTP	11/29/2022 16:21	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	388	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

223590
Job Comments:

Original report issued 12/21/2022. Report reissued 1/10/23 with new dilution on Tl for 002.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223590 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/10/2023**

Report Verification

This report and the above data have been confirmed by the following analyst.

Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling

Contact Name: Jill Parker-Witt

Contact Phone: 318-673-3816

Sampler(s): Kenny McDonald/Matt Hamilton

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 223590

Analysis Turnaround Time (in Calendar Days)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL Glass Bottle, HCL**, pH<2 Hg			Sample Specific Notes:
MW-18	11/7/2022	1433	G	GW	5		X			X	X			
MW-19	11/7/2022	1458	G	GW	5		X			X	X			
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EAGLE	11/09/22 1400	[signature]	11/11/22 1:00pm
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 11/11/22 1:00PM

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS FedEX USPS
	Other _____

Plant/Customer Northeastern **Number of Plastic Containers:** 2

Opened By MSD **Number of Glass Containers:** _____

Date/Time 11/11/22 1:00pm **Number of Mercury Containers:** _____

Were all temperatures within 0-6°C? Y / N or (N/A) **Initial:** _____ on ice / no ice (IR Gun Ser# 221368900, *Expir. 3/22/2024)* - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** EDL 11/11/22

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495 [OR] Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 223590 Initial & Date & Time : _____

Logged by MSD Comments: _____

Reviewed by JAB _____

_____

_____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 223910 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/10/2023**

Customer Sample ID: MW-18
Lab Number: 223910-001
Date Collected: 12/12/2022 19:28 EST

Customer Description:
Preparation:
Date Received: 12/15/2022 11:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	9850	mg/L	1250	30	10		CRJ	12/20/2022 19:01	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.9	mg/L	25	0.8	0.3		CRJ	12/20/2022 14:38	EPA 300.1 -1997, Rev. 1.0
Sulfate	275	mg/L	25	5.0	0.8		CRJ	12/20/2022 14:38	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.4	µg/L	10	1.0	0.2	J1	GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Arsenic	10.9	µg/L	10	1.0	0.3		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Barium	1700	µg/L	10	2.0	0.5		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Beryllium	1.33	µg/L	10	0.50	0.07		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Boron	1.34	mg/L	10	0.50	0.09		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Cadmium	0.51	µg/L	10	0.20	0.04		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Calcium	490	mg/L	10	0.5	0.2		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Chromium	48.3	µg/L	10	2.0	0.4		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Cobalt	10.4	µg/L	10	0.20	0.03		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Lead	23.2	µg/L	10	2.0	0.5		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Lithium	0.916	mg/L	10	0.0020	0.0005		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Mercury	130	ng/L	10	50	20		JAB	12/20/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	11	µg/L	10	5	1		GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Selenium	4.7	µg/L	10	5.0	0.9	J1	GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4
Thallium	0.7	µg/L	10	2.0	0.4	J1	GES	12/20/2022 13:11	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	3.33	pCi/L	0.36	0.27		ST	12/21/2022 13:53	SW-846 9315-1986, Rev. 0
Carrier Recovery	183	%						
Radium-228	1.82	pCi/L	0.15	0.40		ST	12/30/2022 15:41	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	93.7	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	16400	mg/L	20	1000	400		SDW	12/16/2022 11:36	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 223910 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/10/2023**

Customer Sample ID: MW-19 Customer Description:
Lab Number: 223910-002 Preparation:
Date Collected: 12/12/2022 16:06 EST Date Received: 12/15/2022 11:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	14900	mg/L	1250	30	10		CRJ	12/20/2022 19:34	EPA 300.1 -1997, Rev. 1.0
Fluoride	2.4	mg/L	50	1.5	0.5		CRJ	12/20/2022 15:11	EPA 300.1 -1997, Rev. 1.0
Sulfate	10	mg/L	50	10	2		CRJ	12/20/2022 15:11	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<1	µg/L	50	5	1	U1	GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Arsenic	4	µg/L	50	5	2	J1	GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Barium	20300	µg/L	50	10	3		GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Boron	2.7	mg/L	50	2.5	0.5		GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Calcium	664	mg/L	50	3	1		GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Chromium	3	µg/L	50	10	2	J1	GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Cobalt	4.6	µg/L	50	1.0	0.2		GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Lithium	1.59	mg/L	50	0.010	0.003		GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	12/20/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	16	µg/L	50	25	5	J1	GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Selenium	<5	µg/L	50	25	5	U1	GES	12/20/2022 13:16	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	5	1.0	0.2	U1	GES	01/09/2023 10:57	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.05	pCi/L	0.19	0.15		ST	12/21/2022 13:53	SW-846 9315-1986, Rev. 0
Carrier Recovery	399	%						
Radium-228	2.05	pCi/L	0.10	0.23		ST	12/30/2022 15:41	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	187	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 223910 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/10/2023**

Customer Sample ID: MW-19
Lab Number: 223910-002
Date Collected: 12/12/2022 16:06 EST

Customer Description:
Preparation:
Date Received: 12/15/2022 11:00 EST

Wet Chemistry

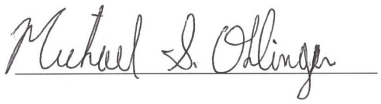
Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	22700	mg/L	20	1000	400		SDW	12/16/2022 11:42	SM 2540C-2015

223910
Job Comments:

Original report issued 1/4/23. Report reissued 1/10/23 with new dilution on Tl for 002.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 223910 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/10/2023**

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling

Contact Name: Jill Parker-Witt

Contact Phone: 318-673-3816

Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 223910

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3: B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Field-filter 500 mL bottle, then pH<2, HNO_3: dissolved Fe and Mn	1 L bottle, Cool, 0-6°C: TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3: Ra-226, Ra-228	250 mL glass bottle, HCL**, pH<2: Hg			Sample Specific Notes:
MW-18	12/12/2022	1728	G	GW	6		X		X	X	X			
MW-19	12/12/2022	1406	G	GW	6		X		X	X	X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by: KMcD	Company: EAGLE	Date/Time: 12/14/22 1100	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 12/15/22 11:20 AM

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY (UPS) (FedEX) USPS
	Other _____

Plant/Customer Northeastern Number of Plastic Containers: 10

Opened By MGK Number of Glass Containers: ~

Date/Time 12/15/22 10:40 AM Number of Mercury Containers: 2

Were all temperatures within 0-6°C? (Y) / N or N/A Initial: MGK (on ice) / no ice (NR Gun Ser# 221368900, Expir. 3/22/2024) If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: 28 days If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MGK 12/15/22

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495____ (OR) Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 223910 Initial & Date & Time : _____

Comments: _____

Logged by MSO

Reviewed by MGK

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 230296 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Customer Sample ID: MW-18
Lab Number: 230296-001
Date Collected: 01/23/2023 17:08 EST

Customer Description:
Preparation:
Date Received: 01/26/2023 11:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	11500	mg/L	1250	25	10		CRJ	01/31/2023 16:07	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.9	mg/L	25	0.8	0.3		CRJ	01/31/2023 17:13	EPA 300.1 -1997, Rev. 1.0
Sulfate	242	mg/L	25	5.0	0.8		CRJ	01/31/2023 17:13	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.5	µg/L	10	1.0	0.2	J1	GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Arsenic	2.1	µg/L	10	1.0	0.3		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Barium	1390	µg/L	10	2.0	0.5		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Beryllium	0.24	µg/L	10	0.50	0.07	J1	GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Boron	1.06	mg/L	10	0.50	0.09		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Cadmium	0.40	µg/L	10	0.20	0.04		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Calcium	642	mg/L	10	0.5	0.2		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Chromium	10	µg/L	10	2.0	0.4		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Cobalt	6.46	µg/L	10	0.20	0.03		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Lead	3.3	µg/L	10	2.0	0.5		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Lithium	1.10	mg/L	10	0.0020	0.0005		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Mercury	12	ng/L	1	5	2		JAB	02/08/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	9	µg/L	10	5	1		GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Selenium	2.0	µg/L	10	5.0	0.9	J1	GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4
Thallium	0.6	µg/L	10	2.0	0.4	J1	GES	02/01/2023 14:01	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	18600	mg/L	20	1000	400	L1	SDW	01/27/2023 08:47	SM 2540C-2015

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 230296 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Customer Sample ID: MW-19
Lab Number: 230296-002
Date Collected: 01/23/2023 16:53 EST

Customer Description:
Preparation:
Date Received: 01/26/2023 11:00 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15100	mg/L	1250	25	10		CRJ	01/31/2023 20:30	EPA 300.1 -1997, Rev. 1.0
Fluoride	2.5	mg/L	50	1.5	0.5		CRJ	01/31/2023 17:46	EPA 300.1 -1997, Rev. 1.0
Sulfate	6	mg/L	50	10	2	J1	CRJ	01/31/2023 17:46	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<1	µg/L	50	5	1	U1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Arsenic	<2	µg/L	50	5	2	U1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Barium	66200	µg/L	50	10	3		GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Boron	1.4	mg/L	50	2.5	0.5	J1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Calcium	581	mg/L	50	3	1		GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Chromium	<2	µg/L	50	10	2	U1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Cobalt	0.5	µg/L	50	1.0	0.2	J1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Lithium	1.63	mg/L	50	0.010	0.003		GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	02/08/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<5	µg/L	50	25	5	U1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Selenium	<5	µg/L	50	25	5	U1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4
Thallium	<2	µg/L	50	10	2	U1	GES	02/01/2023 14:06	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	3.61	pCi/L	0.19	0.07	R2	ST	02/14/2023 15:13	SW-846 9315-1986, Rev. 0
Carrier Recovery	606	%						
Radium-228	1.25	pCi/L	0.05	0.11		ST	02/15/2023 14:47	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	351	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	23000	mg/L	20	1000	400	L1	SDW	01/27/2023 08:52	SM 2540C-2015

230296
Job Comments:

Water Analysis Report

Reissued

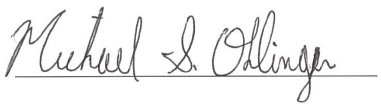
Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 230296 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Report originally issued 2/16/23. Report reissued 10/28/23 to correct rounding errors on report and EDD.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
L1 - The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.
U1 - Not detected at or above method detection limit (MDL).
R2 - Carrier recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling

Contact Name: Jill Parker-Witt

Contact Phone: 318-673-3816

Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 230296

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3: B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Field-filter 500 mL bottle, then pH<2, HNO_3: dissolved Fe and Mn	1 L bottle, Cool, 0-6°C: TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3: Ra-226, Ra-228	250 mL glass bottle, HCL**, pH<2: Hg			Sample Specific Notes:
MW-18	1/23/2023	1608	G	GW	3		X		X		X			
MW-19	1/23/2023	1553	G	GW	6		X		X	X	X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	CMOLF	01/25/23 1400	[signature]	01/26/23 11:00
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

AEP WATER & WASTE SAMPLE RECEIPT FORM (IR#1)

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Northwestern — Number of Plastic Containers: 7

Opened By MGH — Number of Glass Containers: —

Date/Time 1/26/23 11:00Am — Number of Mercury Containers: 2

Were all temperatures within 0-6°C? (Y) / N or N/A Initial: MGH (on ice / no ice)

(IR Gun Ser# 210441568, *Expir.5/27/2023*) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: _____ If **RUSH**, who was notified? _____

pH (15 min) | Cr^{+6} (pres) (24 hr) | NO_2 or NO_3 (48 hr) | *ortho*-PO_4 (48 hr) | Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N *Comments* _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MGH 1/26/23

pH paper (circle one): MQuant pH Cat 1.09535.0001 lot HC904495 [OR] Lab rat pH Cat # LRS -4801 Lot X000RWDG21

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 230296 Initial & Date & Time : _____

Comments: _____

Logged by MGH _____

Reviewed by MS _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 230623 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Customer Sample ID: MW-18
Lab Number: 230623-001
Date Collected: 02/21/2023 17:01 EST

Customer Description:
Preparation:
Date Received: 02/24/2023 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	13200	mg/L	2500	50	30		CRJ	03/15/2023 09:11	EPA 300.1 -1997, Rev. 1.0
Fluoride	1	mg/L	25	0.8	0.3		CRJ	03/15/2023 00:25	EPA 300.1 -1997, Rev. 1.0
Sulfate	213	mg/L	25	5.0	0.8		CRJ	03/15/2023 00:25	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.6	µg/L	10	1.0	0.2	J1	GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Arsenic	2.6	µg/L	10	1.0	0.3		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Barium	1860	µg/L	10	2.0	0.5		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Beryllium	0.31	µg/L	10	0.50	0.07	J1	GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Boron	1.16	mg/L	10	0.50	0.09		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Cadmium	0.48	µg/L	10	0.20	0.04		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Calcium	642	mg/L	10	0.5	0.2		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Chromium	17.6	µg/L	10	2.0	0.4		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Cobalt	7.54	µg/L	10	0.20	0.03		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Lead	4.1	µg/L	10	2.0	0.5		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Lithium	1.30	mg/L	10	0.0020	0.0005		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Mercury	<20	ng/L	10	50	20	U1	JAB	03/21/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	10	µg/L	10	5	1		GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Selenium	2.4	µg/L	10	5.0	0.9	J1	GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4
Thallium	0.5	µg/L	10	2.0	0.4	J1	GES	02/27/2023 18:46	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	20600	mg/L	20	1000	400		SDW	02/28/2023 10:40	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 230623 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Customer Sample ID: MW-19
Lab Number: 230623-002
Date Collected: 02/21/2023 16:21 EST

Customer Description:
Preparation:
Date Received: 02/24/2023 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15600	mg/L	2500	50	30		CRJ	03/15/2023 09:44	EPA 300.1 -1997, Rev. 1.0
Fluoride	2.6	mg/L	50	1.5	0.5		CRJ	03/15/2023 02:03	EPA 300.1 -1997, Rev. 1.0
Sulfate	11	mg/L	50	10	2		CRJ	03/15/2023 02:03	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<1	µg/L	50	5	1	U1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Arsenic	<2	µg/L	50	5	2	U1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Barium	88200	µg/L	50	10	3		GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Boron	1.3	mg/L	50	2.5	0.5	J1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Calcium	473	mg/L	50	3	1		GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Chromium	<2	µg/L	50	10	2	U1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Cobalt	0.3	µg/L	50	1.0	0.2	J1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Lithium	1.71	mg/L	50	0.010	0.003		GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Mercury	<7	ng/L	4	20	7	U1	JAB	03/21/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<5	µg/L	50	25	5	U1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Selenium	<5	µg/L	50	25	5	U1	GES	02/27/2023 18:51	EPA 200.8-1994, Rev. 5.4
Thallium	<0.06	µg/L	3	0.60	0.06	U1	GES	04/18/2023 21:33	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	5.26	pCi/L	0.16	0.02	R2	ST	03/16/2023 08:55	SW-846 9315-1986, Rev. 0
Carrier Recovery	638	%						
Radium-228	6.88	pCi/L	0.42	1.12	R2, R2, R2, R2	TTP	03/10/2023 15:27	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	38.0	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	23100	mg/L	20	1000	400		SDW	02/28/2023 10:47	SM 2540C-2015

230623
Job Comments:

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

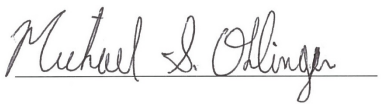
Reissued

Job ID: 230623 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Original report issued 3/22/23. Report reissued with reanalyzed Tl on 002 on 4/21/23. Report reissued 10/28/23 to correct rounding errors on report and EDD.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).
R2 - Carrier recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling

Contact Name: Jill Parker-Witt

Contact Phone: 318-673-3816

Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 230623

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL	dissolved Fe and Mn	TDS, F, Cl, SO_4	Ra-226, Ra-228	Hg			Sample Specific Notes:
							250 mL bottle, pH<2, HNO_3	Field-filter 500 mL bottle, then pH<2, HNO_3	1 L bottle, Cool, 0-6°C	Three (six every 10th*) 1 L bottles, pH<2, HNO_3	250 mL glass bottle, HCL**, pH<2			
MW-18	2/21/2023	1601	G	GW	3		X		X		X			
MW-19	2/21/2023	1521	G	GW	6		X		X	X	X			
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EAOLF	02/23/23 1400		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 2/24/23 10:30Am

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____ mgc 02/24/23

Plant/Customer Northeastern 384 P.S. **Number of Plastic Containers:** ~~4~~ 7

Opened By Michael **Number of Glass Containers:** _____

Date/Time 02/24/23 10:30 **Number of Mercury Containers:** mgc 02/24/23 ~~4~~ 2

Were all temperatures within 0-6°C? (Y) / N or N/A **Initial:** mgc (on ice) / no ice

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: 03/24/23 If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** mgc 02/24/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT#_____ [OR] Lab Rat,PN4801,LOT# X000RWDG21

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 230623 Initial & Date & Time : _____

Comments: _____

Logged by MSO _____

_____

Reviewed by TT _____

_____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 230770 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Customer Sample ID: MW-18
Lab Number: 230770-001
Date Collected: 03/08/2023 13:12 EST

Customer Description:
Preparation:
Date Received: 03/10/2023 12:47 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.6	µg/L	10	1.0	0.2	J1	GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Arsenic	4.3	µg/L	10	1.0	0.3		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Barium	1840	µg/L	10	2.0	0.5		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Beryllium	0.58	µg/L	10	0.50	0.07		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Boron	1.08	mg/L	10	0.50	0.09		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Cadmium	0.50	µg/L	10	0.20	0.04		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Calcium	141	mg/L	10	0.5	0.2		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Chromium	27.0	µg/L	10	2.0	0.4		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Cobalt	9.30	µg/L	10	0.20	0.03		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Lead	9.5	µg/L	10	2.0	0.5		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Lithium	1.42	mg/L	10	0.0020	0.0005		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Mercury	71	ng/L	10	50	20		JAB	03/27/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	9	µg/L	10	5	1		GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Selenium	2.8	µg/L	10	5.0	0.9	J1	GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4
Thallium	0.5	µg/L	10	2.0	0.4	J1	GES	03/15/2023 05:35	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 230770 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Customer Sample ID: MW-19
Lab Number: 230770-002
Date Collected: 03/09/2023 00:38 EST

Customer Description:
Preparation:
Date Received: 03/10/2023 12:47 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15600	mg/L	2500	50	30		CRJ	03/17/2023 19:27	EPA 300.1 -1997, Rev. 1.0
Fluoride	2.8	mg/L	50	1.5	0.5		CRJ	03/17/2023 20:00	EPA 300.1 -1997, Rev. 1.0
Sulfate	13	mg/L	50	10	2		CRJ	03/17/2023 20:00	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<1	µg/L	50	5	1	U1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Arsenic	2	µg/L	50	5	2	J1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Barium	86500	µg/L	50	10	3	M1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Boron	1.1	mg/L	50	2.5	0.5	J1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Calcium	87	mg/L	50	3	1	M1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Chromium	7	µg/L	50	10	2	J1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Cobalt	0.5	µg/L	50	1.0	0.2	J1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Lithium	1.75	mg/L	50	0.010	0.003	M1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	03/29/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<5	µg/L	50	25	5	U1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Selenium	<5	µg/L	50	25	5	M1, U1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4
Thallium	<2	µg/L	50	10	2	U1	GES	03/15/2023 05:40	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	4.72	pCi/L	0.18	0.04	R2	ST	03/16/2023 09:27	SW-846 9315-1986, Rev. 0
Carrier Recovery	667	%						
Radium-228	1.27	pCi/L	0.05	0.12		TTP	03/16/2023 15:50	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	340	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	22700	mg/L	20	1000	400	S7	SDW	03/15/2023 10:21	SM 2540C-2011

230770
Job Comments:

Water Analysis Report

Reissued

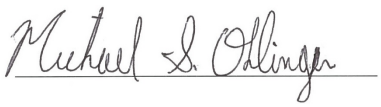
Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 230770 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Report originally issued 4/6/23. Report reissued 10/28/23 to correct rounding errors on report and EDD.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).
M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
R2 - Carrier recovery was outside acceptance limits.
S7 - Sample did not achieve constant weight.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling

Contact Name: Jill Parker-Witt

Contact Phone: 318-673-3816

Sampler(s): Kenny McDonald

Analysis Turnaround Time (In Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 230770

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL glass bottle, HCL**, pH<2 Hg			Sample Specific Notes:
MW-18	3/8/2023	1112	G	GW	2		X				X			
MW-19	3/8/2023	1138	G	GW	6		X		X	X	X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Kand	EAGLE	03/09/23 1200		
Relinquished by:	Company:	Date/Time:	Received by: JABeach	Date/Time: 3/10/23 10 30Am
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer NPS **Number of Plastic Containers:** 4 6

Opened By JAB **Number of Glass Containers:** _____ MSO 3/10/23

Date/Time 3/10/23 10:30pm **Number of Mercury Containers:** 2

Were all temperatures within 0-6°C? (Y) / N or N/A **Initial:** JAB (on ice) / no ice

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** JAB 3/10/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT#_____ [OR] Lab Rat,PN4801,LOT# X000RWDG21

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 230770 Initial & Date & Time : _____

Logged by JAB Comments: _____

Reviewed by MSO _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231107 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Customer Sample ID: MW-18
Lab Number: 231107-001
Date Collected: 04/10/2023 16:48 EDT

Customer Description:
Preparation:
Date Received: 04/13/2023 10:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.43	µg/L	10	1.00	0.08	J1	GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Arsenic	1.5	µg/L	10	1.0	0.3		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Barium	1820	µg/L	10	2.0	0.5		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Beryllium	0.12	µg/L	10	0.50	0.07	J1	GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Boron	1.21	mg/L	10	0.50	0.07		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Cadmium	0.53	µg/L	10	0.20	0.04		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Calcium	847	mg/L	10	0.5	0.1		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Chromium	5.6	µg/L	10	3.0	0.7		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Cobalt	6.23	µg/L	10	0.20	0.05		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Lead	2.0	µg/L	10	2.0	0.5		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Lithium	1.26	mg/L	10	0.0030	0.0007		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Mercury	29	ng/L	10	50	20	J1	JAB	04/27/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	8	µg/L	10	5	1		GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Selenium	2.2	µg/L	10	5.0	0.4	J1	GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4
Thallium	0.4	µg/L	10	2.0	0.2	J1	GES	04/18/2023 17:37	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231107 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Customer Sample ID: MW-19
Lab Number: 231107-002
Date Collected: 04/10/2023 17:34 EDT

Customer Description:
Preparation:
Date Received: 04/13/2023 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15400	mg/L	2500	50	10		CRJ	04/22/2023 13:43	EPA 300.1 -1997, Rev. 1.0
Fluoride	2.8	mg/L	50	1.5	0.5		CRJ	04/22/2023 10:58	EPA 300.1 -1997, Rev. 1.0
Sulfate	12	mg/L	50	15	3	J1	CRJ	04/22/2023 10:58	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.4	µg/L	50	5.0	0.4	U1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Arsenic	3	µg/L	50	5	2	J1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Barium	86400	µg/L	50	10	3		GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Boron	1.4	mg/L	50	2.5	0.4	J1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Calcium	805	mg/L	50	2.5	0.5		GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Chromium	<4	µg/L	50	15	4	U1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Cobalt	<0.3	µg/L	50	1.0	0.3	U1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Lithium	1.62	mg/L	50	0.015	0.004		GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	04/27/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<5	µg/L	50	25	5	U1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Selenium	<2	µg/L	50	25	2	U1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4
Thallium	<1	µg/L	50	10	1	U1	GES	04/18/2023 17:42	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	4.53	pCi/L	0.18	0.03	R2	ST	05/02/2023 15:09	SW-846 9315-1986, Rev. 0
Carrier Recovery	710	%						
Radium-228	0.53	pCi/L	0.04	0.10		TTP	04/28/2023 13:49	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	430	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	23100	mg/L	20	1000	400		ELT	04/14/2023 09:58	SM 2540C-2015

231107
Job Comments:

Water Analysis Report

Reissued

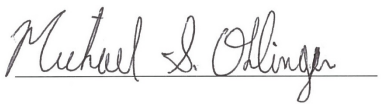
Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231107 **Customer: Northeastern 3&4 Power Station** **Date Reported: 10/28/2023**

Report originally issued 5/10/23. Report reissued 10/28/23 to correct rounding errors on report and EDD.

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).
R2 - Carrier recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling
Contact Name: Jill Parker-Witt
Contact Phone: 318-673-3816
Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 231107

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL glass bottle, HCL**, pH<2 Hg			Sample Specific Notes
MW-18	4/10/2023	1548	G	GW	2		X				X			
MW-19	4/10/2023	1634	G	GW	6		X		X	X	X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* Six 1L Bottles must be collected for Radium for every 10th sample.

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
KAnd	EAGLE	04/12/23 1400		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			Michael Ohlinger	4/13/23 10:30 AM

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY (UPS) FedEX USPS
	Other _____

Plant/Customer Northeastern Number of Plastic Containers: 6

Opened By MGK Number of Glass Containers: 2

Date/Time 4/13/23 10:30 Number of Mercury Containers: —

Were all temperatures within 0-6°C? (Y) / N or N/A Initial: MGK (on ice) / no ice

(IR Gun Ser# 2213689000 Expir. 3/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: — If **RUSH**, who was notified? —

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date**: MGK 4/13/23

pH paper (circle one): MQuant PN1.09535 0001 LOT#_____ [OR] Lab Rat,PN4801 LOT# X000RADG21 Exp 11/15/2024

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Initial & Date & Time : _____

Lab ID# 231107

Comments: _____

Logged by MSO

Reviewed by WCG

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231474 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Customer Sample ID: MW-18
Lab Number: 231474-001
Date Collected: 05/16/2023 16:33 EDT

Customer Description:
Preparation:
Date Received: 05/19/2023 12:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15200	mg/L	1250	25	6		CRJ	05/25/2023 11:19	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.1	mg/L	50	1.5	0.5	J1	CRJ	05/25/2023 11:51	EPA 300.1 -1997, Rev. 1.0
Sulfate	174	mg/L	50	15	3		CRJ	05/25/2023 11:51	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.39	µg/L	10	1.00	0.08	J1	GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Arsenic	0.6	µg/L	10	1.0	0.3	J1	GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Barium	1710	µg/L	10	2.0	0.5		GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Beryllium	0.07	µg/L	10	0.50	0.07	J1	GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Boron	1.11	mg/L	10	0.50	0.07		GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Cadmium	0.52	µg/L	10	0.20	0.04		GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Calcium	531	mg/L	10	0.5	0.1		GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Chromium	2.7	µg/L	10	3.0	0.7	J1	GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Cobalt	4.55	µg/L	10	0.20	0.05		GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Lead	0.6	µg/L	10	2.0	0.5	J1	GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Lithium	1.42	mg/L	10	0.003	0.006		GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Mercury	18	ng/L	1	5	2		JAB	06/01/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	7	µg/L	10	5	1		GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Selenium	1.1	µg/L	10	5.0	0.4	J1	GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4
Thallium	0.3	µg/L	10	2.0	0.2	J1	GES	05/24/2023 11:44	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	23600	mg/L	20	1000	400		ELT	05/22/2023 10:11	SM 2540C-2015

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231474 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Customer Sample ID: MW-19
Lab Number: 231474-002
Date Collected: 05/16/2023 16:00 EDT

Customer Description:
Preparation:
Date Received: 05/19/2023 12:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15400	mg/L	1250	25	6		CRJ	05/25/2023 12:57	EPA 300.1 -1997, Rev. 1.0
Fluoride	2.9	mg/L	50	1.5	0.5		CRJ	05/25/2023 13:30	EPA 300.1 -1997, Rev. 1.0
Sulfate	13	mg/L	50	15	3	J1	CRJ	05/25/2023 13:30	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.4	µg/L	50	5.0	0.4	U1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Arsenic	2	µg/L	50	5	2	J1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Barium	92700	µg/L	100	20	5	M1	GES	05/24/2023 12:06	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Boron	1.3	mg/L	50	2.5	0.4	J1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Calcium	552	mg/L	50	2.5	0.5	M1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Chromium	<4	µg/L	50	15	4	U1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Cobalt	<0.3	µg/L	50	1.0	0.3	U1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Lithium	1.57	mg/L	50	0.02	0.03	M1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JAB	05/23/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<5	µg/L	50	25	5	U1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Selenium	<2	µg/L	50	25	2	M1, U1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4
Thallium	<1	µg/L	50	10	1	U1	GES	05/24/2023 11:49	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	3.98	pCi/L	0.17	0.03	R2	ST	05/31/2023 12:13	SW-846 9315-1986, Rev. 0
Carrier Recovery	763	%						
Radium-228	0.54	pCi/L	0.03	0.09		TTP	05/30/2023 16:22	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	462	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	23100	mg/L	20	1000	400		ELT	05/22/2023 10:18	SM 2540C-2015

231474
Job Comments:

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231474 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Report originally issued 6/8/23. Report reissued 9/12/23 to correct rounding error on report and EDD file for Mercury 245.7 results.

Report Verification

This report and the above data have been confirmed by the following analyst.

Jonathan Barnhill, Dolan Chemical Lab Supervisor
Email: jdbarnhill@aep.com
Phone: 614-836-4256
Audinet: 8-210-4256

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).
M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
R2 - Carrier recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling

Contact Name: Jill Parker-Witt

Contact Phone: 318-673-3816

Sampler(s): Kenny McDonald

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 231414

Analysis Turnaround Time (in Calendar Days)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL glass bottle, HCL**, pH<2 Hg			Sample Specific Notes:
MW-18	5/16/2023	1533	G	GW	3		X		X		X			
MW-19	5/16/2023	1500	G	GW	6		X		X	X	X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	ERG	05/18/23 1100		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			Michael Ohlinger	5/19/23 10:00AM

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
Cooler Box Bag Envelope	PONY UPS FedEX USPS
	Other _____

Plant/Customer Northeastern **Number of Plastic Containers:** 14 5

Opened By TP/MSO **Number of Glass Containers:** 0 MSO 5/19/23

Date/Time 05/19/23 1320 **Number of Mercury Containers:** 3 2

Were all temperatures within 0-6°C? (Y) N or N/A **Initial:** TP (on ice) / no ice

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: _____ If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MGC/TTP 5/19/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT#_____ [OR] Lab Rat,PN4801,LOT# X000RWDG21 Exp 11/15/2024

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 231474 Initial & Date & Time : _____

Comments: _____

Logged by TP MSO 5/19/23 TP

Reviewed by JMB

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231878 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/12/2023**

Customer Sample ID: MW-3D
Customer Description:
Lab Number: 231878-001
Preparation:
Date Collected: 06/20/2023 16:04 EDT
Date Received: 06/22/2023 22:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.26	mg/L	2	0.10	0.02		CRJ	07/08/2023 10:08	EPA 300.1 -1997, Rev. 1.0
Chloride	13.3	mg/L	2	0.04	0.01		CRJ	07/08/2023 10:08	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.83	mg/L	2	0.06	0.02		CRJ	07/08/2023 10:08	EPA 300.1 -1997, Rev. 1.0
Sulfate	176	mg/L	10	3.0	0.6		CRJ	07/08/2023 03:33	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	361	mg/L	1	20	5		MGK	06/27/2023 09:47	SM 2320B-2011
TDS, Filterable Residue	630	mg/L	2	100	40		ELT	06/23/2023 10:37	SM 2540C-2015

Customer Sample ID: MW-4D
Customer Description:
Lab Number: 231878-002
Preparation:
Date Collected: 06/20/2023 13:18 EDT
Date Received: 06/22/2023 22:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.51	mg/L	2	0.10	0.02		CRJ	07/08/2023 10:41	EPA 300.1 -1997, Rev. 1.0
Chloride	30.0	mg/L	2	0.04	0.01		CRJ	07/08/2023 10:41	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.26	mg/L	2	0.06	0.02		CRJ	07/08/2023 10:41	EPA 300.1 -1997, Rev. 1.0
Sulfate	290	mg/L	25	8	2		CRJ	07/08/2023 04:06	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	315	mg/L	1	20	5		MGK	06/27/2023 09:47	SM 2320B-2011
TDS, Filterable Residue	790	mg/L	2	100	40		ELT	06/23/2023 10:43	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 231878 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/12/2023**

Customer Sample ID: MW-5D
Lab Number: 231878-003
Date Collected: 06/20/2023 13:44 EDT

Customer Description:
Preparation:
Date Received: 06/22/2023 22:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.13	mg/L	2	0.10	0.02		CRJ	07/08/2023 11:47	EPA 300.1 -1997, Rev. 1.0
Chloride	25.9	mg/L	2	0.04	0.01		CRJ	07/08/2023 11:47	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.58	mg/L	2	0.06	0.02		CRJ	07/08/2023 11:47	EPA 300.1 -1997, Rev. 1.0
Sulfate	140	mg/L	10	3.0	0.6		CRJ	07/08/2023 04:39	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	345	mg/L	1	20	5		MGK	06/27/2023 09:47	SM 2320B-2011
TDS, Filterable Residue	620	mg/L	2	100	40		ELT	06/23/2023 10:43	SM 2540C-2015

Customer Sample ID: MW-6D
Lab Number: 231878-004
Date Collected: 06/20/2023 15:38 EDT

Customer Description:
Preparation:
Date Received: 06/22/2023 22:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.37	mg/L	2	0.10	0.02		CRJ	07/08/2023 12:20	EPA 300.1 -1997, Rev. 1.0
Chloride	28.5	mg/L	2	0.04	0.01		CRJ	07/08/2023 12:20	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.88	mg/L	2	0.06	0.02		CRJ	07/08/2023 12:20	EPA 300.1 -1997, Rev. 1.0
Sulfate	466	mg/L	25	8	2		CRJ	07/08/2023 05:12	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	374	mg/L	1	20	5		MGK	06/27/2023 09:47	SM 2320B-2011
TDS, Filterable Residue	1070	mg/L	2	100	40		ELT	06/23/2023 10:49	SM 2540C-2015

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231878 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/12/2023**

Customer Sample ID: MW-12D
Customer Description:
Lab Number: 231878-005
Preparation:
Date Collected: 06/20/2023 14:58 EDT
Date Received: 06/22/2023 22:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.34	mg/L	2	0.10	0.02		CRJ	07/08/2023 13:26	EPA 300.1 -1997, Rev. 1.0
Chloride	13.4	mg/L	2	0.04	0.01		CRJ	07/08/2023 13:26	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.80	mg/L	2	0.06	0.02		CRJ	07/08/2023 13:26	EPA 300.1 -1997, Rev. 1.0
Sulfate	522	mg/L	25	8	2		CRJ	07/08/2023 06:18	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	130	mg/L	1	20	5		MGK	06/27/2023 09:47	SM 2320B-2011
TDS, Filterable Residue	910	mg/L	2	100	40		ELT	06/23/2023 10:49	SM 2540C-2015

Customer Sample ID: MW-15
Customer Description:
Lab Number: 231878-006
Preparation:
Date Collected: 06/20/2023 15:12 EDT
Date Received: 06/22/2023 22:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.30	mg/L	2	0.10	0.02		CRJ	07/08/2023 13:59	EPA 300.1 -1997, Rev. 1.0
Chloride	16.3	mg/L	2	0.04	0.01		CRJ	07/08/2023 13:59	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.42	mg/L	2	0.06	0.02		CRJ	07/08/2023 13:59	EPA 300.1 -1997, Rev. 1.0
Sulfate	635	mg/L	25	8	2		CRJ	07/08/2023 06:51	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	140	mg/L	1	20	5		MGK	06/27/2023 09:47	SM 2320B-2011
TDS, Filterable Residue	1080	mg/L	2	100	40		ELT	06/23/2023 10:55	SM 2540C-2015

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231878 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/12/2023**

Customer Sample ID: Landfill Duplicate
Customer Description:
Lab Number: 231878-007
Preparation:
Date Collected: 06/20/2023 13:30 EDT
Date Received: 06/22/2023 22:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.51	mg/L	2	0.10	0.02		CRJ	07/08/2023 02:27	EPA 300.1 -1997, Rev. 1.0
Chloride	29.9	mg/L	2	0.04	0.01		CRJ	07/08/2023 02:27	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.25	mg/L	2	0.06	0.02		CRJ	07/08/2023 02:27	EPA 300.1 -1997, Rev. 1.0
Sulfate	288	mg/L	25	8	2		CRJ	07/08/2023 01:54	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	324	mg/L	1	20	5		MGK	06/27/2023 09:47	SM 2320B-2011
TDS, Filterable Residue	810	mg/L	2	100	40		ELT	06/23/2023 10:55	SM 2540C-2015

Report Verification

This report and the above data have been confirmed by the following analyst.

Jonathan Barnhill, Dolan Chemical Lab Supervisor
Email: jdbarnhill@aep.com
Phone: 614-836-4256
Audinet: 8-210-4256

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NE LF Semi-Annual CCR sampling
Contact Name: Rebecca Jones
Contact Phone: 737-330-3725
Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
Routine (28 days for Monitoring Wells)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 231878

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Na, K, Mg	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4, Br, Alkalinity	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL Glass or 125/250 mL PTFE lined bottle, HCL**, pH<2 HG	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	Sample Specific Notes:
MW-3D	6/20/2023	1504	G	GW	1			X				
MW-4D	6/20/2023	1218	G	GW	1			X				
MW-5D	6/20/2023	1244	G	GW	1			X				
MW-6D	6/20/2023	1438	G	GW	1			X				
MW-12D	6/20/2023	1358	G	GW	1			X				
MW-15	6/20/2023	1412	G	GW	1			X				
LANDFILL DUPLICATE	6/20/2023	1230	G	GW	1			X				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	1	4			

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by	Company	Date/Time	Received by	Date/Time
[signature]	EA&E	06/21/23 1400		
Relinquished by	Company	Date/Time	Received by	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by:	Date/Time
			Tami T. Palmer	06/22/23 1045

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY (UPS) FedEX USPS
	Other _____

Plant/Customer Northeastern Number of Plastic Containers: (7)

Opened By T. Palmer Number of Glass Containers: _____

Date/Time 06/22/23 1045 Number of Mercury Containers: _____

Were all temperatures within 0-6°C? (Y) N or N/A Initial: JAB (on ice) / no ice

(IR Gun Ser# 2213689000, Expir. 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) N Comments _____

Was Chain of Custody received? (Y) N Comments _____

Requested turnaround: 07/13/23 If RUSH, who was notified? _____

pH (15 min) | Cr^{+6} (pres) (24 hr) | NO_2 or NO_3 (48 hr) | *ortho*-PO_4 (48 hr) | Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) N Comments _____

Were samples labeled properly? (Y) N Comments _____

Were correct containers used? (Y) N Comments _____

Was pH checked & Color Coding done? (Y) N or N/A Initial & Date: JAB 06/22/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT# _____ [OR] Lab Rat,PN4801,LOT# X008RWD021 Exp 11/15/2024

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 231878 Initial & Date & Time: _____

Logged by TB Comments: _____

Reviewed by JMD

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231880 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/12/2023**

Customer Sample ID: MW-19 Customer Description:
Lab Number: 231880-001 Preparation:
Date Collected: 06/20/2023 17:40 EDT Date Received: 06/22/2023 10:45 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15200	mg/L	2500	50	10		CRJ	07/11/2023 00:37	EPA 300.1 -1997, Rev. 1.0
Fluoride	3.0	mg/L	50	1.5	0.5		CRJ	07/11/2023 01:10	EPA 300.1 -1997, Rev. 1.0
Sulfate	6	mg/L	50	15	3	J1	CRJ	07/11/2023 01:10	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	23300	mg/L	20	1000	400		ELT	06/23/2023 11:01	SM 2540C-2015

231880-001
Comments:

BKG New well

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231880 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/12/2023**

Report Verification

This report and the above data have been confirmed by the following analyst.

Jonathan Barnhill, Dolan Chemical Lab Supervisor
Email: jdbarnhill@aep.com
Phone: 614-836-4256
Audinet: 8-210-4256

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling

Contact Name: Rebecca Jones

Contact Phone: 737-330-3725

Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 231880

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3: B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL	Field-filter 500 mL bottle, then pH<2, HNO_3: dissolved Fe and Mn	1 L bottle, Cool, 0-6°C: TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3: Ra-226, Ra-228	250 mL glass bottle, HCL**, pH<2: Hg			Sample Specific Notes:
MW-19	6/20/2023	1640	G	GW	1				X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EAGLE	06/21/23 1400		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			Tam T. Palmer	06/22/23 1045

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY (UPS) FedEX USPS
	Other _____

Plant/Customer Northeastern **Number of Plastic Containers:** 1

Opened By T. Palmer **Number of Glass Containers:** _____

Date/Time 06/22/23 1045 **Number of Mercury Containers:** _____

Were all temperatures within 0-6°C? (Y) / N or N/A **Initial:** JAB (on ice) / no ice

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) N Comments _____

Was Chain of Custody received? (Y) N Comments _____

Requested turnaround: 07/13/23 If **RUSH**, who was notified? _____

pH (15 min) Cr^{+6} (pres) (24 hr) NO_2 or NO_3 (48 hr) *ortho*-PO_4 (48 hr) Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) N or N/A **Initial & Date:** JAB 6/22/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT#_____ [OR] Lab Rat,PN4801,LOT# X000RWDG21 Exp 11/15/2024

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 231880 Initial & Date & Time : _____

Comments: _____

Logged by AP _____

Reviewed by JAB _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231916 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Customer Sample ID: MW-2D
Lab Number: 231916-001
Date Collected: 06/20/2023 13:56 EDT

Customer Description:
Preparation:
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.54	µg/L	10	1.00	0.08	J1	GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Arsenic	25.1	µg/L	10	1.0	0.3		GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Barium	26.3	µg/L	10	2.0	0.5		GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.07	µg/L	10	0.50	0.07	U1	GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Boron	8.93	mg/L	10	0.50	0.07		GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Cadmium	0.24	µg/L	10	0.20	0.04		GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Calcium	14.9	mg/L	10	0.5	0.1		GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Chromium	2.0	µg/L	10	3.0	0.7	J1	GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Cobalt	0.47	µg/L	10	0.20	0.05		GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Lead	2.6	µg/L	10	2.0	0.5		GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Lithium	<0.006	mg/L	10	0.003	0.006	U1	GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Mercury	34	ng/L	2	10	4		RLP	06/28/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	503	µg/L	10	5	1		GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Selenium	18.5	µg/L	10	5.0	0.4		GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4
Thallium	0.3	µg/L	10	2.0	0.2	J1	GES	07/12/2023 13:29	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-9D
Lab Number: 231916-002
Date Collected: 06/20/2023 15:28 EDT

Customer Description:
Preparation:
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	6.12	mg/L	5	0.25	0.04	M1	GES	08/10/2023 04:26	EPA 200.8-1994, Rev. 5.4
Calcium	204	mg/L	5	0.25	0.05	M1	GES	08/10/2023 04:26	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.78	pCi/L	0.17	0.21		TTP	06/30/2023 11:51	SW-846 9315-1986, Rev. 0
Carrier Recovery	125	%						
Radium-228	0.14	pCi/L	0.15	0.53		ST	07/03/2023 15:12	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	75.6	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231916 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Customer Sample ID: MW-13D
Lab Number: 231916-003
Date Collected: 06/20/2023 14:34 EDT

Customer Description:
Preparation:
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.234	µg/L	1	0.100	0.008		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Arsenic	0.81	µg/L	1	0.10	0.03		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Barium	47.9	µg/L	1	0.20	0.05		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Beryllium	0.095	µg/L	1	0.050	0.007		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Boron	1.74	mg/L	1	0.050	0.007		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Cadmium	0.115	µg/L	1	0.020	0.004		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Calcium	197	mg/L	5	0.25	0.05		GES	07/12/2023 13:55	EPA 200.8-1994, Rev. 5.4
Chromium	1.18	µg/L	1	0.30	0.07		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Cobalt	1.18	µg/L	1	0.020	0.005		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Lead	0.93	µg/L	1	0.20	0.05		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Lithium	0.0208	mg/L	1	0.0003	0.0006		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	06/28/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	15.4	µg/L	1	0.5	0.1		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Selenium	4.84	µg/L	1	0.50	0.04		GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4
Thallium	0.03	µg/L	1	0.20	0.02	J1	GES	07/12/2023 13:35	EPA 200.8-1994, Rev. 5.4

231916
Job Comments:

Original report issued 7/19/23. Report reissued 8/14/23 with additional metals on 002. Report reissued 9/12/23 to correct rounding error on report and EDD file for Mercury 245.7 results.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231916 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Report Verification

This report and the above data have been confirmed by the following analyst.

Jonathan Barnhill, Dolan Chemical Lab Supervisor
Email: jdbarnhill@aep.com
Phone: 614-836-4256
Audinet: 8-210-4256

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).
M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG LF CCR sampling

Contact Name: Rebecca Jones

Contact Phone: 737-330-3725

Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 231916

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL glass bottle, HCL**, pH<2 Hg			Sample Specific Notes:
MW-2D	6/20/2023	1256	G	GW	2		X				X			
MW-9D	6/20/2023	1428	G	GW	3					X				
MW-13D	6/20/2023	1334	G	GW	2		X				X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Kenny	EAGLE	06/22/23 1400		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			Michael Ohlinger	6/26/23 2:00PM

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Northeastern **Number of Plastic Containers:** 5

Opened By MSO/MGK **Number of Glass Containers:** -

Date/Time 6/26/23 2:00pm **Number of Mercury Containers:** 2

Were all temperatures within 0-6°C? Y / N or (N/A) **Initial:** _____ on ice / (no ice)

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) | Cr^{+6} (pres) (24 hr) | NO_2 or NO_3 (48 hr) | *ortho*-PO_4 (48 hr) | Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) N or N/A **Initial & Date:** MGK 6/26/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT#_____ [OR] Lab Rat,PN4801,LOT# X000RWDG21 Exp 11/15/2024

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 231916 Initial & Date & Time : _____

Comments: _____

Logged by MSO _____

Reviewed by WCG _____

_____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231917 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/19/2023**

Customer Sample ID: MW-3D
Customer Description:
Lab Number: 231917-001
Preparation:
Date Collected: 06/20/2023 16:04 EDT
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.890	mg/L	1	0.050	0.007		GES	07/12/2023 13:40	EPA 200.8-1994, Rev. 5.4
Calcium	103	mg/L	1	0.05	0.01		GES	07/12/2023 13:40	EPA 200.8-1994, Rev. 5.4
Magnesium	38.2	mg/L	1	0.100	0.006		GES	07/12/2023 13:40	EPA 200.8-1994, Rev. 5.4
Potassium	1.56	mg/L	1	0.100	0.008		GES	07/12/2023 13:40	EPA 200.8-1994, Rev. 5.4
Sodium	58.8	mg/L	1	0.20	0.01		GES	07/12/2023 13:40	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-4D
Customer Description:
Lab Number: 231917-002
Preparation:
Date Collected: 06/20/2023 13:18 EDT
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.723	mg/L	1	0.050	0.007		GES	07/12/2023 13:45	EPA 200.8-1994, Rev. 5.4
Calcium	154	mg/L	1	0.05	0.01		GES	07/12/2023 13:45	EPA 200.8-1994, Rev. 5.4
Magnesium	19.2	mg/L	1	0.100	0.006		GES	07/12/2023 13:45	EPA 200.8-1994, Rev. 5.4
Potassium	1.19	mg/L	1	0.100	0.008		GES	07/12/2023 13:45	EPA 200.8-1994, Rev. 5.4
Sodium	68.7	mg/L	1	0.20	0.01		GES	07/12/2023 13:45	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-5D
Customer Description:
Lab Number: 231917-003
Preparation:
Date Collected: 06/20/2023 13:44 EDT
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.444	mg/L	1	0.050	0.007		GES	07/12/2023 13:50	EPA 200.8-1994, Rev. 5.4
Calcium	113	mg/L	1	0.05	0.01		GES	07/12/2023 13:50	EPA 200.8-1994, Rev. 5.4
Magnesium	40.9	mg/L	1	0.100	0.006		GES	07/12/2023 13:50	EPA 200.8-1994, Rev. 5.4
Potassium	0.900	mg/L	1	0.100	0.008		GES	07/12/2023 13:50	EPA 200.8-1994, Rev. 5.4
Sodium	33.7	mg/L	1	0.20	0.01		GES	07/12/2023 13:50	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 231917 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/19/2023**

Customer Sample ID: MW-6D
Lab Number: 231917-004
Date Collected: 06/20/2023 15:38 EDT
Customer Description:
Preparation:
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	2.75	mg/L	1	0.050	0.007		GES	07/12/2023 14:00	EPA 200.8-1994, Rev. 5.4
Calcium	161	mg/L	1	0.05	0.01		GES	07/12/2023 14:00	EPA 200.8-1994, Rev. 5.4
Magnesium	31.7	mg/L	1	0.100	0.006		GES	07/12/2023 14:00	EPA 200.8-1994, Rev. 5.4
Potassium	2.62	mg/L	1	0.100	0.008		GES	07/12/2023 14:00	EPA 200.8-1994, Rev. 5.4
Sodium	124	mg/L	1	0.20	0.01		GES	07/12/2023 14:00	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-12D
Lab Number: 231917-005
Date Collected: 06/20/2023 14:58 EDT
Customer Description:
Preparation:
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	6.60	mg/L	1	0.050	0.007		GES	07/12/2023 14:05	EPA 200.8-1994, Rev. 5.4
Calcium	63.5	mg/L	1	0.05	0.01		GES	07/12/2023 14:05	EPA 200.8-1994, Rev. 5.4
Magnesium	8.46	mg/L	1	0.100	0.006		GES	07/12/2023 14:05	EPA 200.8-1994, Rev. 5.4
Potassium	1.67	mg/L	1	0.100	0.008		GES	07/12/2023 14:05	EPA 200.8-1994, Rev. 5.4
Sodium	220	mg/L	5	1.00	0.05		GES	07/12/2023 14:16	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-15
Lab Number: 231917-006
Date Collected: 06/20/2023 15:12 EDT
Customer Description:
Preparation:
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	6.96	mg/L	1	0.050	0.007		GES	07/12/2023 14:10	EPA 200.8-1994, Rev. 5.4
Calcium	129	mg/L	1	0.05	0.01		GES	07/12/2023 14:10	EPA 200.8-1994, Rev. 5.4
Magnesium	37.9	mg/L	1	0.100	0.006		GES	07/12/2023 14:10	EPA 200.8-1994, Rev. 5.4
Potassium	2.04	mg/L	1	0.100	0.008		GES	07/12/2023 14:10	EPA 200.8-1994, Rev. 5.4
Sodium	149	mg/L	1	0.20	0.01		GES	07/12/2023 14:10	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231917 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/19/2023**

Customer Sample ID: LANDFILL DUPLICATE
Customer Description:
Lab Number: 231917-007
Preparation:
Date Collected: 06/20/2023 13:30 EDT
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.698	mg/L	1	0.050	0.007		GES	07/12/2023 14:21	EPA 200.8-1994, Rev. 5.4
Calcium	148	mg/L	1	0.05	0.01	M1	GES	07/12/2023 14:21	EPA 200.8-1994, Rev. 5.4
Magnesium	18.5	mg/L	1	0.100	0.006		GES	07/12/2023 14:21	EPA 200.8-1994, Rev. 5.4
Potassium	1.15	mg/L	1	0.100	0.008		GES	07/12/2023 14:21	EPA 200.8-1994, Rev. 5.4
Sodium	66.7	mg/L	1	0.20	0.01	M1	GES	07/12/2023 14:21	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: LF EQUIPMENT BLANK
Customer Description:
Lab Number: 231917-008
Preparation:
Date Collected: 06/20/2023 15:18 EDT
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.010	mg/L	1	0.050	0.007	J1	GES	07/12/2023 14:37	EPA 200.8-1994, Rev. 5.4
Calcium	0.01	mg/L	1	0.05	0.01	J1	GES	07/12/2023 14:37	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.006	mg/L	1	0.100	0.006	U1	GES	07/12/2023 14:37	EPA 200.8-1994, Rev. 5.4
Potassium	<0.008	mg/L	1	0.100	0.008	U1	GES	07/12/2023 14:37	EPA 200.8-1994, Rev. 5.4
Sodium	0.03	mg/L	1	0.20	0.01	J1	GES	07/12/2023 14:37	EPA 200.8-1994, Rev. 5.4

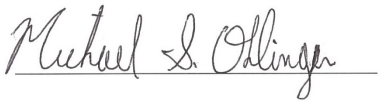
Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231917 **Customer: Northeastern 3&4 Power Station** **Date Reported: 07/19/2023**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NE LF Semi-Annual CCR sampling
Contact Name: Rebecca Jones
Contact Phone: 737-330-3725
Sampler(s): Kenny McDonald

Analysis Turnaround Time (In Calendar Days)
Routine (28 days for Monitoring Wells)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 231917

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Na, K, Mg	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4, Br, Alkalinity	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL Glass or 125/250 mL PTFE lined bottle, HCL**, pH<2 HG	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	Sample Specific Notes
MW-3D	6/20/2023	1504		GW	1		X					
MW-4D	6/20/2023	1218		GW	1		X					
MW-5D	6/20/2023	1244		GW	1		X					
MW-6D	6/20/2023	1438		GW	1		X					
MW-12D	6/20/2023	1358		GW	1		X					
MW-15	6/20/2023	1412		GW	1		X					
LANDFILL DUPLICATE	6/20/2023	1230		GW	1		X					
LANDFILL EQUIPMENT BLANK	6/20/2023	1418		W	1		X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	1	4			

* Six 1L Bottles must be collected for Radium for every 10th sample.

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EAGLE	06/22/23 1410		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			Michael Ohlinger	6/26/23 2:00PM

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Northwestern **Number of Plastic Containers:** 8

Opened By MSO/MGK **Number of Glass Containers:** -

Date/Time 6/26/23 2:00PM **Number of Mercury Containers:** -

Were all temperatures within 0-6°C? Y / N or (N/A) **Initial:** _____ on ice / (no ice) MSO 6/26/23

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) | Cr^{+6} (pres) (24 hr) | NO_2 or NO_3 (48 hr) | *ortho*-PO_4 (48 hr) | Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MGK 6/26/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT#_____ [OR] ~~Lab Rat~~,PN4801,LOT# X000RWDG21 Exp 11/15/2024

- Was Add'l Preservative needed? Y (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Initial & Date & Time : _____

Lab ID# 231917

Comments: _____

Logged by MSO

Reviewed by WCG

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231918 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Customer Sample ID: MW-18
Lab Number: 231918-001
Date Collected: 06/20/2023 17:32 EDT

Customer Description:
Preparation:
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.38	µg/L	10	1.00	0.08	J1	GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Arsenic	0.5	µg/L	10	1.0	0.3	J1	GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Barium	2130	µg/L	10	2.0	0.5		GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.07	µg/L	10	0.50	0.07	U1	GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Boron	1.22	mg/L	10	0.50	0.07		GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Cadmium	0.64	µg/L	10	0.20	0.04		GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Calcium	585	mg/L	10	0.5	0.1		GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Chromium	1.9	µg/L	10	3.0	0.7	J1	GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Cobalt	4.30	µg/L	10	0.20	0.05		GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Lead	<0.5	µg/L	10	2.0	0.5	U1	GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Lithium	1.45	mg/L	10	0.003	0.006		GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Mercury	<20	ng/L	10	50	20	U1	RLP	06/28/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	7	µg/L	10	5	1		GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Selenium	0.8	µg/L	10	5.0	0.4	J1	GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4
Thallium	0.3	µg/L	10	2.0	0.2	J1	GES	07/12/2023 15:33	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 231918 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Customer Sample ID: MW-19
Lab Number: 231918-002
Date Collected: 06/20/2023 17:40 EDT

Customer Description:
Preparation:
Date Received: 06/26/2023 14:00 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.4	µg/L	50	5.0	0.4	U1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Arsenic	<2	µg/L	50	5	2	U1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Barium	89200	µg/L	50	10	3		GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Boron	1.4	mg/L	50	2.5	0.4	J1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Calcium	502	mg/L	50	2.5	0.5		GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Chromium	5	µg/L	50	15	4	J1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Cobalt	<0.3	µg/L	50	1.0	0.3	U1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Lithium	1.68	mg/L	50	0.02	0.03		GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	06/28/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<5	µg/L	50	25	5	U1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Selenium	<2	µg/L	50	25	2	U1	GES	07/12/2023 15:38	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	08/08/2023 13:38	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	21.90	pCi/L	0.96	0.21		TTP	06/30/2023 11:51	SW-846 9315-1986, Rev. 0
Carrier Recovery	173	%						
Radium-228	0.74	pCi/L	0.05	0.14	R2	ST	07/03/2023 15:12	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	260	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

231918
Job Comments:

Original report issued 7/19/23. Report reissued 8/14/23 with thallium reanalyzed for 002. Report reissued 9/12/23 to correct rounding error on report and EDD file for Mercury 245.7 results.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 231918 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Report Verification

This report and the above data have been confirmed by the following analyst.

Jonathan Barnhill, Dolan Chemical Lab Supervisor
Email: jdbarnhill@aep.com
Phone: 614-836-4256
Audinet: 8-210-4256

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).
R2 - Carrier recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling
Contact Name: Rebecca Jones
Contact Phone: 737-330-3725
Sampler(s): Kenny McDonald

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 231918

Analysis Turnaround Time (in Calendar Days)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TL (250 mL bottle, pH<2, HNO_3)	dissolved Fe and Mn (Field-filter 500 mL bottle, then pH<2, HNO_3)	TDS, F, Cl, SO_4 (1 L bottle, Cool, 0-6°C)	Ra-226, Ra-228 (Three (six every 10th*) 1 L bottles, pH<2, HNO_3)	Hg (250 mL glass bottle, HCL**, pH<2			Sample Specific Notes
MW-18	6/20/2023	1632	G	GW	2		X				X			
MW-19	6/20/2023	1640	G	GW	5		X			X	X			
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EAGLE	06/22/23 1400		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			[signature]	6/26/23 2:00PM

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Northeastern **Number of Plastic Containers:** 5

Opened By MGO/MGK **Number of Glass Containers:** —

Date/Time 6/26/23 2:00PM **Number of Mercury Containers:** 2

Were all temperatures within 0-6°C? Y / N or (N/A) **Initial:** _____ on ice / (no ice)

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min) | Cr^{+6} (pres) (24 hr) | NO_2 or NO_3 (48 hr) | *ortho*-PO_4 (48 hr) | Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MGK 6/26/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT# _____ [OR] Lab Rat,PN4801,LOT# X000RWDG21 Exp 11/15/2024

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Initial & Date & Time : _____

Lab ID# 231918

Comments: _____

Logged by MSD

Reviewed by WCG

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 232411 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Customer Sample ID: MW-18
Lab Number: 232411-001
Date Collected: 07/31/2023 18:12 EDT

Customer Description:
Preparation:
Date Received: 08/03/2023 13:05 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15900	mg/L	2500	50	10		CRJ	08/04/2023 18:44	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.1	mg/L	50	1.5	0.5	J1	CRJ	08/04/2023 19:17	EPA 300.1 -1997, Rev. 1.0
Sulfate	130	mg/L	50	15	3		CRJ	08/04/2023 19:17	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.63	µg/L	10	1.00	0.08	J1	GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Arsenic	1.7	µg/L	10	1.0	0.3		GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Barium	2550	µg/L	10	2.0	0.5		GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Beryllium	0.14	µg/L	10	0.50	0.07	J1	GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Boron	1.31	mg/L	10	0.50	0.07		GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Cadmium	0.63	µg/L	10	0.20	0.04		GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Calcium	683	mg/L	10	0.5	0.1		GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Chromium	6.2	µg/L	10	3.0	0.7		GES	08/23/2023 09:21	EPA 200.8-1994, Rev. 5.4
Cobalt	4.51	µg/L	10	0.20	0.05		GES	08/23/2023 09:21	EPA 200.8-1994, Rev. 5.4
Lead	2.1	µg/L	10	2.0	0.5		GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Lithium	1.51	mg/L	10	0.0030	0.0007		GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Mercury	14	ng/L	1	5	2		RLP	08/07/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	13	µg/L	10	5	1		GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Selenium	1.2	µg/L	10	5.0	0.4	J1	GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4
Thallium	0.4	µg/L	10	2.0	0.2	J1	GES	08/16/2023 15:08	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	24800	mg/L	20	1000	400		ELT	08/04/2023 09:20	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 232411 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Customer Sample ID: MW-19
Lab Number: 232411-002
Date Collected: 07/31/2023 17:39 EDT

Customer Description:
Preparation:
Date Received: 08/03/2023 13:05 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Chloride	15100	mg/L	2500	50	10		CRJ	08/04/2023 20:23	EPA 300.1 -1997, Rev. 1.0
Fluoride	2.8	mg/L	50	1.5	0.5		CRJ	08/04/2023 20:56	EPA 300.1 -1997, Rev. 1.0
Sulfate	5	mg/L	50	15	3	J1	CRJ	08/04/2023 20:56	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.04	µg/L	5	0.50	0.04	U1	GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Arsenic	0.9	µg/L	5	0.5	0.2		GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Barium	107000	µg/L	100	20	5		GES	08/16/2023 15:26	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.04	µg/L	5	0.25	0.04	U1	GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Boron	1.37	mg/L	5	0.25	0.04		GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.02	µg/L	5	0.10	0.02	U1	GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Calcium	488	mg/L	5	0.25	0.05		GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Chromium	0.5	µg/L	5	1.5	0.4	J1	GES	08/23/2023 09:26	EPA 200.8-1994, Rev. 5.4
Cobalt	0.19	µg/L	5	0.10	0.03		GES	08/23/2023 09:26	EPA 200.8-1994, Rev. 5.4
Lead	<0.3	µg/L	5	1.0	0.3	U1	GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Lithium	1.65	mg/L	5	0.0015	0.0004		GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	08/07/2023 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	1.7	µg/L	5	2.5	0.5	J1	GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Selenium	0.3	µg/L	5	2.5	0.2	J1	GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	08/16/2023 15:13	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	4.68	pCi/L	0.18	0.02		ST	08/22/2023 09:08	SW-846 9315-1986, Rev. 0
Carrier Recovery	641	%						
Radium-228	1.78	pCi/L	0.04	0.09	R2	ST	08/21/2023 16:29	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	480	%						

* The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	23300	mg/L	20	1000	400		ELT	08/04/2023 10:16	SM 2540C-2015

232411
Job Comments:

Water Analysis Report

Reissued

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 232411 **Customer: Northeastern 3&4 Power Station** **Date Reported: 09/12/2023**

Report originally issued 8/24/23. Report reissued 9/12/23 to correct rounding error on report and EDD file for Mercury 245.7 results.

Report Verification

This report and the above data have been confirmed by the following analyst.

Jonathan Barnhill, Dolan Chemical Lab Supervisor
Email: jdbarnhill@aep.com
Phone: 614-836-4256
Audinet: 8-210-4256

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
U1 - Not detected at or above method detection limit (MDL).
R2 - Carrier recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NPS BKG CCR New Wells sampling
Contact Name: Rebecca Jones
Contact Phone: 737-330-3725
Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 232411

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3: B, Ca, Li, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Field-filter 500 mL bottle, then pH<2, HNO_3: dissolved Fe and Mn	1 L bottle, Cool, 0-6°C: TDS, F, Cl, SO_4	Three (six every 10th*) 1 L bottles, pH<2, HNO_3: Ra-226, Ra-228	250 mL glass bottle, HCL**, pH<2: Hg			Sample Specific Notes:
MW-18	7/31/2023	1712	G	GW	3		X		X		X			19 tests
MW-19	7/31/2023	1639	G	GW	6		X		X	X	X			21 tests
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	F4	1	4				

* Six 1L Bottles must be collected for Radium for every 10th sample.

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EAGLE	08/02/23 1401		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			[signature] Only	8/3/23 1:05pm

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Northeastern **Number of Plastic Containers:** 7

Opened By MSO **Number of Glass Containers:** ~

Date/Time 8/3/23 1:05PM **Number of Mercury Containers:** 2

Were all temperatures within 0-6°C? (Y) / N or N/A **Initial:** MSO on (ice) / no ice

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: ~ If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MSO 8/3/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT#_____ [OR] Lab Rat,PN4801,LOT# X000RWDG21 Exp 11/15/2024

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Initial & Date & Time : _____

Lab ID# 232411

Comments: _____

Logged by MSO _____

Reviewed by WCG _____

_____

_____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 233153 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-2D
Customer Description:
Lab Number: 233153-001
Preparation:
Date Collected: 10/10/2023 12:58 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.39	mg/L	2	0.10	0.02		CRJ	11/01/2023 11:47	EPA 300.1 -1997, Rev. 1.0
Chloride	14.5	mg/L	2	0.04	0.01		CRJ	11/01/2023 11:47	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.48	mg/L	2	0.06	0.02		CRJ	11/01/2023 11:47	EPA 300.1 -1997, Rev. 1.0
Sulfate	597	mg/L	25	8	2		CRJ	11/01/2023 01:54	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	159	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	1180	mg/L	1	50	20		ELT	10/13/2023 10:34	SM 2540C-2015

Customer Sample ID: MW-3D
Customer Description:
Lab Number: 233153-002
Preparation:
Date Collected: 10/10/2023 13:44 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.29	mg/L	2	0.10	0.02		CRJ	11/01/2023 11:14	EPA 300.1 -1997, Rev. 1.0
Chloride	12.8	mg/L	2	0.04	0.01		CRJ	11/01/2023 11:14	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.78	mg/L	2	0.06	0.02		CRJ	11/01/2023 11:14	EPA 300.1 -1997, Rev. 1.0
Sulfate	174	mg/L	10	3.0	0.6		CRJ	11/01/2023 02:27	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	362	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	630	mg/L	2	100	40		ELT	10/13/2023 11:05	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 233153 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-4D
Customer Description:
Lab Number: 233153-003
Preparation:
Date Collected: 10/10/2023 10:06 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.62	mg/L	2	0.10	0.02		CRJ	11/01/2023 12:53	EPA 300.1 -1997, Rev. 1.0
Chloride	32.5	mg/L	2	0.04	0.01		CRJ	11/01/2023 12:53	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.24	mg/L	2	0.06	0.02		CRJ	11/01/2023 12:53	EPA 300.1 -1997, Rev. 1.0
Sulfate	282	mg/L	25	8	2		CRJ	11/01/2023 03:00	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	366	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	810	mg/L	2	100	40		ELT	10/13/2023 11:05	SM 2540C-2015

Customer Sample ID: MW-5D
Customer Description:
Lab Number: 233153-004
Preparation:
Date Collected: 10/10/2023 12:41 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.16	mg/L	2	0.10	0.02		CRJ	11/01/2023 13:26	EPA 300.1 -1997, Rev. 1.0
Chloride	25.2	mg/L	2	0.04	0.01		CRJ	11/01/2023 13:26	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.57	mg/L	2	0.06	0.02		CRJ	11/01/2023 13:26	EPA 300.1 -1997, Rev. 1.0
Sulfate	140	mg/L	10	3.0	0.6		CRJ	11/01/2023 03:33	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	354	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	580	mg/L	2	100	40		ELT	10/13/2023 11:55	SM 2540C-2015

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 233153 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-6D
Customer Description:
Lab Number: 233153-005
Preparation:
Date Collected: 10/10/2023 13:32 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.38	mg/L	2	0.10	0.02		CRJ	11/01/2023 14:31	EPA 300.1 -1997, Rev. 1.0
Chloride	27.0	mg/L	2	0.04	0.01		CRJ	11/01/2023 14:31	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.82	mg/L	2	0.06	0.02		CRJ	11/01/2023 14:31	EPA 300.1 -1997, Rev. 1.0
Sulfate	454	mg/L	25	8	2		CRJ	11/01/2023 04:39	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	361	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	1030	mg/L	2	100	40		ELT	10/13/2023 11:55	SM 2540C-2015

Customer Sample ID: MW-9D
Customer Description:
Lab Number: 233153-006
Preparation:
Date Collected: 10/10/2023 13:16 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.27	mg/L	2	0.10	0.02		CRJ	10/31/2023 19:19	EPA 300.1 -1997, Rev. 1.0
Chloride	25.5	mg/L	2	0.04	0.01		CRJ	10/31/2023 19:19	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.80	mg/L	2	0.06	0.02		CRJ	10/31/2023 19:19	EPA 300.1 -1997, Rev. 1.0
Sulfate	783	mg/L	25	8	2		CRJ	10/31/2023 18:46	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	338	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	1570	mg/L	1	50	20		ELT	10/13/2023 12:02	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 233153 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-12D
Customer Description:
Lab Number: 233153-007
Preparation:
Date Collected: 10/10/2023 11:04 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.37	mg/L	2	0.10	0.02		CRJ	11/01/2023 15:05	EPA 300.1 -1997, Rev. 1.0
Chloride	12.5	mg/L	2	0.04	0.01		CRJ	11/01/2023 15:05	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.74	mg/L	2	0.06	0.02		CRJ	11/01/2023 15:05	EPA 300.1 -1997, Rev. 1.0
Sulfate	489	mg/L	25	8	2		CRJ	11/01/2023 05:12	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	133	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	850	mg/L	2	100	40		ELT	10/13/2023 12:02	SM 2540C-2015

Customer Sample ID: MW-14
Customer Description:
Lab Number: 233153-008
Preparation:
Date Collected: 10/10/2023 12:31 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	8.9	mg/L	50	2.5	0.5		CRJ	11/01/2023 16:10	EPA 300.1 -1997, Rev. 1.0
Chloride	2880	mg/L	500	10	3		CRJ	11/01/2023 05:45	EPA 300.1 -1997, Rev. 1.0
Fluoride	4.2	mg/L	50	1.5	0.5		CRJ	11/01/2023 16:10	EPA 300.1 -1997, Rev. 1.0
Sulfate	346	mg/L	50	15	3		CRJ	11/01/2023 16:10	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	786	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	5840	mg/L	20	1000	400		ELT	10/13/2023 12:07	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 233153 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-15
Customer Description:
Lab Number: 233153-009
Preparation:
Date Collected: 10/10/2023 13:06 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.32	mg/L	2	0.10	0.02		CRJ	11/01/2023 16:43	EPA 300.1 -1997, Rev. 1.0
Chloride	15.7	mg/L	2	0.04	0.01		CRJ	11/01/2023 16:43	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.28	mg/L	2	0.06	0.02		CRJ	11/01/2023 16:43	EPA 300.1 -1997, Rev. 1.0
Sulfate	619	mg/L	25	8	2		CRJ	11/01/2023 06:17	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	155	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	1080	mg/L	2	100	40		ELT	10/13/2023 12:07	SM 2540C-2015

Customer Sample ID: MW-18
Customer Description:
Lab Number: 233153-010
Preparation:
Date Collected: 10/10/2023 14:32 EDT
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	60.3	mg/L	50	2.5	0.5		CRJ	11/01/2023 17:49	EPA 300.1 -1997, Rev. 1.0
Chloride	16600	mg/L	2500	50	10		CRJ	11/01/2023 07:23	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.6	mg/L	50	1.5	0.5		CRJ	11/01/2023 17:49	EPA 300.1 -1997, Rev. 1.0
Sulfate	114	mg/L	50	15	3		CRJ	11/01/2023 17:49	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	517	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	25900	mg/L	20	1000	400		ELT	10/13/2023 12:14	SM 2540C-2015

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 233153 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-19
Lab Number: 233153-011
Date Collected: 10/10/2023 14:11 EDT
Customer Description:
Preparation:
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	54.8	mg/L	50	2.5	0.5		CRJ	11/01/2023 18:22	EPA 300.1 -1997, Rev. 1.0
Chloride	18100	mg/L	2500	50	10		CRJ	11/01/2023 07:56	EPA 300.1 -1997, Rev. 1.0
Fluoride	3.0	mg/L	50	1.5	0.5		CRJ	11/01/2023 18:22	EPA 300.1 -1997, Rev. 1.0
Sulfate	9	mg/L	50	15	3	J1	CRJ	11/01/2023 18:22	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	514	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	23100	mg/L	20	1000	400		ELT	10/13/2023 12:14	SM 2540C-2015

Customer Sample ID: Landfill Duplicate
Lab Number: 233153-012
Date Collected: 10/10/2023 15:30 EDT
Customer Description:
Preparation:
Date Received: 10/12/2023 10:00 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.16	mg/L	2	0.10	0.02		CRJ	10/31/2023 20:58	EPA 300.1 -1997, Rev. 1.0
Chloride	25.1	mg/L	2	0.04	0.01		CRJ	10/31/2023 20:58	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.56	mg/L	2	0.06	0.02		CRJ	10/31/2023 20:58	EPA 300.1 -1997, Rev. 1.0
Sulfate	138	mg/L	10	3.0	0.6		CRJ	10/31/2023 20:25	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	363	mg/L	1	20	5		MGK	10/13/2023 15:51	SM 2320B-2011
TDS, Filterable Residue	520	mg/L	20	1000	400	J1	ELT	10/13/2023 12:25	SM 2540C-2015

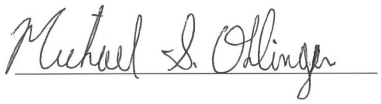
Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 233153 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NE LF Semi-Annual CCR sampling

Contact Name: Rebecca Jones

Contact Phone: 737-330-3725

Sampler(s): Kenny McDonald/Matt Hamilton

Analysis Turnaround Time (In Calendar Days): Routine (28 days for Monitoring Wells)

Site Contact:

Date:

For Lab Use Only: COC/Order #: 233153

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Na, K, Mg	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4, Br, Alkalinity	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL Glass or 125/250 mL PTFE lined bottle, HCL**, pH<2 HG	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	Sample Specific Notes:
MW-2D	10/10/2023	1158	G	GW	1			X				
MW-3D	10/10/2023	1244	G	GW	1			X				
MW-4D	10/10/2023	906	G	GW	1			X				
MW-5D	10/10/2023	1141	G	GW	1			X				
MW-6D	10/10/2023	1232	G	GW	1			X				
MW-9D	10/10/2023	1216	G	GW	1			X				
MW-12D	10/10/2023	1004	G	GW	1			X				
MW-14	10/10/2023	1131	G	GW	1			X				
MW-15	10/10/2023	1206	G	GW	1			X				
MW-18	10/10/2023	1332	G	GW	1			X				
MW-19	10/10/2023	1311	G	GW	1			X				
LANDFILL DUPLICATE	10/10/2023	1430	G	GW	1			X				
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	1	4			

** Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EAGLE	10/11/23 1300		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 10/12/23 1000

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Northeastern **Number of Plastic Containers:** 12

Opened By MGK WCG **Number of Glass Containers:** —

Date/Time 1000 10/12/23 **Number of Mercury Containers:** —

Were all temperatures within 0-6°C? (Y) / N or N/A **Initial:** MGK (on ice) / no ice

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: 28 days If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** MGK

pH paper (circle one): MQuant,PN1.09535.0001,LOT#_____ [OR] Lab Rat,PN4801,LOT# X000RWDG21 Exp 11/15/2024

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 233153 Initial & Date & Time : _____

Comments: _____

Logged by WCG _____

Reviewed by MGK _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 233183 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-2D
Customer Description:
Lab Number: 233183-001
Preparation:
Date Collected: 10/10/2023 12:58 EDT
Date Received: 10/13/2023 10:45 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	9.36	mg/L	10	0.50	0.07		GES	10/25/2023 09:14	EPA 200.8-1994, Rev. 5.4
Calcium	10.6	mg/L	10	0.5	0.1		GES	10/25/2023 09:14	EPA 200.8-1994, Rev. 5.4
Magnesium	0.20	mg/L	10	1.00	0.06	J1	GES	10/25/2023 09:14	EPA 200.8-1994, Rev. 5.4
Potassium	3.54	mg/L	10	1.00	0.08		GES	10/25/2023 09:14	EPA 200.8-1994, Rev. 5.4
Sodium	359	mg/L	10	2.0	0.1		GES	10/25/2023 09:14	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-3D
Customer Description:
Lab Number: 233183-002
Preparation:
Date Collected: 10/10/2023 13:44 EDT
Date Received: 10/13/2023 10:45 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.809	mg/L	1	0.050	0.007		GES	10/25/2023 09:19	EPA 200.8-1994, Rev. 5.4
Calcium	113	mg/L	1	0.05	0.01		GES	10/25/2023 09:19	EPA 200.8-1994, Rev. 5.4
Magnesium	37.4	mg/L	1	0.100	0.006		GES	10/25/2023 09:19	EPA 200.8-1994, Rev. 5.4
Potassium	1.63	mg/L	1	0.100	0.008		GES	10/25/2023 09:19	EPA 200.8-1994, Rev. 5.4
Sodium	54.3	mg/L	1	0.20	0.01		GES	10/25/2023 09:19	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-4D
Customer Description:
Lab Number: 233183-003
Preparation:
Date Collected: 10/10/2023 10:06 EDT
Date Received: 10/13/2023 10:45 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.789	mg/L	1	0.050	0.007		GES	10/25/2023 09:24	EPA 200.8-1994, Rev. 5.4
Calcium	166	mg/L	1	0.05	0.01		GES	10/25/2023 09:24	EPA 200.8-1994, Rev. 5.4
Magnesium	20.6	mg/L	1	0.100	0.006		GES	10/25/2023 09:24	EPA 200.8-1994, Rev. 5.4
Potassium	1.53	mg/L	1	0.100	0.008		GES	10/25/2023 09:24	EPA 200.8-1994, Rev. 5.4
Sodium	73.3	mg/L	1	0.20	0.01		GES	10/25/2023 09:24	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 233183 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-5D **Customer Description:**
Lab Number: 233183-004 **Preparation:**
Date Collected: 10/10/2023 12:41 EDT **Date Received: 10/13/2023 10:45 EDT**

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.419	mg/L	1	0.050	0.007		GES	10/25/2023 09:29	EPA 200.8-1994, Rev. 5.4
Calcium	121	mg/L	1	0.05	0.01		GES	10/25/2023 09:29	EPA 200.8-1994, Rev. 5.4
Magnesium	39.9	mg/L	1	0.100	0.006		GES	10/25/2023 09:29	EPA 200.8-1994, Rev. 5.4
Potassium	0.903	mg/L	1	0.100	0.008		GES	10/25/2023 09:29	EPA 200.8-1994, Rev. 5.4
Sodium	34.0	mg/L	1	0.20	0.01		GES	10/25/2023 09:29	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-6D **Customer Description:**
Lab Number: 233183-005 **Preparation:**
Date Collected: 10/10/2023 13:32 EDT **Date Received: 10/13/2023 10:45 EDT**

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	2.56	mg/L	1	0.050	0.007		GES	10/25/2023 09:34	EPA 200.8-1994, Rev. 5.4
Calcium	168	mg/L	1	0.05	0.01		GES	10/25/2023 09:34	EPA 200.8-1994, Rev. 5.4
Magnesium	30.7	mg/L	1	0.100	0.006		GES	10/25/2023 09:34	EPA 200.8-1994, Rev. 5.4
Potassium	2.64	mg/L	1	0.100	0.008		GES	10/25/2023 09:34	EPA 200.8-1994, Rev. 5.4
Sodium	119	mg/L	1	0.20	0.01		GES	10/25/2023 09:34	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-9D **Customer Description:**
Lab Number: 233183-006 **Preparation:**
Date Collected: 10/10/2023 13:16 EDT **Date Received: 10/13/2023 10:45 EDT**

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	5.87	mg/L	5	0.25	0.04		GES	10/25/2023 09:39	EPA 200.8-1994, Rev. 5.4
Calcium	186	mg/L	5	0.25	0.05		GES	10/25/2023 09:39	EPA 200.8-1994, Rev. 5.4
Magnesium	76.3	mg/L	5	0.50	0.03		GES	10/25/2023 09:39	EPA 200.8-1994, Rev. 5.4
Potassium	3.97	mg/L	5	0.50	0.04		GES	10/25/2023 09:39	EPA 200.8-1994, Rev. 5.4
Sodium	137	mg/L	5	1.00	0.05		GES	10/25/2023 09:39	EPA 200.8-1994, Rev. 5.4

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 233183 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-12D
Lab Number: 233183-007
Date Collected: 10/10/2023 11:04 EDT
Customer Description:
Preparation:
Date Received: 10/13/2023 10:45 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	6.33	mg/L	1	0.050	0.007		GES	10/25/2023 09:44	EPA 200.8-1994, Rev. 5.4
Calcium	59.1	mg/L	1	0.05	0.01		GES	10/25/2023 09:44	EPA 200.8-1994, Rev. 5.4
Magnesium	6.85	mg/L	1	0.100	0.006		GES	10/25/2023 09:44	EPA 200.8-1994, Rev. 5.4
Potassium	1.62	mg/L	1	0.100	0.008		GES	10/25/2023 09:44	EPA 200.8-1994, Rev. 5.4
Sodium	212	mg/L	2	0.40	0.02		GES	10/25/2023 11:06	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-14
Lab Number: 233183-008
Date Collected: 10/10/2023 12:31 EDT
Customer Description:
Preparation:
Date Received: 10/13/2023 10:45 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	1.42	mg/L	10	0.50	0.07		GES	10/25/2023 09:50	EPA 200.8-1994, Rev. 5.4
Calcium	122	mg/L	10	0.5	0.1		GES	10/25/2023 09:50	EPA 200.8-1994, Rev. 5.4
Magnesium	44.4	mg/L	10	1.00	0.06		GES	10/25/2023 09:50	EPA 200.8-1994, Rev. 5.4
Potassium	7.24	mg/L	10	1.00	0.08		GES	10/25/2023 09:50	EPA 200.8-1994, Rev. 5.4
Sodium	2170	mg/L	20	4.0	0.2		GES	10/25/2023 11:12	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-15
Lab Number: 233183-009
Date Collected: 10/10/2023 13:06 EDT
Customer Description:
Preparation:
Date Received: 10/13/2023 10:45 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	6.61	mg/L	1	0.050	0.007		GES	10/25/2023 09:55	EPA 200.8-1994, Rev. 5.4
Calcium	122	mg/L	1	0.05	0.01		GES	10/25/2023 09:55	EPA 200.8-1994, Rev. 5.4
Magnesium	37.1	mg/L	1	0.100	0.006		GES	10/25/2023 09:55	EPA 200.8-1994, Rev. 5.4
Potassium	1.85	mg/L	1	0.100	0.008		GES	10/25/2023 09:55	EPA 200.8-1994, Rev. 5.4
Sodium	144	mg/L	1	0.20	0.01		GES	10/25/2023 09:55	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Water Analysis Report

Job ID: 233183 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: MW-18 **Customer Description:**
Lab Number: 233183-010 **Preparation:**
Date Collected: 10/10/2023 14:32 EDT **Date Received: 10/13/2023 10:45 EDT**

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	1.37	mg/L	10	0.50	0.07	M1	GES	10/25/2023 10:00	EPA 200.8-1994, Rev. 5.4
Calcium	1120	mg/L	10	0.5	0.1	M1	GES	10/25/2023 10:00	EPA 200.8-1994, Rev. 5.4
Magnesium	533	mg/L	10	1.00	0.06	M1	GES	10/25/2023 10:00	EPA 200.8-1994, Rev. 5.4
Potassium	30.3	mg/L	10	1.00	0.08		GES	10/25/2023 10:00	EPA 200.8-1994, Rev. 5.4
Sodium	8290	mg/L	50	10.0	0.5	M1	GES	10/25/2023 11:17	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: MW-19 **Customer Description:**
Lab Number: 233183-011 **Preparation:**
Date Collected: 10/10/2023 14:11 EDT **Date Received: 10/13/2023 10:45 EDT**

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	1.22	mg/L	5	0.25	0.04		GES	10/25/2023 12:07	EPA 200.8-1994, Rev. 5.4
Calcium	642	mg/L	5	0.25	0.05		GES	10/25/2023 12:07	EPA 200.8-1994, Rev. 5.4
Magnesium	439	mg/L	5	0.50	0.03		GES	10/25/2023 12:07	EPA 200.8-1994, Rev. 5.4
Potassium	28.1	mg/L	5	0.50	0.04		GES	10/25/2023 12:07	EPA 200.8-1994, Rev. 5.4
Sodium	7750	mg/L	50	10.0	0.5		GES	10/25/2023 12:14	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: LANDFILL DUPLICATE **Customer Description:**
Lab Number: 233183-012 **Preparation:**
Date Collected: 10/10/2023 15:30 EDT **Date Received: 10/13/2023 10:45 EDT**

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.398	mg/L	1	0.050	0.007		GES	10/25/2023 12:19	EPA 200.8-1994, Rev. 5.4
Calcium	120	mg/L	1	0.05	0.01		GES	10/25/2023 12:19	EPA 200.8-1994, Rev. 5.4
Magnesium	38.8	mg/L	1	0.100	0.006		GES	10/25/2023 12:19	EPA 200.8-1994, Rev. 5.4
Potassium	0.877	mg/L	1	0.100	0.008		GES	10/25/2023 12:19	EPA 200.8-1994, Rev. 5.4
Sodium	33.0	mg/L	1	0.20	0.01		GES	10/25/2023 12:19	EPA 200.8-1994, Rev. 5.4

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 233183 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Customer Sample ID: LANDFILL EQUIPMENT BLANK
Customer Description:
Lab Number: 233183-013
Preparation:
Date Collected: 10/10/2023 11:15 EDT
Date Received: 10/13/2023 10:45 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	<0.007	mg/L	1	0.050	0.007	U1	GES	10/25/2023 12:25	EPA 200.8-1994, Rev. 5.4
Calcium	0.02	mg/L	1	0.05	0.01	J1	GES	10/25/2023 12:25	EPA 200.8-1994, Rev. 5.4
Magnesium	0.008	mg/L	1	0.100	0.006	J1	GES	10/25/2023 12:25	EPA 200.8-1994, Rev. 5.4
Potassium	<0.008	mg/L	1	0.100	0.008	U1	GES	10/25/2023 12:25	EPA 200.8-1994, Rev. 5.4
Sodium	0.53	mg/L	1	0.20	0.01		GES	10/25/2023 12:25	EPA 200.8-1994, Rev. 5.4

Customer Sample ID: LANDFILL FIELD BLANK
Customer Description:
Lab Number: 233183-014
Preparation:
Date Collected: 10/10/2023 12:00 EDT
Date Received: 10/13/2023 10:45 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	<0.007	mg/L	1	0.050	0.007	U1	GES	10/25/2023 12:30	EPA 200.8-1994, Rev. 5.4
Calcium	<0.01	mg/L	1	0.05	0.01	U1	GES	10/25/2023 12:30	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.006	mg/L	1	0.100	0.006	U1	GES	10/25/2023 12:30	EPA 200.8-1994, Rev. 5.4
Potassium	<0.008	mg/L	1	0.100	0.008	U1	GES	10/25/2023 12:30	EPA 200.8-1994, Rev. 5.4
Sodium	0.03	mg/L	1	0.20	0.01	J1	GES	10/25/2023 12:30	EPA 200.8-1994, Rev. 5.4

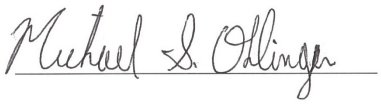
Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 233183 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/02/2023**

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
U1 - Not detected at or above method detection limit (MDL).

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NE LF Semi-Annual CCR sampling
Contact Name: Rebecca Jones
Contact Phone: 737-330-3725
Sampler(s): Kenny McDonald/Matt Hamilton

Analysis Turnaround Time (in Calendar Days)
Routine (28 days for Monitoring Wells)

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 233183

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Na, K, Mg	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4, Br, Alkalinity	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL Glass or 125/250 mL PTFE lined bottle, HCL**, pH<2 HG	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	Sample Specific Notes.
MW-2D	10/10/2023	1158	G	GW	1		X					
MW-3D	10/10/2023	1244	G	GW	1		X					
MW-4D	10/10/2023	906	G	GW	1		X					
MW-5D	10/10/2023	1141	G	GW	1		X					
MW-6D	10/10/2023	1232	G	GW	1		X					
MW-9D	10/10/2023	1216	G	GW	1		X					
MW-12D	10/10/2023	1004	G	GW	1		X					
MW-14	10/10/2023	1131	G	GW	1		X					
MW-15	10/10/2023	1206	G	GW	1		X					
MW-18	10/10/2023	1332	G	GW	1		X					
MW-19	10/10/2023	1311	G	GW	1		X					
LANDFILL DUPLICATE	10/10/2023	1430	G	GW	1		X					
LANDFILL EQUIPMENT BLANK	10/10/2023	1015	G	W	1		X					
LANDFILL FIELD BLANK	10/10/2023	1100	G	W	1		X					
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	1	4			

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EAGLE	10/11/23 1300		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 10/13/23 10:45Am

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY UPS (FedEX) USPS
	Other _____

Plant/Customer Northeastern **Number of Plastic Containers:** 14

Opened By MSO **Number of Glass Containers:** —

Date/Time 10/13/23 1045 **Number of Mercury Containers:** —

Were all temperatures within 0-6°C? Y / N or (N/A) **Initial:** _____ on ice / no ice

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: Routine If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) / N or N/A **Initial & Date:** WCG MGK 10/13/23

pH paper (circle one): MQuant,PN1.09535.0001,LOT#_____ (OR) Lab Rat,PN4801,LOT# A000RWDG21 Exp 11/15/2024

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted _____

Initial & Date & Time : _____

Lab ID# 233183

Comments _____

Logged by MSO _____

_____

Reviewed by WCG _____

_____

_____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.

Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 233955 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/08/2024**

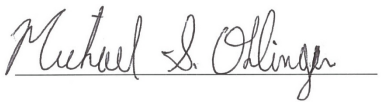
Customer Sample ID: MW-9D	Customer Description:
Lab Number: 233955-001	Preparation:
Date Collected: 12/28/2023 12:13 EST	Date Received: 12/29/2023 10:00 EST

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	1210	mg/L	1	50	20		ELT	12/29/2023 13:15	SM 2540C-2015

Report Verification

This report and the above data have been confirmed by the following analyst.



Michael Ohlinger, Chemist
Email: msohlinger@aep.com
Phone: 614-836-4184
Audinet: 8-210-4184

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
4001 Bixby Road
Groveport, Ohio 43125
Contacts: Jonathan Barnhill (318-673-3803)
Michael Ohlinger (614-836-4184)

Project Name: NE LF Semi-Annual CCR sampling

Contact Name: Rebecca Jones

Contact Phone: 737-330-3725

Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days): Routine (28 days for Monitoring Wells)

Site Contact:

Date:

For Lab Use Only: COC/Order #: 233955

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Initials	250 mL bottle, pH<2, HNO_3 B, Ca, Na, K, Mg	1 L bottle, Cool, 0-6°C TDS	Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	250 mL Glass or 125/250 mL PTFE lined bottle, HCL**, pH<2 HG	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	Sample Specific Notes:
MW-9D	11/28/23	1113	G	GW	1			X				
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____; F= filter in field							4	1	4			

* *Six 1L Bottles must be collected for Radium for every 10th sample.*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	FAGLF	11/28/23 1230		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			[signature]	12/29/23 10:02 Am

AEP WATER & WASTE SAMPLE RECEIPT FORM

Package Type	Delivery Type
(Cooler) Box Bag Envelope	PONY (UPS) FedEX USPS
	Other _____

Plant/Customer Northeastern Number of Plastic Containers: 1

Opened By Misgma Number of Glass Containers: _____

Date/Time 12/29/23 10:02Am Number of Mercury Containers: _____

Were all temperatures within 0-6°C? (Y) / N or N/A Initial MGI (on ice) / no ice

(IR Gun Ser# 2213689000, *Expir.* 03/24/2024) - If No, specify each deviation: _____

Was container in good condition? (Y) / N Comments _____

Was Chain of Custody received? (Y) / N Comments _____

Requested turnaround: 28 days If **RUSH**, who was notified? _____

pH (15 min)	Cr^{+6} (pres) (24 hr)	NO_2 or NO_3 (48 hr)	*ortho*-PO_4 (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? (Y) / N Comments _____

Were samples labeled properly? (Y) / N Comments _____

Were correct containers used? (Y) / N Comments _____

Was pH checked & Color Coding done? (Y) N or N/A **Initial & Date:** MGC 12/29/23

pH paper (circle one): MQuant PN1.09535.0001 LOT#_____ (OR) Lab Rat.PN4801 LOT# [illegible]

- Was Add'l Preservative needed? Y / (N) If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / (N) Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 233955 Initial & Date & Time : _____

Logged by MSO Comments: _____

Reviewed by MGC

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.