Annual Groundwater Monitoring Report

Public Service Company of Oklahoma

Northeastern Power Station

Landfill CCR Unit

Permit Number: FA3566010

7300 E HWY 88

Oologah, Oklahoma

January 31, 2026

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PUBLIC SERVICE COMPANY OF OKLAHOMA℠

An AEP Company

BOUNDLESS ENERGY℠

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Abbreviations:
ASD – Alternate Source Demonstration
CCR – Coal Combustion Residual
GWPS – Groundwater protection standards
LF – Landfill
NPS – Northeastern Power Station
SSI – Statistically Significant Increase
SSL – Statistically Significant Level
TDS – Total Dissolved Solids

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, 2026.
In general, the following activities were completed:

- At the start of the current annual reporting period, the landfill (LF) was operating under the Detection monitoring program.
- At the end of the current annual reporting period, the LF was operating under the Assessment monitoring program.
- The LF initiated an assessment monitoring program on March 2, 2025
- The LF initiated an assessment of corrective measures on December 4, 2025
- 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 on January 20, 2022.
- Semi-annual groundwater samples were collected and analyzed for Appendix A and B constituents, as specified in OAC 252:517-9-6 Assessment Monitoring program and AEP's *Groundwater Sampling and Analysis Plan* (2021).
- The background data was re-established in December 2024.
- Data and statistical analysis not available for the previous reporting period indicated that during the 2nd semi-annual 2024 sampling event (October 2024):
    - Potential statistically significant increases (SSIs) were identified for:
        - Boron at MW-3D, MW-4D, MW-6D, MW-9D, MW-12D, and MW-15
        - Sulfate at MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-12D, and MW-15.
- An ASD for the 2nd semi-annual 2024 sampling event was unsuccessful, so the unit transitioned into an Assessment monitoring program (March 2025)
- During the 1st semi-annual 2025 sampling event (April 2025):
    - Potential SSIs were identified for

        - Boron at MW-2D, MW-3D, MW-4D, MW-6D, MW-9D, MW-12D, MW-13D, MW-14, MW-15 and 17
        - Calcium at MW-4D
        - Fluoride at MW-14
        - pH at MW-2D and MW-4D
        - Sulfate at MW-2D, MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-12D, MW-13D and MW-15
        - TDS at MW-4D
    - Potential statistically significant levels (SSLs) were identified for:
        - Lithium at MW-14
        - Molybdenum at MW-2D, MW-12D, and MW-15
- An ASD for the 1st semi-annual 2025 Appendix IV parameters that exceeded the GWPS (lithium), was certified December 3, 2025
- Because no alternate source for the SSL (Molybdenum) was identified, the LF transitioned to assessment of corrective measures December 3, 2025, of determining an Appendix IV parameter exceeded the GWPS.
- Statistical evaluation of the 2nd semi-annual 2025 groundwater sampling event (October and December 2025) 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 unit, all groundwater monitoring wells and monitoring well identification numbers;
- All 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 background, detection monitoring, or assessment monitoring programs is included in Appendix 1;
- Statistical comparison of monitoring data to determine if there have been SSI(s) or SSL(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).

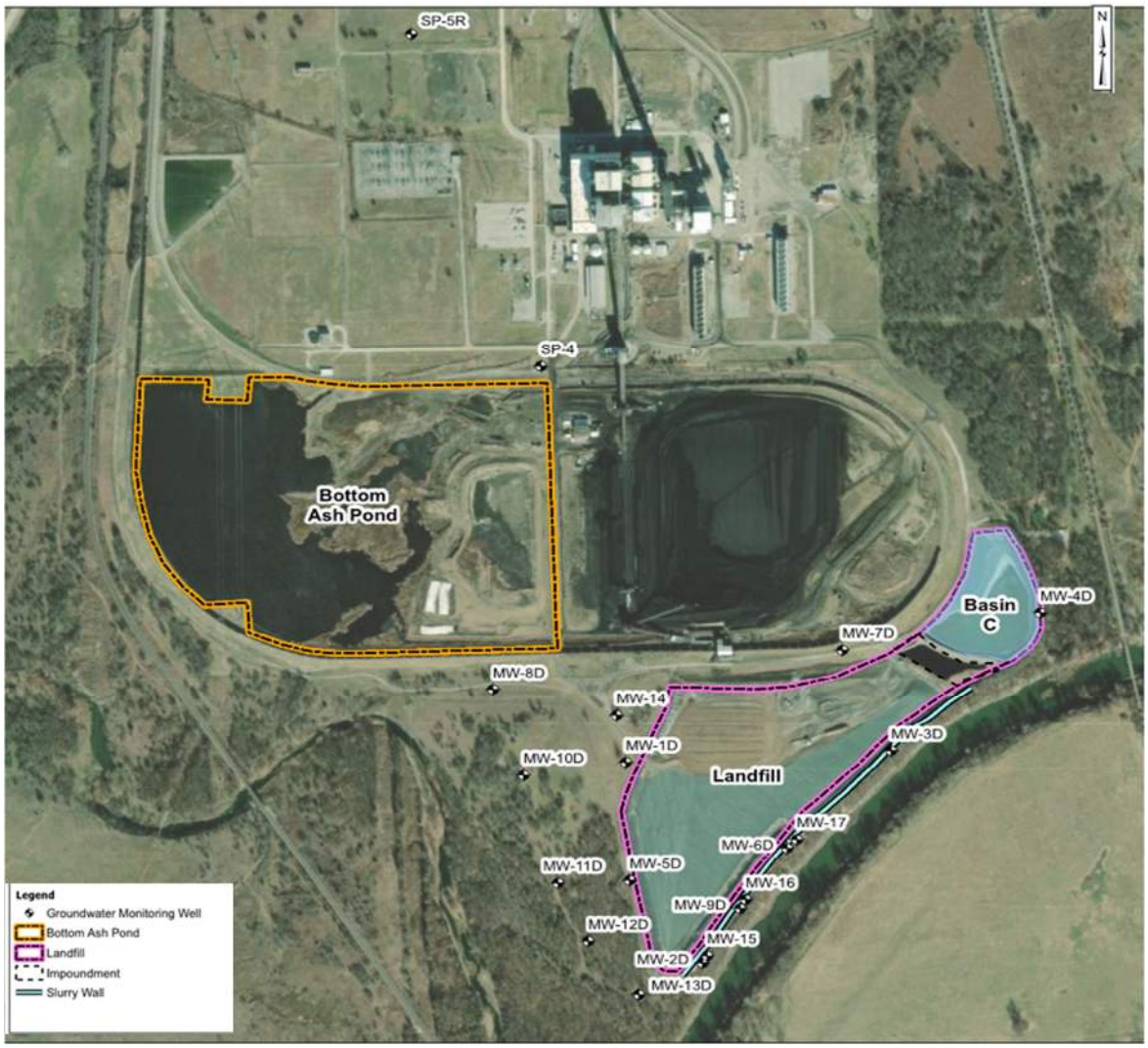
- Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a statement as to why that happened (Attached as Appendix 5, where applicable); and
- Other information required to be included in the annual report such field sheets, analytical reports, etc., (Attached as Appendix 6)

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**
SP-4	MW-1D through MW-6D,
SP-5R	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.

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 used 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 CCR 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.

A summary of the varying methods is shown below:

	Site-Wide Flow Calculation	Residence Time Calculation
Purpose	Determine representative average groundwater flow velocity across the entire CCR unit (multiple acres)	Determine residence time of groundwater within a 2-inch diameter groundwater monitoring well (<100 square feet)
Hydraulic Gradient	Greatest groundwater elevation difference between two wells monitoring the Unit, and smallest groundwater elevation difference between two wells monitoring the Unit	Elevation difference between target groundwater monitoring well, and nearest groundwater elevation contour line

Hydraulic Conductivity	Average hydraulic conductivity determined from slug tests conducted at the Unit	Estimated hydraulic conductivity from referenced work representative of the formation in contact with the individual well
Effective Porosity	Average effective porosity determined from field tests	Estimated effective porosity from referenced work representative of the formation in contact with the well

ODEQ agreed via email dated April 8, 2025, that the 252:517-9-6(b) sampling event is not needed if all Appendix A and B parameters are collected during each semi-annual sampling event (email attached in Appendix 6). Therefore, PSO no longer conducts the 252:517-9-6(b) sampling event and all Appendix A and B parameters are collected at each monitoring well for this CCR Unit during each semi-annual sampling event.

The semi-annual groundwater sampling events for Appendix A and Appendix B constituents were conducted April 7-8, 2025, October 27-28, 2025, and December 9, 2025. When the data becomes available, it is placed into NPS's Operating Record, satisfying the requirement of 252:517-9-6(d).

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 and B constituents, as specified in OAC 255:517-9-6 Assessment Monitoring program and AEP's *Groundwater Sampling and Analysis Plan* (2021), 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. Due to water quality issues with Monitoring Wells MW-18 and MW-19, AEP agreed to utilize existing background wells associated with the Northeastern Bottom Ash Pond, SP-4 and SP-5R, as background wells for the landfill in October 2024. Statistical analysis will be completed using both intra-well and inter-well comparisons when appropriate.

- Data and statistical analysis not available for the previous reporting period and certified March 1, 2025, indicated that during the 2nd semi-annual 2024 groundwater sampling event conducted October 22, 2024:
    - Potential SSIs were identified for
        - Boron at MW-3D, MW-4D, MW-6D, MW-9D, MW-12D, and MW-15
        - Sulfate at MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-12D, and MW-15
- During the 1st semi-annual 2025 sampling event conducted April 7-8, 2025:
    - Potential SSIs were identified for
        - Boron at MW-2D, MW-3D, MW-4D, MW-6D, MW-9D, MW-12D, MW-13D, MW-14, MW-15 and MW-17
        - Calcium at MW-4D
        - Fluoride at MW-14
        - pH at MW-2D and MW-4D
        - Sulfate at MW-2D, MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-12D, MW-13D and MW-15
        - TDS at MW-4D
    - Potential SSLs were identified for:
        - Lithium at MW-14
        - Molybdenum at MW-2D, MW-12D, and MW-15
- The 2nd semi-annual 2025 statistical evaluation for the groundwater samples collected on October27-28, 2025 and December 9, 2025, is underway.

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

VI. Alternate Source Demonstrations

A successful ASD for the Appendix IV parameter lithium that exceeded the GWPS was certified December 3, 2025, and can be found in Appendix 3

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

The CCR Unit transitioned to assessment monitoring om March 2, 2025.

The Unit is under an assessment of corrective action for Molybdenum as of December 4, 2025.

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

VIII. Other Required Information

The background data was re-established in December 2024.

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 MW-1D, 2D, 9D, 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 monitoring wells 2D, 9D, 13D, and 14 for Appendix A parameters and wells 1D, 10D, , and 17 for Appendix B parameters except Radium and wells 2D, 9D, 13D, and 14 for Appendix B parameters including Radium.

During the 2nd semi-annual sampling event, groundwater samples were successfully collected from monitoring wells 2D, 9D, and 13D for Appendix A parameters and wells 14 for Appendix B parameters except Radium and wells 2D, 9D, and 13D for Appendix B parameters including Radium.

X. A Projection of Key Activities for the Upcoming Year

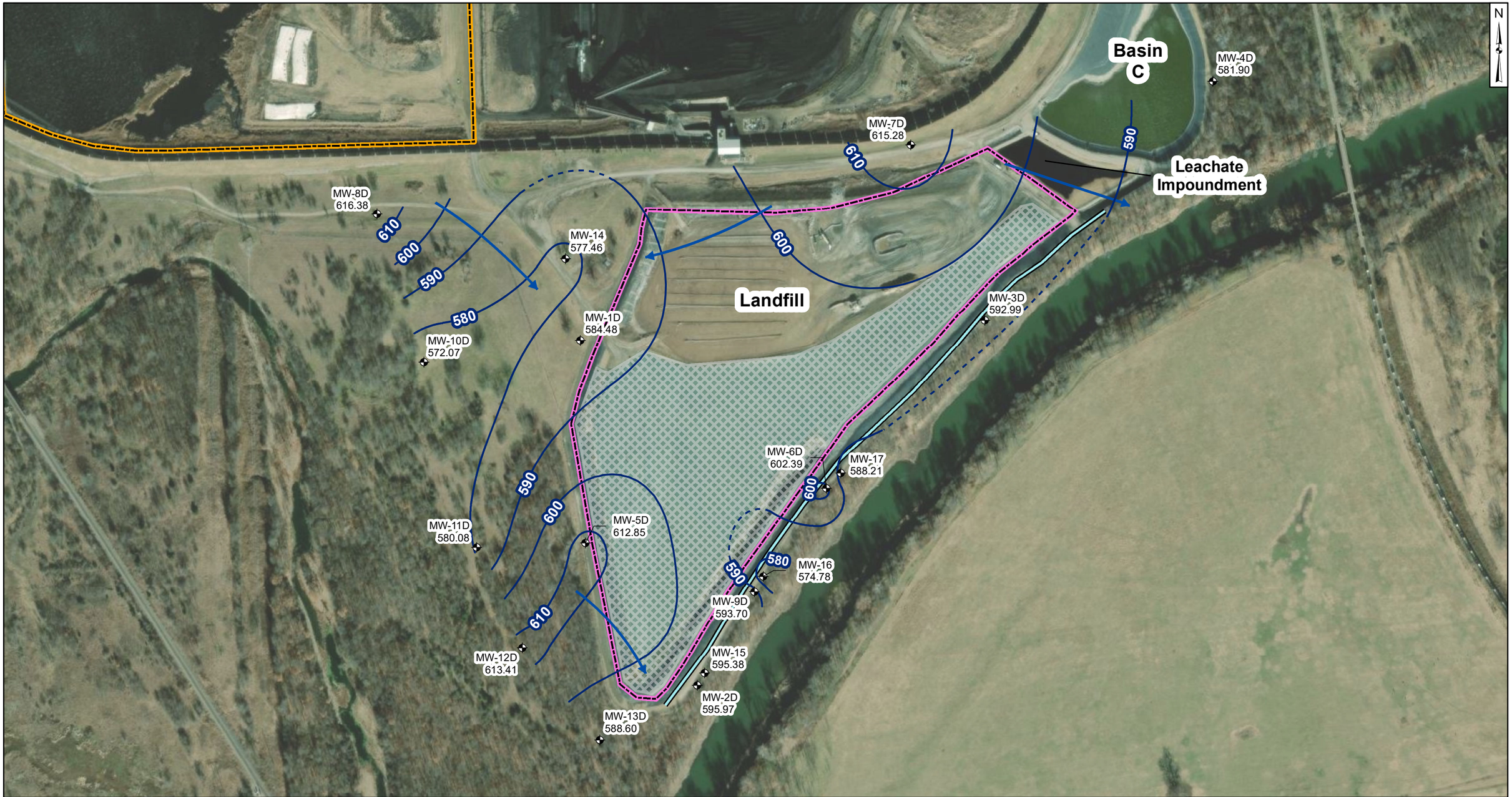
Key activities for the upcoming year include:

- Assessment monitoring will continue; otherwise
- Complete the statistical evaluation of the second semi-annual groundwater monitoring event that took place October 2025
- Perform statistical analysis on the sampling results for the Appendix III and Appendix IV parameters as required by OAC 252:517-9-6
- Determine applicable GWPSs for the Appendix IV parameters, and compare the results of Appendix IV concentrations in downgradient wells to the GWPSs, as needed.
- If no GWPSs are exceeded, the LF CCR Unit will remain in assessment monitoring.
- Responding to any new data received in light of CCR rule requirements;

- Preparation of the next annual groundwater report.
- For the GWPS that exceeded in a downgradient well the following activities will be undertaken:
    - Characterize the nature and extent of a release by installing additional GW wells as necessary, estimate the quantity of material released and the concentrations of Appendix IV parameters that are in the material, and sample all wells to characterize the nature and extent of the release.
    - If contaminants have migrated off-site, notify all persons who own land that directly overlies any part of the plume of contamination.
    - Submit an Assessment of Corrective Measures

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
- Slurry Wall

Notes

1. Monitoring well coordinates and water level data (collected April 7 and 8, 2025) provided by AEP.
2. Groundwater elevation units are feet above mean sea level (ft amsl).
3. River water elevation was 533.49 ft amsl on April 7, 2025 (USGS 07178452).
4. Grey grids within the landfill boundary is temporary geosynthetic cover.
5. Satellite imagery provided by ESRI (December 2023).

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Potentiometric Map - Uppermost Aquifer
April 2025

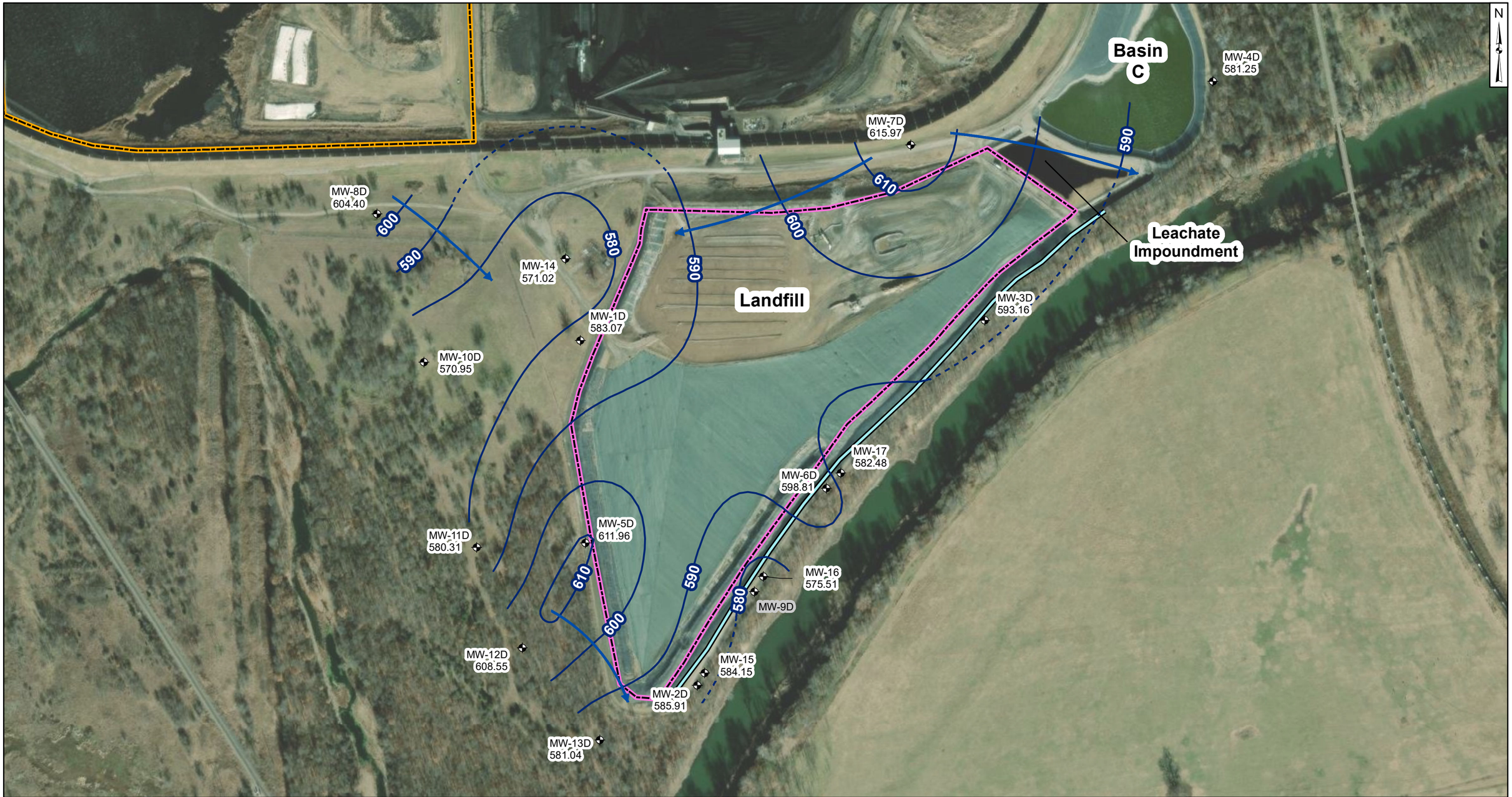
AEP Northeastern Power Plant - Landfill
Oologah, Oklahoma

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Columbus, Ohio | 2025/12/15

Figure **1**

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Northeastern\2025\AEP-Northeastern_LF_2025-04_April.mxd. okiemute.commander. 12/15/2025. Project/Phase/Task.



Legend

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

Notes

1. Monitoring well coordinates and water level data (collected October 28, 2025) provided by AEP.
2. Groundwater elevation units are feet above mean sea level (ft amsl).
3. River water elevation was 533.04 ft amsl on October 28, 2025 (USGS 07178452).
4. MW-9D (592.90 ft amsl) was not used for contouring due to an anomalous reading and is highlighted in gray.
5. Satellite imagery provided by ESRI (December 2023).

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Potentiometric Map - Uppermost Aquifer
October 2025

AEP Northeastern Power Plant - Landfill
Oologah, Oklahoma

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Figure **1**

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Northeastern\2025\AEP-Northeastern_LF_2025-10_Oct.mxd. okiemute.commander. 12/19/2025. Project/Phase/Task.

Table 1: Residence Time Calculation Summary
Northeastern Landfill

Geosyntec Consultants, Inc.

			2025-04		2025-10	
CCR Management Unit	Monitoring Well	Well Diameter (inches)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Landfill	MW-3D [2]	2.0	0.7	82	0.8	77
	MW-4D [2]	2.0	0.7	82	0.8	76
	MW-5D [2]	2.0	1.9	32	2.0	30
	MW-6D [2]	2.0	1.4	44	5.9	10
	MW-7D [1]	2.0	0.8	77	1.1	56
	MW-8D [1]	2.0	1.2	50	2.4	26
	MW-9D [2]	2.0	0.6	100	NC	NC
	MW-12D [2]	2.0	1.6	38	1.5	41
	MW-15 [2]	2.0	0.6	97	1.0	62

Notes:
[1] - Observation Well
[2] - Downgradient Well
NC - Not calculated

Table 1. Groundwater Data Summary: SP-4
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	S.U.	mg/L	mg/L
1/25/2017	Background	0.406	57.7	401	3	7.7	37	1122
3/15/2017	Background	0.399	67	52	4	--	38	1128
4/25/2017	Background	0.442	58.8	459	3.2	7.0	41	1128
5/18/2017	Background	0.411	296	232	2.1	--	50	846
6/15/2017	Background	0.395	118	475	3.34	8.3	36	1164
6/27/2017	Background	0.388	110	471	3.2489	8.1	37	1388
7/12/2017	Background	0.42	648	489	3.863	8.1	36	1128
8/04/2017	Background	0.412	1920	469	3.078	7.7	50	1150
8/17/2017	Background	0.493	793	460	3.049	7.8	75	1132
8/30/2017	Background	0.392	612	576	4.086	7.6	74	1400
9/13/2017	Background	0.387	810	450	3.199	7.7	88	1236
9/20/2017	Background	0.477	630	440	1.747	7.2	90	1208
10/11/2017	Background	0.425	206	431	3.7702	7.4	78	1200
5/30/2018	Background	--	--	--	4.169	7.4	--	--
7/30/2018	Background	0.399	164	521	< 0.083 U1	7.6	70	1180
2/27/2019	Background	0.370	85.6	470	3.26	7.4	61.5	1122
6/20/2019	Background	0.325	56.4	450	3.24	7.1	58.0	1128
8/26/2019	Background	0.365	182	458	2.99	8.8	61	1170
3/25/2020	Background	0.340	59.6	476	3.29	9.1	68.6	1130
6/30/2020	Background	0.338	80.5	531	3.16	9.0	70.2	1160
10/21/2020	Background	0.333	63.9	441	3.24	8.9	70.4	1150
3/03/2021	Background	0.347	58.7	--	3.50	7.8	--	--
4/12/2021	Background	0.393	70.8	495	3.49	7.7	68.1	1160
12/28/2021	Background	0.342	88.7	458	3.24	7.4	79.6	1100
6/14/2022	Background	0.367	70.2	452	3.25	7.8	80.4	1160 L1
11/08/2022	Background	0.354	97.6	447	3.23	7.4	81.9	1150
6/20/2023	Background	0.323	82.1	468	3.29	7.5	83.0	1170
10/10/2023	Background	0.339	90.9	450	3.19	7.6	81.4	1160
4/16/2024	Detection	0.337	108 M1	450	3.22	7.6	81.0	1270
10/22/2024	Detection	0.346	98	448	3.22	7.9	79.4	1120
6/18/2025	Assessment	0.356	87.3	439	2.9	7.5	79	1190
10/28/2025	Assessment	0.38	105	432	3.43	8.0	92.9	1120

Table 1. Groundwater Data Summary: SP-4
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
1/25/2017	Background	< 5 U1	< 5 U1	398	< 1 U1	< 1 U1	< 1 U1	< 5 U1	4.00	3	< 5 U1	0.072	< 0.025 U1	< 5 U1	< 5 U1	< 2 U1
3/15/2017	Background	< 5 U1	< 5 U1	477	< 1 U1	< 1 U1	< 1 U1	< 5 U1	3.57	4	< 5 U1	0.073	< 0.025 U1	< 5 U1	< 5 U1	< 2 U1
4/25/2017	Background	1.36 J1	1.72 J1	578	0.03 J1	0.1 J1	0.64 J1	1.01 J1	2.566	3.2	< 0.68 U1	0.06973	< 0.005 U1	1.5 J1	< 0.99 U1	1.21 J1
5/18/2017	Background	2.04 J1	5.5	762	0.56 J1	0.57 J1	10.73	5.49	6.37	2.1	3.65 J1	0.07998	0.015 J1	1.02 J1	< 0.99 U1	< 0.86 U1
6/15/2017	Background	1.74 J1	4.59 J1	633	0.34 J1	< 0.07 U1	4.04	4.63 J1	4.18	3.34	1.39 J1	0.07422	< 0.005 U1	0.65 J1	1.67 J1	< 0.86 U1
6/27/2017	Background	< 0.93 U1	2.01 J1	576	0.24 J1	< 0.07 U1	2.98	5.29	9.64	3.2489	0.96 J1	0.07041	< 0.005 U1	0.46 J1	< 0.99 U1	< 0.86 U1
7/12/2017	Background	2.66 J1	10.65	1340	1.28	1.37	22.48	10.64	5.79	3.863	8.47	0.09243	0.01 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
8/04/2017	Background	3.87 J1	44.98	4590	4.97	6.55	84.15	40.69	4.04	3.078	36.63	0.136	0.058	5.03	4.99 J1	< 0.86 U1
8/17/2017	Background	< 0.93 U1	19.31	2310	2.12	2.05	41.82	17.86	6.71	3.049	10.7	0.111	0.03	4.23 J1	1.04 J1	< 0.86 U1
8/30/2017	Background	2.45 J1	9.13	1490	1.26	1.66	25.81	12.06	8.09	4.086	7.11	0.0962	0.021 J1	4.61 J1	1.86 J1	< 0.86 U1
9/13/2017	Background	< 0.93 U1	16.34	1910	1.71	2.47	30.83	17.71	5.92	3.199	8.92	0.104	0.029	6.21	1.65 J1	< 0.86 U1
9/20/2017	Background	2.3 J1	13.95	1930	1.77	1.9	34.55	16.32	--	1.747	9.6	0.101	0.014 J1	7.02	< 0.99 U1	< 0.86 U1
5/30/2018	Background	5.14	< 1.05 U1	268	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.49 J1	3.186	4.169	< 0.68 U1	0.06851	< 0.005 U1	3.7 J1	< 0.99 U1	1.62 J1
7/30/2018	Background	0.37	1.14	303	0.078	0.07	0.562	0.497	4.85	< 0.083 U1	0.356	0.0627	0.006 J1	3.63	0.7	0.05 J1
2/27/2019	Background	0.3 J1	1 J1	276	< 0.2 U1	< 0.1 U1	5.71	< 0.2 U1	3.144	3.26	< 0.2 U1	0.0602	< 0.005 U1	< 4 U1	0.6 J1	< 1 U1
6/20/2019	Background	0.3 J1	0.83	337	< 0.1 U1	0.07 J1	1.06	0.388	3.751	3.24	1.07	0.068	0.007 J1	2 J1	0.4 J1	< 0.5 U1
8/26/2019	Background	0.25	1.64	359	0.101	0.05	1.01	1.07	3.24	2.99	0.596	0.0554	< 0.005 U1	2 J1	0.6	< 0.1 U1
3/25/2020	Background	0.28	0.83	327	0.04 J1	0.04 J1	0.332	0.166	4.28	3.29	0.2 J1	0.0535	< 0.002 U1	4.07	0.7	< 0.1 U1
6/30/2020	Background	0.32	1.52	334	0.118	0.04 J1	1.09	1.28	4.16	3.16	0.527	0.0564	< 0.002 U1	3.57	0.7	< 0.1 U1
10/21/2020	Background	0.29	1.03	322	0.06 J1	0.07	0.523	0.508	3.42	3.24	0.359	0.0559	< 0.002 U1	3.24	0.7	< 0.1 U1
3/03/2021	Background	0.27	0.99	367	0.04 J1	0.06	0.449	0.207	5.49	3.50	1.17	0.0594	< 0.002 U1	3.60	0.6	< 0.1 U1
4/12/2021	Background	0.22	1.41	435	0.09 J1	0.04 J1	1.03	0.921	4.09	3.49	0.392	0.0613	< 0.002 U1	2.94	0.4 J1	< 0.04 U1
12/28/2021	Background	0.26	0.76	304	0.033 J1	0.035	0.47	0.240	4.48	3.24	0.14 J1	0.0529	< 0.002 U1	3.0	0.48 J1	< 0.04 U1
6/14/2022	Background	0.21	0.80	246	0.04 J1	0.024	0.56	0.159	3.56	3.25	0.10 J1	0.0571	< 0.002 U1	3.7	0.38 J1	< 0.04 U1
11/08/2022	Background	0.23	0.92	214	0.053	0.059	1.19	0.345	6.29	3.23	0.38	0.0579	< 0.002 U1	3.5	0.39 J1	< 0.04 U1
6/20/2023	Background	0.192	1.26	204	0.074	0.044	0.61	0.470	7.96	3.29	0.21	0.0507	< 0.002 U1	2.8	0.41 J1	0.02 J1
10/10/2023	Background	0.249	0.84	232	0.036 J1	0.057	0.59	0.218	3.23	3.19	0.38	0.0554	< 0.002 U1	3.3	0.30 J1	0.02 J1
4/16/2024	Detection	0.169	0.70	190	0.033 J1	0.019 J1	0.27 J1	0.123	3.49	3.22	0.10 J1	0.0527	< 0.002 H2, Q5, Q1, U1	3.2	0.38 J1	< 0.02 U1
10/22/2024	Detection	0.147	0.70	190	0.038 J1	0.021	0.45	0.146	3.67	3.22	0.09 J1	0.054	< 0.002 U1	2.5	0.28 J1	0.03 J1
6/18/2025	Assessment	0.166	0.80	210	0.057	0.026	0.56	0.369	3.29	2.9	0.17 J1	0.0544	< 0.002 U1	2.4	0.30 J1	0.02 J1
10/28/2025	Assessment	0.3 J1	1.6	205	0.2 J1	0.06 J1	1.1 J1	0.75	3.13	3.43	0.7 J1	0.0585	< 0.002 U1	2.9	0.9 J1	0.1 J1

Table 1. Groundwater Data Summary: SP-5R
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	S.U.	mg/L	mg/L
1/25/2017	Background	0.233	52.4	500	3	8.0	10	1354
3/15/2017	Background	0.236	61.7	62	4	--	10	1420
4/25/2017	Background	0.245	53.8	674	3.06	7.5	9	1436
5/18/2017	Background	0.319	79.1	1834	4	--	8	3008
6/15/2017	Background	0.231	57.1	607	3	8.3	7	1368
6/27/2017	Background	0.224	53	636	2.835	8.2	8	1156
7/12/2017	Background	0.261	53.8	640	3.156	8.2	7	1388
8/04/2017	Background	0.256	61.3	638	2.889	7.9	8	1372
8/17/2017	Background	0.293	52	661	3.258	8.2	6	1378
8/30/2017	Background	0.252	57.3	652	3.5698	7.7	7	1424
9/13/2017	Background	0.232	55.6	644	2.797	8.4	6	1452
9/20/2017	Background	0.257	53.7	729	1.535	7.4	6	1312
10/11/2017	Background	0.61	71	630	3.7844	7.5	5	1368
5/30/2018	Background	--	--	--	4.1115	7.6	--	--
7/30/2018	Background	0.246	131	793	4.3905	8.0	4	1480
2/27/2019	Background	0.233	72.8	739	3.08	7.7	1.6	1530
6/20/2019	Background	0.202	48.5	675	3.06	7.3	0.9 J1	1428
8/26/2019	Background	0.220	128	697	2.789	8.8	3	1450
3/25/2020	Background	0.214	49.2	790	3.13	8.8	0.8 J1	1580
6/30/2020	Background	0.211	64.9	840	2.99	9.0	5.1	1560
10/21/2020	Background	0.188	50.4	584	3.03	8.8	5.0	1320
3/03/2021	Background	0.188	52.4	--	3.18	7.6	--	--
4/12/2021	Background	0.215	54.6	725	3.20	7.9	7.0	1420
12/27/2021	Background	0.190	71.7	660	3.09	7.4	6.1	1370
6/14/2022	Background	0.209	52.5	675	3.09	7.7	4.7	1410 L1
11/07/2022	Background	0.256	90.2	1010	3.28	7.4	2.8	1940
6/20/2023	Background	0.191	94.5	782	3.09	7.5	3.8	1580
10/10/2023	Background	0.228	107	964	3.21	7.3	2.6	1830
4/16/2024	Detection	0.189	90.5	690	3.04	7.5	4.4	1430
10/22/2024	Detection	0.201	82	721	3.06	7.8	2.3	1430
6/18/2025	Assessment	0.226	73.8	797	3.31	7.7	2.8	1590
10/28/2025	Assessment	0.23 J1	85.6	739	3.36	8.1	2.0	1460

Table 1. Groundwater Data Summary: SP-5R
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	12	1650	< 1 U1	< 1 U1	< 1 U1	< 5 U1	10.09	3	< 5 U1	0.114	< 0.025 U1	< 5 U1	< 5 U1	< 2 U1
3/15/2017	Background	< 5 U1	13	1590	< 1 U1	< 1 U1	1	< 5 U1	9.65	4	< 5 U1	0.112	< 0.025 U1	< 5 U1	< 5 U1	< 2 U1
4/25/2017	Background	< 0.93 U1	17.03	1610	0.03 J1	< 0.07 U1	0.33 J1	0.88 J1	10.27	3.06	< 0.68 U1	0.112	0.016 J1	1.16 J1	< 0.99 U1	< 0.86 U1
5/18/2017	Background	< 0.93 U1	29.42	2270	0.23 J1	< 0.07 U1	3.41	2.32 J1	15.30	4	2.36 J1	0.163	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/15/2017	Background	2.02 J1	13.7	2050	0.11 J1	< 0.07 U1	1.42	1.44 J1	10.27	3	< 0.68 U1	0.109	0.016 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/27/2017	Background	< 0.93 U1	12.65	1790	0.02 J1	< 0.07 U1	0.3 J1	1.01 J1	15.84	2.835	0.76 J1	0.1	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/12/2017	Background	< 0.93 U1	17.24	1880	0.06 J1	< 0.07 U1	0.5 J1	1.1 J1	12.21	3.156	0.9 J1	0.111	< 0.005 U1	< 0.29 U1	1.14 J1	< 0.86 U1
8/04/2017	Background	< 0.93 U1	21.6	1800	0.09 J1	< 0.07 U1	1.69	1.32 J1	11.60	2.889	1.44 J1	0.119	0.015 J1	1.27 J1	< 0.99 U1	< 0.86 U1
8/17/2017	Background	1.63 J1	19.11	1890	0.04 J1	< 0.07 U1	< 0.23 U1	1 J1	10.95	3.258	< 0.68 U1	0.106	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
8/30/2017	Background	< 0.93 U1	19.47	1930	0.11 J1	< 0.07 U1	1.16	1.2 J1	12.47	3.5698	< 0.68 U1	0.112	0.009 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
9/13/2017	Background	< 0.93 U1	20.36	1930	0.1 J1	0.16 J1	0.62 J1	1 J1	10.62	2.797	< 0.68 U1	0.11	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
9/20/2017	Background	< 0.93 U1	20.77	1880	0.05 J1	< 0.07 U1	< 0.23 U1	0.97 J1	10.50	1.535	1.06 J1	0.111	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
5/30/2018	Background	1.21 J1	28.86	1760	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.88 J1	9.15	4.1115	< 0.68 U1	0.102	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/30/2018	Background	0.05 J1	47.3	2140	0.052	0.02 J1	0.082	0.482	11.28	4.3905	0.415	0.0946	< 0.005 U1	1.17	0.1	0.02 J1
2/27/2019	Background	< 0.2 U1	25.7	2130	< 0.2 U1	< 0.1 U1	2 J1	0.3 J1	6.702	3.08	0.7 J1	0.102	< 0.005 U1	< 4 U1	< 0.3 U1	< 1 U1
6/20/2019	Background	< 0.1 U1	59.9	2410	< 0.1 U1	< 0.05 U1	0.8 J1	0.598	12.977	3.06	0.701	0.111	0.008 J1	< 2 U1	< 0.2 U1	< 0.5 U1
8/26/2019	Background	0.06 J1	49.3	2340	0.06 J1	0.02 J1	0.335	0.485	11.56	2.789	0.545	0.0928	< 0.005 U1	1 J1	0.1 J1	< 0.1 U1
3/25/2020	Background	0.05 J1	26.2	2600	0.04 J1	0.02 J1	0.346	0.296	12.09	3.13	0.371	0.0911	< 0.002 U1	1 J1	0.1 J1	< 0.1 U1
6/30/2020	Background	0.13	27.0	2520	0.151	0.04 J1	1.51	0.774	14.34	2.99	1.65	0.0913	< 0.002 U1	1 J1	0.5	< 0.1 U1
10/21/2020	Background	0.10	10.9	2070	0.05 J1	< 0.01 U1	0.320	0.378	6.502	3.03	0.373	0.0792	< 0.002 U1	0.8 J1	0.2 J1	< 0.1 U1
3/03/2021	Background	0.16	6.56	1840	0.05 J1	0.27	0.496	0.391	13.31	3.18	0.793	0.0856	< 0.002 U1	0.7 J1	0.1 J1	< 0.1 U1
4/12/2021	Background	0.09 J1	7.12	2180	0.05 J1	0.01 J1	0.415	0.378	14.10	3.20	0.325	0.0894	< 0.002 U1	1 J1	0.1 J1	< 0.04 U1
12/27/2021	Background	0.09 J1	10.0	1840	0.031 J1	0.029	0.26	0.257	13.16	3.09	0.18 J1	0.0766	< 0.002 U1	0.9	< 0.09 U1	< 0.04 U1
6/14/2022	Background	0.19	20.3	2010	0.07 J1	0.200	0.47	0.699	11.26	3.09	0.66	0.0896	< 0.002 U1	0.9	0.1 J1	< 0.04 U1
11/07/2022	Background	0.16	14.2	2070	0.066	0.108	0.75	0.511	9.37	3.28	4.34	0.120	< 0.002 U1	0.8	0.11 J1	< 0.04 U1
6/20/2023	Background	0.230	9.09	2120	0.276	0.074	2.73	1.18	16.19	3.09	2.11	0.0822	< 0.002 U1	0.8	0.91	0.05 J1
10/10/2023	Background	0.195	15.8	2770	0.201	0.076	2.64	1.03	24.78	3.21	2.52	0.123	< 0.002 U1	0.7	0.94	0.04 J1
4/16/2024	Detection	0.131	6.69	1970	0.061	0.038	0.45	0.321	8.39	3.04	0.66	0.0856	< 0.002 U1	0.7	0.13 J1	< 0.02 U1
10/22/2024	Detection	0.117	16.1	2080	0.108	0.038	0.77	0.841	12.38	3.06	1.05	0.086	< 0.002 U1	0.7	0.20 J1	< 0.02 U1
6/18/2025	Assessment	0.102	14.7	2240	0.059	0.022	0.57	1.56	12.27	3.31	0.91	0.0922	< 0.002 U1	0.7	0.05 J1	< 0.02 U1
10/28/2025	Assessment	0.1 J1	20.7	2200	< 0.1 U1	< 0.02 U1	1.0 J1	0.61	11.39	3.36	1.7	0.0962	< 0.002 U1	0.7 J1	0.2 J1	< 0.1 U1

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	S.U.	mg/L	mg/L
5/30/2018	Assessment	1.2	135	--	--	7.4	--	--
11/07/2022	Background	1.20	163	237	1.41	7.4	1330	2740
12/12/2022	Background	2.22	328	265	1.44	7.5	1340	3170
1/24/2023	Background	1.30	186	--	--	7.3	--	--
4/08/2025	Assessment	1.01	264	--	--	8.1	--	--

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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
5/30/2018	Assessment	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
11/07/2022	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
4/08/2025	Assessment	0.386	4.91	210	1.07	0.986	13.2	8.66	--	--	13.0	0.0877	0.019	8.4	5.54	0.22

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	S.U.	mg/L	mg/L
5/02/2018	Background	10.5	7.52	14	2.028	10.6	628	1206
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	1218
8/26/2019	Background	10.7	14.3	12	1.661	12.8	591	1236
6/29/2020	Background	11.3	11.9	11.5	1.91	13.7	732	1310
4/13/2021	Background	10.6	12.5	12.1	1.81	11.0	654	1250
6/14/2022	Background	8.46	18.5	15.5	1.22	10.1	617	1180 L1
2/21/2023	Background	8.67	8.48	14.9	1.58	10.4	634	1260
3/08/2023	Background	9.55	9.2	14.0	1.58	10.8	638	1180
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	1180
4/16/2024	Background	9.01	13.3	15.6	1.38	10.3	602	1100
4/07/2025	Assessment	9.09	14.7	13.9	1.34	10.3	658	1230
10/28/2025	Assessment	9.88	13.1	12.4	1.72	11.2	665	1270

Table 1. Groundwater Data Summary: MW-2D
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
5/02/2018	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
3/08/2023	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
4/10/2023	Background	0.61 J1	27.5	43.2	0.09 J1	1.27	15.9	2.12	1.73	--	9.9	0.0016 J1	0.024	491	21.1	0.5 J1
6/20/2023	Background	0.54 J1	25.1	26.3	< 0.07 U1	0.24	2.0 J1	0.47	--	--	2.6	0.0013 J1	0.034	503	18.5	0.3 J1
10/10/2023	Background	--	--	--	--	--	--	--	--	1.48	--	--	--	--	--	--
4/16/2024	Background	0.51 J1	21.2	33.1	0.28 J1	0.36	4.3	0.47	--	1.38	4.4	0.0010 J1	--	455	12.4	0.2 J1
4/07/2025	Assessment	0.380	14.9	17.4	< 0.007 U1	0.168	0.43	0.289	1.02	1.34	1.21	0.00146	0.015	465	14.4	0.11 J1
10/28/2025	Assessment	0.55	28.6	17.8	< 0.02 U1	0.336	0.93	0.46	0.37	1.72	2.07	0.00134	0.044	537	57.8	0.50

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	S.U.	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
8/04/2017	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
5/02/2018	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
5/07/2019	Detection	1.56	--	--	--	--	--	--
8/26/2019	Detection	0.979	130	12	0.608 J1	8.5	181	686
12/03/2019	Detection	--	--	--	--	7.4	--	--
6/30/2020	Detection	0.941	116	13.7	0.77	8.6	206	680
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
11/07/2022	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
4/16/2024	Detection	0.872	116	12.7	0.79	7.5	168	610
8/26/2024	Detection	0.835	--	--	--	7.3	167	--
10/22/2024	Detection	0.815	117	13.0	0.81	7.3	164	590
4/08/2025	Assessment	0.893	116	12.9	0.94	7.9	163	620
10/28/2025	Assessment	0.856	111	13.3	0.88	7.8	167	680

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	1040	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
8/04/2017	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
4/08/2025	Assessment	0.055 J1	8.21	115	0.064	0.109	0.90	0.381	3.47	0.94	1.01	0.0132	0.003 J1	2.9	0.20 J1	< 0.02 U1
10/28/2025	Assessment	0.09 J1	4.00	98.3	0.03 J1	0.022	0.55	0.11	3.45	0.88	0.26	0.0136	< 0.002 U1	4.79	0.34 J1	< 0.02 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	S.U.	mg/L	mg/L
3/15/2017	Background	--	209	25	< 1 U1	--	237	848
5/02/2018	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
5/07/2019	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
11/07/2022	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
4/16/2024	Detection	1.01	179	28.4	0.25	7.2	348	940
8/26/2024	Detection	0.642	170	--	--	7.1	270	--
10/22/2024	Detection	0.583	209	37.6	0.25	7.1	302	860
4/07/2025	Assessment	0.958	221	36.7	0.28	6.9	429	1110
10/28/2025	Assessment	0.662	175	37.5	0.26	7.4	308	870

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
5/02/2018	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
4/07/2025	Assessment	0.131	2.44	130	0.053	0.467	1.62	3.43	1.33	0.28	1.37	0.00417	< 0.002 U1	3.8	0.69	0.09 J1
10/28/2025	Assessment	0.08 J1	2.17	118	0.07	0.321	1.50	1.69	1.53	0.26	1.15	0.00367	< 0.002 U1	3.14	0.36 J1	0.05 J1

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	S.U.	mg/L	mg/L
3/14/2017	Background	--	127	--	--	--	--	--
5/02/2018	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
5/07/2019	Detection	--	--	--	--	--	158	--
8/26/2019	Detection	0.568	146	24	0.412 J1	9.8	134	670
12/03/2019	Detection	--	--	--	--	7.2	--	--
6/29/2020	Detection	0.508	124	26.7	0.57	8.7	165	641
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
11/07/2022	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
4/16/2024	Detection	0.400	115	25.9	0.58	7.4	129	580
8/26/2024	Detection	0.427	--	--	--	7.5	129	--
10/22/2024	Detection	0.409	121	25.6	0.58	7.1	123	560
4/08/2025	Assessment	0.425	117	24.8	0.67	7.9	119	570
10/28/2025	Assessment	0.409	118	24.5	0.62	7.9	124	590

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
5/02/2018	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
4/08/2025	Assessment	0.085 J1	0.72	127	0.047 J1	0.033	0.67	0.280	2.79	0.67	0.49	0.0104	< 0.002 U1	1.4	0.18 J1	< 0.02 U1
10/28/2025	Assessment	0.07 J1	0.63	97.4	0.02 J1	0.015 J1	0.34	0.11	2.31	0.62	0.19 J1	0.00974	< 0.002 U1	1.21	0.23 J1	< 0.02 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	S.U.	mg/L	mg/L
6/15/2017	Background	3.51	201	28	0.8054 J1	7.5	508	1054
6/27/2017	Background	0.877	133	29	0.7596 J1	7.9	524	1024
7/12/2017	Background	3.49	218	30	< 0.083 U1	7.3	504	1044
8/04/2017	Background	3.64	222	31	0.7656 J1	6.4	532	1022
8/17/2017	Background	3.55	211	30	0.729 J1	6.9	509	1016
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	1140
9/20/2017	Background	3.81	196	32	< 0.083 U1	7.1	505	1008
10/11/2017	Detection	3.74	165	29	0.9597 J1	6.9	545	1032
1/22/2018	Detection	4.24	--	--	0.76 J1	6.9	494	--
5/02/2018	Detection	3.52	173	31	0.806 J1	7.3	406	1062
5/30/2018	Detection	3.35	269	32	0.9218 J1	7.4	401	1090
10/22/2018	Detection	4.34	237	31.68	1.28	7.3	471.81	1152
11/28/2018	Detection	--	--	--	0.844 J1	7.7	--	--
2/27/2019	Detection	3.63	360	26.9	0.89	7.6	496	1144
5/07/2019	Detection	--	185	--	--	--	--	1038
8/26/2019	Detection	2.88	181	13	0.634 J1	8.6	401	1044
12/03/2019	Detection	--	--	--	--	7.5	--	--
6/30/2020	Detection	3.07	180	24.9	0.76	8.8	533	1080
10/21/2020	Detection	3.00	170	29.9	0.75	8.7	426	1060
12/16/2020	Detection	--	--	--	--	7.1	--	--
4/13/2021	Detection	3.35	170	28.4	0.93	8.1	478	1090
12/28/2021	Detection	2.98	163	27.0	0.93	7.1	469	1040
6/14/2022	Detection	3.04	203	28.7	1.01	7.3	451	1090 L1
11/07/2022	Detection	3.00	171	30.2	0.92	7.1	455	1050
6/20/2023	Detection	2.75	161	28.5	0.88	7.1	466	1070
10/10/2023	Detection	2.56	168	27	0.82	7.6	454	1030
4/16/2024	Detection	2.57	201	27.1	0.83	7.5	873	1060
8/26/2024	Detection	2.70	171	--	--	7.5	468	--
10/22/2024	Detection	2.31	90.8	27.0	0.81	7.4	443	1100
4/08/2025	Assessment	2.76	178	27.0	0.92	7.9	448	1080
10/28/2025	Assessment	2.50	200	24.5	0.79	7.6	400	1000

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
8/04/2017	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
4/08/2025	Assessment	0.104	1.65	62.8	0.084	0.144	1.97	0.932	1.91	0.92	2.17	0.0165	< 0.002 U1	76.1	0.60	0.02 J1
10/28/2025	Assessment	0.17	1.92	119	0.7	0.216	3.54	1.66	1.89	0.79	3.50	0.0159	< 0.002 U1	70.1	1.27	0.05 J1

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	S.U.	mg/L	mg/L
6/15/2017	Background	7.09	229	100	0.9857 J1	7.1	781	1458
6/27/2017	Background	7.01	191	232	0.8986 J1	7.7	876	1114
7/12/2017	Background	7.63	244	98	2.191	7.4	1048	2146
8/04/2017	Background	7.59	337	60	0.6947 J1	7.0	1217	2256
8/17/2017	Background	7.46	328	216	0.681 J1	7.1	1193	2486
8/30/2017	Background	6.93	354	64	< 0.083 U1	7.3	1192	2392
9/13/2017	Background	6.78	366	293	0.37 J1	7.2	1244	2826
10/04/2017	Background	6.68	304	180	< 0.083 U1	7.3	1079	2296
10/11/2017	Detection	7.07	288	314	1.5191	7.1	1075	2188
1/22/2018	Detection	7.43	--	--	--	7.1	--	--
10/22/2018	Detection	7.19	199	106	0.6 J1	7.1	519.42	1258
2/27/2019	Detection	6.49	155	28.9	0.89	7.6	555	1174
8/26/2019	Detection	6.95	136	24	0.758 J1	8.8	526	1084
12/03/2019	Detection	--	--	--	--	7.6	--	--
6/30/2020	Detection	6.51	128	26.2	0.95	10.9	602	1070
10/21/2020	Detection	6.12	129	25.3	0.97	8.9	547	1160
12/16/2020	Detection	--	--	--	--	7.5	--	--
4/13/2021	Detection	6.70	158	26.1	0.99	8.2	594	1180
6/22/2021	Detection	--	--	--	--	7.6	--	--
6/14/2022	Detection	6.19	196	25.9	0.93	7.3	775	1560 L1
8/15/2022	Detection	--	--	--	--	7.2	--	1250
11/07/2022	Detection	6.11	160	26.2	0.92	8.5	624	1270
6/20/2023	Detection	6.12 M1	204 M1	--	--	7.2	--	--
10/10/2023	Detection	5.87	186	25.5	0.8	8.3	783	1570
12/28/2023	Detection	--	--	--	--	7.4	--	1210
4/16/2024	Detection	5.67	299	25.0	0.88	7.9	625	1330
8/26/2024	Detection	5.65	141	--	--	7.8	529	--
10/22/2024	Detection	4.85	91.4	23.4	0.82	8.3	546	1160
4/08/2025	Assessment	6.14	257	23.0	0.86	8.6	508	1140
10/28/2025	Assessment	5.96	171	24.0	0.87	9.0	527	1140 S7
12/09/2025	Assessment	--	--	--	--	8.6	--	--

Table 1. Groundwater Data Summary: MW-9D
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
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
8/04/2017	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
10/04/2017	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	--	--	--	--	--	--	--
4/08/2025	Assessment	0.31 J1	3.1	162	0.34	0.52	7.0	5.79	1.65	0.86	12.2	0.0163	< 0.002 U1	104	2.4 J1	0.1 J1
10/28/2025	Assessment	0.1 J1	1.1	95.1	0.05 J1	0.15	2.6	2.40	--	0.87	2.9	0.0158	< 0.002 U1	160	1.0 J1	< 0.1 U1
12/09/2025	Assessment	--	--	--	--	--	--	--	0.46	--	--	--	--	--	--	--

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	S.U.	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	--	--
4/08/2025	Assessment	1.4	131	--	--	8.4	--	--

Table 1. Groundwater Data Summary: MW-10D
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	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
4/08/2025	Assessment	0.6 J1	3.6	91	0.117	0.09 J1	5 J1	0.6	--	--	< 1 U1	0.306	< 0.002 U1	17	19.0	< 0.2 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	S.U.	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	S.U.	mg/L	mg/L
3/15/2017	Background	--	76.9	16	2	--	613	1142
5/02/2018	Background	8.63	184	17	2.199	7.4	541	1044
5/30/2018	Background	8.35	89.9	91	2.379	7.7	542	1088
6/27/2018	Background	8.45	74.9	17	1.988	8.2	586	1070
7/31/2018	Background	8.72	108	22	2.6173	8.7	662	1034
8/30/2018	Background	9.71	141	--	--	9.2	--	1050
9/19/2018	Background	9.02	110	21	2.8416	8.1	582	1052
10/15/2018	Background	8.68	70.0	21	2.99	9.4	561.2	1060
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	1068
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	1014
8/26/2019	Detection	8.90	96.3	14	1.6	8.7	540	1018
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	1060
4/13/2021	Detection	7.96	79.0	16.1	2.00	8.4	590	1030
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
11/08/2022	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
4/16/2024	Detection	6.64	67.7	13.2	1.63	8.4	502	930
8/26/2024	Detection	6.40	--	--	--	8.4	512	--
10/22/2024	Detection	5.77	101	12.6	1.71	8.2	474	900
4/08/2025	Assessment	6.09	58.4	12.2	1.79	8.3	478	910
10/28/2025	Assessment	7.03	57.8	10.6	1.90	9.1	408	810

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
5/02/2018	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
4/08/2025	Assessment	0.07 J1	1.63	36.8	0.05 J1	0.080	0.9	0.46	1.42	1.79	1.7	0.0041	< 0.002 U1	447	1.14	0.05 J1
10/28/2025	Assessment	0.14 J1	2.24	37.0	< 0.02 U1	0.067	1.1	0.43	1.64	1.90	2.3	0.0033	0.005	498	1.28	0.04 J1

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	S.U.	mg/L	mg/L
3/15/2017	Background	--	203	7	< 1 U1	7.5	402	1116
5/02/2018	Background	1.08	172	5	< 0.083 U1	7.1	354	1064
5/30/2018	Background	0.864	171	6	0.4361 J1	6.9	343	1068
6/27/2018	Background	1.35	212	--	--	7.3	--	--
6/29/2020	Background	0.954	188	4.68	0.32	8.3	476	1100
4/13/2021	Background	1.39	192	5.83	0.46	7.7	519	1170
12/27/2021	Background	0.832	184	4.82	0.38	7.0	435	1120
6/14/2022	Background	0.742	167	4.36	0.37	7.3	341	990 L1
11/08/2022	Background	0.752	181	4.41	0.34	7.0	397	1060
12/12/2022	Background	1.08	199	--	--	7.2	--	--
3/08/2023	Background	1.39	245	--	--	7.0	--	--
6/20/2023	Background	1.74	197	10.8	0.45	7.1	606	1290
4/16/2024	Background	2.32	212	10.2	0.47	7.2	669	1320
10/22/2024	Background	0.827	86.0	6.36	0.40	7.3	502	1160
4/08/2025	Assessment	0.602	146	4.28	0.38	7.3	348	1010
10/28/2025	Assessment	0.649	166	5.02	0.37	8.1	423	1130

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
5/02/2018	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	--	--	--	--	--	--
11/08/2022	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
3/08/2023	Background	0.47	2.63	131	0.244	0.286	4.05	2.59	--	--	3.51	0.0220	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
4/16/2024	Background	0.202	1.73	73.0	0.143	0.161	2.23	3.11	--	0.47	2.26	0.0173	< 0.002 U1	16.0	3.59	0.05 J1
10/22/2024	Background	--	--	--	--	--	--	--	3.12	0.40	--	--	< 0.002 U1	--	--	--
4/08/2025	Assessment	0.318	0.59	36.3	0.044 J1	0.109	0.63	0.390	4.07	0.38	0.69	0.0309	< 0.002 U1	7.1	7.80	0.02 J1
10/28/2025	Assessment	0.31	1.86	56.9	2.5	0.171	1.41	2.04	2.99	0.37	1.17	0.0257	< 0.002 U1	6.78	5.70	0.06 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	S.U.	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	3117	3.066	8.6	357	6198
6/30/2020	Background	1.36	60.8	2980	3.97	8.5	189	5370
10/21/2020	Background	1.39	64.3	2830	4.22	8.6	226	11900
12/28/2021	Background	1.20	58.2	2920	4.5	7.2	278	5890
11/08/2022	Background	1.29	100 M1	2870	4.9	7.2	214	5600
12/12/2022	Background	1.23	75.3	--	--	7.3	--	--
1/24/2023	Background	1.16	129	--	--	7.5	--	--
3/08/2023	Background	1.31	50.5	2710	4.7	8.1	255	5390
4/10/2023	Background	1.55	106	--	--	7.4	--	--
10/10/2023	Background	1.42	122	2880	4.2	7.4	346	5840
4/16/2024	Background	0.7 J1	71.0	920	2.7	7.3	136	1900
10/22/2024	Background	0.267	102	890	1.9	7.7	90	2400
4/08/2025	Assessment	1.0	83.0	1820	4.4	7.8	68	3890
10/28/2025	Assessment	1.4	100	--	--	7.9	--	--

Table 1. Groundwater Data Summary: MW-14
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 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	--	--	--	--
11/08/2022	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
3/08/2023	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	25.0	2.01	--	--	6.6	0.312	0.006	30	4.0 J1	< 0.2 U1
10/10/2023	Background	--	--	--	--	--	--	--	--	4.2	--	--	--	--	--	--
4/16/2024	Background	0.5 J1	< 0.6 U1	152	< 0.1 U1	0.13 J1	< 1 U1	0.2 J1	--	2.7	< 1 U1	0.138	0.004 J1	9 J1	3.8 J1	< 0.2 U1
10/22/2024	Background	--	--	--	--	--	--	--	0.58	1.9	--	--	--	--	--	--
4/08/2025	Assessment	< 0.2 U1	3.4	352	< 0.1 U1	< 0.08 U1	3 J1	2.8	1.59	4.4	< 1 U1	0.229	< 0.002 U1	8 J1	< 0.8 U1	< 0.2 U1
10/28/2025	Assessment	0.6 J1	2.2	309	< 0.02 U1	0.19 J1	5 J1	2.5	--	--	4	0.273	0.006	13	1.4 J1	< 0.2 U1

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	S.U.	mg/L	mg/L
1/25/2017	Background	9.45	87	19	2	8.0	530	1112
3/13/2017	Background	8.23	104	28	2	--	551	1110
4/25/2017	Background	9.44	73.1	78	1.83	7.6	558	1128
5/18/2017	Background	10.2	52.2	111	2	--	596	1092
6/15/2017	Background	9.74	126	24	1.96	7.9	559	1060
6/27/2017	Background	9.75	79.2	22	1.8739	8.5	616	1072
7/12/2017	Background	9.87	110	19	1.894	8.2	632	1076
8/04/2017	Background	9.66	86.3	19	1.759	7.6	612	1032
8/17/2017	Background	9.53	93.1	18	1.691	7.8	572	1110
8/30/2017	Background	9.59	64.9	17	2.0289	6.7	590	1038
9/13/2017	Background	9.13	68	17	1.671	8.6	584	1080
9/20/2017	Background	9.65	67.6	15	0.642 J1	7.5	543	1036
10/11/2017	Detection	9.62	80.1	46	1.9468	7.6	593	1124
1/22/2018	Detection	9.16	--	--	--	7.2	--	--
5/30/2018	Detection	8.76	105	33	2.331	7.7	549	1128
10/15/2018	Detection	--	--	--	2.27	--	--	--
10/22/2018	Detection	8.90	250	46.81	2.17	7.8	549.46	1082
11/28/2018	Detection	--	119	--	--	8.3	--	--
2/27/2019	Detection	8.34	96.9	24.3	1.45	8.6	574	1046
8/26/2019	Detection	8.28	119	20	1.252	10.5	587	1072
12/03/2019	Detection	--	--	--	--	7.7	--	--
6/30/2020	Detection	8.00	105	17.9	1.55	9.3	706	1100
10/21/2020	Detection	7.79	117	15.7	1.53	11.5	631	1140
12/16/2020	Detection	--	--	--	--	7.8	--	--
4/13/2021	Detection	8.40	93.5	15.5	1.71	8.8	659	1100
6/22/2021	Detection	--	--	--	--	7.8	662	--
12/28/2021	Detection	7.28	123	15.9	1.49	7.5	631	1090
6/14/2022	Detection	8.71	85.5	15.3	1.71	8.7	643	1080 L1, S7
11/07/2022	Detection	7.08	122	17.0	1.32	7.9	628	1090
6/20/2023	Detection	6.96	129	16.3	1.42	8.0	635	1080
10/10/2023	Detection	6.61	122	15.7	1.28	8.0	619	1080
4/16/2024	Detection	6.73	113 M1	16.6	1.26	7.9	612	1100
8/26/2024	Detection	6.69	--	--	--	7.7	638	--
10/22/2024	Detection	6.19	124	15.7	1.28	8.2	608	1080
4/07/2025	Assessment	7.54	93.0	14.1	1.55	8.7	644	1090
10/28/2025	Assessment	7.66	102	14.1	1.58	8.8	650	1180 S7

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
8/04/2017	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
4/07/2025	Assessment	0.069 J1	2.02	57.8	0.017 J1	0.033	0.68	0.194	1.16	1.55	0.42	0.00691	0.002 J1	434	0.46 J1	< 0.02 U1
10/28/2025	Assessment	0.16	3.07	110	0.06	0.056	1.46	0.51	1.87	1.58	1.56	0.00695	< 0.002 U1	500	1.30	0.02 J1

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	S.U.	mg/L	mg/L
5/18/2017	Background	4.77	338	62	< 0.083 U1	--	499	1314
6/15/2017	Background	4.1	154	56	0.879 J1	8.5	467	1328
8/17/2017	Background	6.48	201	36	0.84 J1	7.2	745	1856

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	S.U.	mg/L	mg/L
6/27/2017	Background	1.13	894	38	0.9268 J1	7.5	820	1592
8/17/2017	Background	1.2	789	28	0.699 J1	7.4	1078	2046
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	--	--
11/07/2022	Detection	1	231	11.3	0.89	7.0	440	1010
2/21/2023	Detection	1.2	469	11.7	0.68	7.3	764	1500 S7
4/08/2025	Assessment	1.0	241	--	--	7.8	--	--

Table 1. Groundwater Data Summary: MW-17
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
6/27/2017	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
4/08/2025	Assessment	0.4 J1	2.0	111	0.3 J1	0.98	8	7.0	--	--	7	0.020	< 0.002 U1	14	13.9	< 0.2 U1

Notes:
Combined radium values were calculated from the sum of the reported radium-226 and radium-228 results.
Radium data quality flags were not included. Reported negative radium-226 or radium-228 results were replaced with zero.
--: 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.
H2: Sample analysis performed past holding time.
J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.
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.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
S7: Sample did not achieve constant weight.
SU: standard unit
µg/L: micrograms per liter

NE CCR Units

Landfill Distance between wells.

	MW1D	MW2D	MW3D	MW4D	MW5D	MW6D	MW7D	MW8D	MW9D	MW10D	MW11D	MW12D	MW13D	MW14	MW15	MW-16	MW-17
MW1D	-	1310.9	1432.3	2423.7	692.7	1022.1	1379.1	837.6	1071.3	425.4	759.9	1071.5	1400.8	393.3	1262.4	1063.5	1081.8
MW2D		-	1634.9	2820.3	640.46	853.7	2044.8	2024.5	470.4	1458.2	854.0	532.9	284.9	1651.2	96.8	538.6	931.7
MW3D			-	1185.0	1596.7	783.1	642.6	2178.2	1166.8	1869.4	1843.4	1907.6	1932.2	1360.9	1548.4	1095.7	702.8
MW4D				-	2749.0	1975.0	1059.3	2997.7	2365.6	2367.5	2969.9	3084.3	3110.0	2198.6	2735.2	2297.8	1875.8
MW5D					-	887.4	1814.0	1365.3	654.3	795.2	292.2	385.4	701.4	1086.4	658.8	699.6	981.5
MW6D						-	1214.7	1864.0	391.2	1405.8	1155.3	1134.2	1151.9	1181.5	773.9	131.6	11.7
MW7D							-	1942.1	1607.6	1758.5	2006.3	2168.0	2306.8	1139.0	1969.5	1525.8	1167.2
MW8D								-	1885.8	563.4	1244.4	1633.3	2036.8	828.7	2015.9	1902.5	1916.8
MW9D									-	1363.6	895.9	809.8	738.2	1345.5	385.8	78.5	486.6
MW10D										-	702.5	1081.7	1465.2	671.1	1442.0	1371.0	1461.4
MW11D											-	395.4	801.6	1145.4	851.1	969.7	1237.4
MW12D												-	418.7	1473.7	583.2	884.4	1229.6
MW13D													-	1774.2	389.2	837.6	1234.9
MW14														-	1604.9	1309.3	1221.9
MW15															-	470.7	856.8
MW-16																-	396.9
MW-17																	-
MW-18																	
MW-19																	

NE Landfill

Hydraulic gradient. Use row **84** 10/28/2025

	MW1D	MW2D	MW3D	MW4D	MW5D	MW6D	MW7D	MW8D	MW9D	MW10D	MW11D	MW12D	MW13D	MW14	MW15	MW-16	MW-17	
MW1D	-	0.0021664	0.007045	0.000751	0.041708	0.01539906	0.0238568	0.0254665	0.0091758	0.0284908	0.0036322	0.02378	0.0014492	0.0306405	0.000856	0.00710847	0.0005454	max
MW2D		-	0.004435	0.001652	0.040674	0.01511052	0.0147009	0.0091333	0.0148603	0.0102589	0.0065571	0.0424845	0.0170961	0.0090177		0.01931075	0.0036813	min
MW3D			-	0.01005	0.011775	0.00721538	0.0354975	0.0051601	0.0002228	0.0118806	0.0069707	0.0080676	0.0062728	0.0162683	0.005819	0.01610798	0.0151974	
MW4D				-	0.011171	0.00889136	0.032777	0.0077226	0.0049249	0.0043506	0.0003165	0.0088513	6.752E-05	0.004653	0.00106	0.0024981	0.0006557	
MW5D					-	0.0148184	0.0022106	0.0055372	0.0291308	0.0515745	0.1083273	0.008847	0.0440826	0.0376855	0.042216	0.05210269	0.0300344	
MW6D						-	0.0141273	0.0029999	0.0151062	0.0198185	0.0160127	0.0085874	0.0154269	0.0235219	0.018943			
MW7D							-	0.0059575	0.0143502	0.0256011	0.0177743	0.0034225	0.0151422	0.0394658	0.016156	0.02651706	0.0286924	
MW8D								-	0.0060983	0.0593675	0.019359	0.0025409	0.0114691	0.0402795	0.010045	0.0151852	0.0114357	
MW9D									-	0.0160976	0.0140529	0.019326	0.0160663	0.016262	0.022681		0.0214139	
MW10D										-	0.0133233	0.0347604	0.0068964	0.0001043	0.009154	0.00332616	0.0078899	
MW11D											-	0.0714141	0.0009107	0.0081107	0.004512	0.00494993	0.0017537	
MW12D												-	0.0657065	0.0254674	0.041837	0.03736035	0.0212029	
MW13D													-	0.0056476	0.007991	0.00371308	0.0011661	
MW14														-	0.008181	0.00342937	0.009379	
MW15															-	0.0183576	0.0019492	
MW-16																-	0.0175598	
MW-17																	-	
MW-18																		
MW-19																		

effective porosity(n) = 0.045 0.045

Hydraulic conductivity of aquifer (k) = 2.5 ft/yr 2.5

Max gradient (dh/dl)

0.108	**10/28/2025**
0.000668	10/28/2025

$$v = k\frac{(dh\ /\ dl)}{n}$$

	MW1D	MW2D	MW3D	MW4D	MW5D	MW6D	MW7D	MW8D	MW9D	MW10D	MW11D	MW12D	MW13D	MW14	MW15	MW-16	MW-17
TD(ft bgs)	57.40	61.56	63.04	53.95	58.32	58.22	58.65	63.45	63.09	71.33	51.34	44.96	47.55	78.90	74.45	64.20	58.90
TOC, ft	638.07	638.19	630.65	625.00	636.84	636.66	626.46	629.32	637.04	639.32	628.27	623.67	619.06	640.89	637.71	637.26	636.52

Groundwater elevations, sea level

	MW1D	MW2D	MW3D	MW4D	MW5D	MW6D	MW7D	MW8D	MW9D	MW10D	MW11D	MW12D	MW13D	MW14	MW15	MW-16	MW-17
TOC, ft	638.07	638.19	630.65	625.00	636.84	636.66	626.46	629.32	637.04	639.32	628.27	623.67	619.06	640.89	637.71	637.26	636.52
tos, ft	594.07	589.49	580.95	585.30	592.12	591.74	581.21	579.37	587.34	581.62	590.57	591.97	584.36	575.39	576.66	586.46	591.02

Date	MW1D	MW2D	MW3D	MW4D	MW5D	MW6D	MW7D	MW8D	MW9D	MW10D	MW11D	MW12D	MW13D	MW14	MW15	MW-16	MW-17
03/16/16	NG	NG	38.08	NG	NG	34.91	13.58	32.39	55.41	NG	NG	NG	NG	75.78	54.94	60.29	57.63
05/16/16	NG	NG	37.04	NG	NG	33.64	29.65	42.78	55.69	NG	NG	NG	NG	76.16	55.99	60.18	54.88
07/20/16	NG	NG	NG	NG	NG	NG	NG	45.93		NG	NG	NG	NG	75.02	60.38	60.41	52.50
09/19/16	NG	NG	37.70	NG	NG	33.75	22.87	52.27	56.02	NG	NG	NG	NG	74.03	61.14	61.11	49.56
10/06/16	NG	NG	37.65	NG	NG	NG	NG	58.6		NG	NG	NG	NG	dry	61.28	dry	dry
01/25/17	NG	NG	37.13	NG	NG	NG	NG	54.25		NG	NG	NG	NG	74.14	54.15	61.73	51.11
03/14/17	NG	NG	37.15	NG	NG	34.80	21.81	46.88	57.59	NG	NG	NG	NG	37.29	64.32	62.24	49.92
05/17/17	NG	NG	37.22	NG	NG	34.26	7.63	54.12	56.35	NG	NG	NG	NG	72.09	45.41	58.44	54.37
06/15/17	NG	NG	37.26	NG	NG	33.22	9.15	59.79	56.29	NG	NG	NG	NG	76.13	55.76	60.25	55.94
06/27/17	NG	NG	37.31	NG	NG	33.29	27.50	61.46	60.35	NG	NG	NG	NG	77.92	58.64	62.67	55.61
07/12/17	NG	NG	38.02	NG	NG	34.06	43.72	60.87	60.36	NG	NG	NG	NG	77.63	59.81	61.61	57.03
10/11/17	55.24	57.89	37.42	43.26	27.37	33.58	57.38	61.51	61.89	69.04	47.86	18.56	41.32	75.94	59.45	61.62	56.42
05/01/18	54.04	55.13	37.07	43.15	22.20	33.95	13.93	22.36	57.03	68.32	47.68	15.62	34.78	72.21	55.85	61.29	52.11
05/29/18	53.76	58.41	31.77	43.54	29.73	33.66	13.12	21.71	56.66	68.15	47.57	18.75	40.69	71.65	60.04	61.18	51.54
10/15/18	54.45	60.59		43.49	32.01				69.11	48.31	19.97	45.62	75.58	61.94	61.11	56.02	
10/22/18			37.09	43.41	41.92	34.34	13.08	32.72	56.6		19.85					60.80	
1/15/2019	54.06	49.60	36.69	42.90	25.38	34.05	13.66	31.73	56.52	68.77	48.26	13.14	45.41	75.30	54.42	60.02	54.38
2/27/2019	53.80	56.68	36.98	43.23	24.81	34.12	12.38	26.23	55.76	68.64	48.26	16.95	42.84	74.45	58.24	62.66	53.65
8/26/2019	52.71	57.91	37.34	43.73	24.20	32.83	11.45	23.13	53.55	67.96	48.11	18.66	37.42	68.82	59.72	62.60	50.89
6/29/2020	51.28	57.64	37.23	43.81	22.44	32.74	10.24	15.24	47.34	66.89	47.73	18.11	37.15	66.40	59.56	62.68	46.56
9/8/2020			37.16		29.81	33.51			55.43						60.55		
10/20/2020	50.96	60.17	37.63	43.87	29.65	33.81	12.45	31.25	55.82	66.51	47.63	19.29	42.51	68.60	61.39	62.15	45.41
12/16/2020			36.90			33.36			55.46						61.44		
4/12/2021	53.42	54.87	37.19	43.44	21.75	33.95	10.84	34.12	50.87	69.83	47.5	15.08	32.53	74.51	55.74	62.69	43.76
6/22/2021				43.62	23.25				55.91				34.53		58.06		
12/27/2021	52.42	60.15	38.47	43.86	25.65	34.38	12.23	34.41	57.61	68.94	47.35	18.98	38.03	69.91	61.26	78.96	42.18
6/14/2022	51.68	47.23	38.20	43.76	22.51	34.86	8.19	25.76	55.95	68.31	47.25	12.72	31.86	68.73	47.27	63.81	41.53
11/7/2022	51.21	60.79	37.91	44.07	26.92	34.84	12.90	32.25	55.53	67.86	47.22	19.54	39.03	65.47	61.74	63.87	41.17
6/20/2023	55.77	59.13	38.13	44.03	25.17	34.73	11.71	23.34	57.28	69.55	48.62	18.67	43.96	76.81	60.51	63.55	55.84
10/10/2023	56.29	59.41	37.91	44.02	26.94	34.40	11.66	30.03	55.03	69.21	48.59	18.71	45.14	75.38	60.75	63.34	54.41
4/16/2024	55.2	56.71	37.80	43.80	25.27	34.48	11.74	18.88	51.03	68.61	48.48	16.98	44.51	68.59	57.65	62.71	52.19
8/26/2024			37.93	44.28	25.63	34.22			44.9			17.11			60.46		
10/22/2024	54.34	60.81	37.80	44.20	30.06	34.23	13.25	27.92	44.93	67.86	48.33	19.39	38.4	59.71	61.75	63.23	50.16
4/8/2025	53.59	42.22	37.66	43.10	23.99	34.27	11.18	12.94	43.34	67.25	48.19	10.26	30.46	63.43	42.33	62.48	48.31
6/18/2025	55.62									68.88							54.12
10/28/2025	55	52.28	37.49	43.75	24.88	37.85	10.49	24.92	44.14	68.37	47.96	15.12	38.02	69.87	53.56	61.75	54.04

	MW1D	MW2D	MW3D	MW4D	MW5D	MW6D	MW7D	MW8D	MW9D	MW10D	MW11D	MW12D	MW13D	MW14	MW15	MW-16	MW-17			(dh/dl) gradient	max v(ft/yr)	Min	
03/16/16	NG	NG	592.57	NG	NG	601.75	612.88	596.93	581.63	NG	NG	NG	NG	565.11	582.77	576.97	578.89	612.88	565.11	0.051	**2.83**		
05/16/16	NG	NG	593.61	NG	NG	603.02	596.81	586.54	581.35	NG	NG	NG	NG	564.73	581.72	577.08	581.64	603.02	564.73	0.055	**3.06**		
07/20/16	NG	NG	NG	NG	NG	NG	NG	583.39	NG	NG	NG	NG	NG	565.87	577.33	576.85	584.02	584.02	565.87	0.020	**1.11**		
09/19/16	NG	NG	592.95	NG	NG	602.91	603.59	577.05	581.02	NG	NG	NG	NG	566.86	576.57	576.15	586.96	603.59	566.86	0.056	**3.11**		
10/06/16	NG	NG	593.00	NG	NG	NG	NG	570.72	NG	NG	NG	NG	NG	dry	576.43	dry	dry	576.43	570.72	0.010	**0.56**		
01/25/17	NG	NG	593.52	NG	NG	NG	NG	575.07	NG	NG	NG	NG	NG	566.75	583.56	575.53	585.41	585.41	566.75	0.019	**1.06**		
03/14/17	NG	NG	593.50	NG	NG	601.86	604.65	582.44	579.45	NG	NG	NG	NG	603.60	573.39	575.02	586.60	604.65	573.39	0.057	**3.17**		
05/17/17	NG	NG	593.43	NG	NG	602.40	618.83	575.20	580.69	NG	NG	NG	NG	568.80	592.30	578.82	582.15	618.83	568.80	0.055	**3.06**		
06/15/17	NG	NG	593.39	NG	NG	603.44	617.31	569.53	580.75	NG	NG	NG	NG	564.76	581.95	577.01	580.58	617.31	564.76	0.058	**3.22**		
06/27/17	NG	NG	593.34	NG	NG	603.37	598.96	567.86	576.69	NG	NG	NG	NG	562.97	579.07	574.59	580.91	603.37	562.97	0.068	**3.78**		
07/12/17	NG	NG	592.63	NG	NG	602.60	582.74	568.45	576.68	NG	NG	NG	NG	563.26	577.90	575.65	579.49	602.60	563.26	0.066	**3.67**		
10/11/17	582.83	580.30	593.23	581.74	609.47	603.08	569.08	567.81	575.15	570.28	580.41	605.11	577.74	564.95	578.26	575.64	580.10	609.47	564.95	0.099	**5.50**	0.0071667	
05/01/18	584.03	583.06	593.58	581.85	614.64	602.71	612.53	606.96	580.01	571.00	580.59	608.05	584.28	568.68	581.86	575.97	584.41	614.64	568.68	0.117	**6.50**	0.0002222	
05/29/18	584.31	579.78	598.88	581.46	607.11	603.00	613.34	607.61	580.38	571.17	580.70	604.92	578.37	569.24	577.67	576.08	584.98	613.34	569.24	0.090	**5.00**	0.0125333	
10/15/18	583.62	577.60	NG	581.51	604.83	NG	NG	NG	NG	570.21	579.96	603.70	573.44	565.31	575.77	576.15	580.50	604.83	565.31	0.090	**5.00**		
10/22/18	NG	NG	593.56	581.59	594.92	602.32	613.38	596.60	580.44	NG	NG	603.82	NG	NG	576.91	NG	NG	613.38	576.91	0.056	**3.11**		
01/15/19	584.01	588.59	593.96	582.10	611.46	602.61	612.80	597.59	580.52	570.55	580.01	610.53	573.65	565.59	587.29	577.24	582.14	612.80	565.59	0.108	**6.00**	0.0011667 2 of 2	
02/27/19	584.27	581.51	593.67	581.77	612.03	602.54	614.08	603.09	581.28	570.68	580.01	606.72	576.22	566.44	579.47	574.60	582.87	614.08	566.44	0.110	**6.11**	0.0051111 1H 2019	
08/26/19	585.36	580.28	593.31	581.27	612.64	603.83	615.01	606.19	583.49	571.36	580.16	605.01	581.64	572.07	577.99	574.66	585.63	615.01	571.36	0.111	**6.17**	0.0038889 2H 2019	
06/29/20	586.79	580.55	593.42	581.19	614.40	603.92	616.22	604.18	589.70	572.43	580.54	605.56	581.91	574.49	578.15	574.58	589.96	616.22	572.43	0.116	**6.44**	0.0006667 1H 2020	
09/08/20			593.49		607.03	603.15			581.61						577.16							2 of 2 1H 2020	
10/20/20	587.11	578.02	593.02	581.13	607.19	602.85	614.01	598.07	581.22	572.81	580.64	604.38	576.55	572.29	576.32	575.11	591.11	614.01	572.29	0.090	**5.00**	0.0006667 2H 2020	
12/16/20			593.75			603.30			581.58						576.27							0.0002222 2 of 2 2H 2020	
04/12/21	584.65	583.32	593.46	581.56	615.09	602.71	615.62	595.20	586.17	569.49	580.77	608.59	586.53	566.38	581.97	574.57	592.76	615.62	566.38	0.117	**6.50**	0.0008333 1H 2021	
06/22/21			630.65			636.66			581.13						579.65			636.66	579.65			2 of 2 2H 2021	
12/27/21	585.65	578.04	592.18	581.14	611.19	602.28	614.23	594.91	579.43	570.38	580.92	604.69	581.03	570.98	576.45	558.30	594.34	614.23	558.30	0.104	**5.78**	0.0001944 2H 2021	
06/14/22	586.39	590.96	592.45	581.24	614.33	601.80	618.27	603.56	581.09	571.01	581.02	610.95	587.20	572.16	590.44	573.45	594.99	618.27	571.01	0.114	**6.33**	0.00035 1H 2022	
11/7/2022	586.86	577.40	592.74	580.93	609.92	601.82	613.56	597.07	581.51	571.46	581.05	604.13	580.03	575.42	575.97	573.39	595.35	613.56	571.46	0.098	**5.44**	0.0002222 2H 2022	
06/20/23	582.30	579.06	592.52	580.97	611.67	601.93	614.75	605.98	579.76	569.77	579.65	605.00	575.1	564.08	577.20	573.71	580.68	614.75	564.08	0.110	**6.11**	0.0006833 1H 2023	
10/10/2023	581.78	578.78	592.74	580.98	609.90	602.26	614.80	599.29	582.01	570.11	579.68	604.96	573.92	565.51	576.96	573.92	582.11	614.80	565.51	0.103	**5.72**	0.0011444 2H 2023	
4/16/2024	582.87	581.48	592.85	581.20	611.57	602.18	614.72	610.44	586.01	570.71	579.79	606.69	574.55	572.30	580.06	574.55	584.33	614.72	570.71	0.109	**6.06**	0.0001944 1H 2024	
8/26/2024			592.72	580.72	611.21	602.44			592.14			606.56			577.25			611.21	577.25			2 of 2 1H 2024	
10/22/2024	583.73	577.38	592.85	580.80	606.78	602.43	613.21	601.40	592.11	571.46	579.94	604.28	580.66	581.18	575.96	574.03	586.36	613.21	571.46	0.092	**5.11**	0.0002222 2H 2024	
4/8/2025	584.48	595.97	592.99	581.90	612.85	602.39	615.28	616.38	593.70	572.07	580.08	613.41	588.6	577.46	595.38	574.78	588.21	616.38	572.07	0.112	**6.22**	0.000316 1H2025	
6/18/2025	582.45									570.44							582.40	582.40	570.44			2 of 2 1H 2025	
10/28/2025	583.07	585.91	593.16	581.25	611.96	598.81	615.97	604.40	592.90	570.95	580.31	608.55	581.04	571.02	584.15	575.51	582.48	615.97	570.95	0.108	**6.00**	0.000068 2h2025	

average LGWV **4.62** ft/yr

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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STATISTICAL ANALYSIS SUMMARY, 2025 1ST SEMIANNUAL EVENT

Stations 3 and 4 Landfill

Northeastern Power Station

Oologah, Oklahoma

Prepared for

American Electric Power
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Columbus, Ohio 43215-2372

Prepared by

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September 2025

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Attachment B: Statistical Analysis Output – Appendix B

Attachment C: Statistical Analysis Output – Appendix A

ACRONYMS AND ABBREVIATIONS

AEP	American Electric Power
CCR	coal combustion residuals
GWPS	groundwater protection standard
LCL	lower confidence limit
LPL	lower prediction limits
mg/L	milligrams per liter
OAC	Oklahoma Administrative Code
ODEQ	Oklahoma Department of Environmental Quality
QA/QC	quality assurance and quality control
SSI	statistically significant increase
SSL	statistically significant level
SU	standard units
TDS	total dissolved solids
UPL	upper prediction limits

1. INTRODUCTION

In accordance with Oklahoma Department of Environmental Quality (ODEQ) requirements regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Oklahoma Administrative Code [OAC] 252:517), groundwater monitoring has been conducted at the Stations 3 and 4 Landfill (Landfill), an existing CCR unit at the Northeastern Power Station in Oologah, Oklahoma.

Before October 2017, at least eight monitoring events were completed to establish background concentrations and calculate prediction limits for Appendix A (assessment monitoring) and Appendix B (detection monitoring) parameters under the CCR rule for wells MW-3D, MW-6D, MW-9D, and MW-15. The data were reviewed for outliers and trends before upper prediction limits (UPLs) were calculated for each Appendix A parameter and lower prediction limits (LPLs) were established for pH. The statistical analyses completed to establish background levels are detailed in the January 2018 *Statistical Analysis Summary* report (Geosyntec 2018).

In July 2019, the groundwater monitoring network was expanded to include additional deep wells surrounding the unit- MW-4D, MW-5D, and MW-12D (Geosyntec 2019). In October 2024, ODEQ approved the use of wells SP-4 and SP-5R, located upgradient of the Bottom Ash Pond, as background locations for the Landfill (ODEQ 2024).

In March 2025, the Landfill transitioned from detection to assessment monitoring. It is required under the CCR rule to establish background concentrations for Appendix B parameters in groundwater. These background concentrations are used to calculate site-specific groundwater protection standards (GWPS). This report details how data from recent groundwater monitoring events and additional locations were analyzed and incorporated into the Landfill background dataset and provides updated GWPS for Appendix B parameters and prediction limits for Appendix A parameters. Recent groundwater monitoring results were used to identify concentrations of Appendix B constituents that are above the GWPS.

Prior to conducting the statistical analyses, the groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues were identified which would impact data usability.

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. GWPSs were established for the Appendix B parameters. Confidence intervals were calculated for Appendix B parameters at the compliance wells to assess whether statistically significant levels (SSLs) of Appendix B parameters were present above the GWPS. SSLs were identified for barium, fluoride, and lithium. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

2. LANDFILL EVALUATION

2.1 Data Validation and QA/QC

Sufficient samples (i.e., more than the eight data points required for statistical analysis) have been collected to establish the background dataset for downgradient wells MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-12D, and MW-15 for all Appendix B parameters. Downgradient wells MW-2D, MW-13D, and MW-14 have sufficient samples for all Appendix B parameters except for combined radium, and MW-17 has sufficient samples for analyses for all Appendix B parameters except for combined radium and fluoride. A summary of data evaluated for inclusion in the Appendix B background dataset are presented in Table 1.

Since the last Appendix A background update (Geosyntec 2024), sufficient samples were collected to establish the background dataset and calculate intrawell UPLs for calcium at downgradient well MW-17 and for both chloride and total dissolved solids (TDS) at downgradient wells MW-2D and MW-13D (Table 2). Additionally, results from the 2024 sampling events at SP-4 and SP-5R were evaluated for inclusion in the background dataset for the interwell prediction limits. Previously collected SP-4 and SP-5R data is summarized in the January 2025 *Annual Groundwater Monitoring Report* (American Electric Power [AEP] 2025).

Monitoring wells MW-1D, MW-10D, MW-11D, and MW-16 were historically dry or did not have a minimum of eight samples to establish background limits. The background for these wells will be updated when sufficient data becomes available and these locations were not included in the analyses for both Appendix A and Appendix B parameters.

Chemical analysis was completed by a National Environmental Laboratory Accreditation Program–certified analytical laboratory. The laboratory completed analysis of quality assurance and quality control (QA/QC) samples such as laboratory reagent blanks, continuing calibration verification samples, and laboratory fortified blanks.

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas™ v.10.0.26 statistics software. The export file was checked against the analytical data for transcription errors and completeness.

2.2 Statistical Analysis

Statistical analyses for the Landfill were conducted in accordance with the November 2021 *Statistical Analysis Plan* (Geosyntec 2021). These statistical analyses incorporated Appendix B data from at least eight monitoring events conducted between January 2017 and April 2025 (Table 1) at the compliance monitoring locations and available data from background wells SP-4 and SP-5R. The statistical analyses also incorporated the additional Appendix A data from downgradient well MW-17 to calculate the intrawell prediction limit through October 2023 for calcium, from downgradient wells MW-2D and MW-13D to calculate intrawell prediction limits through October 2023 for chloride and TDS (Table 2), and from background wells SP-4 and SP-5R to update interwell prediction limits through October 2024. The complete statistical analysis results are included in Attachments B and C for Appendix B and A monitoring, respectively.

Time series plots and results for all completed statistical tests are provided in Attachments B and C. The data were screened for potential outliers. Potential outliers for Appendix B constituents were identified for barium, beryllium, cadmium, cobalt, combined radium, fluoride, mercury, molybdenum, and thallium. The following outliers were flagged and removed from the background dataset:

- Molybdenum at MW-3D (6/27/2017)
- Thallium at MW-6D (5/30/2018) and at MW-14 (6/27/2018).

No other outliers were flagged for this event.

The Appendix A data used in these analyses were screened for potential outliers. No outliers were identified for these events.

2.2.1 Establishment of GWPSs

A GWPS was established for each Appendix B parameter in accordance with the Statistical Analysis Plan (Geosyntec 2021). The established GWPS was set to whichever was greater of the background concentration and the maximum contaminant level for each Appendix B parameter. To determine background concentrations, an upper tolerance limit was calculated using data that were pooled from the background wells collected during the background monitoring and assessment monitoring events. Tolerance limits were calculated parametrically with 95% coverage and 95% confidence for antimony, cadmium, chromium, combined radium, and lead. Nonparametric tolerance limits were calculated for arsenic, barium, beryllium, cobalt, fluoride, lithium, molybdenum, and selenium due to apparent nonnormal distributions, and for mercury and thallium due to a high nondetect frequency. Upper tolerance limits and the final GWPSs are summarized in Table 3.

2.2.2 Evaluation of Potential Appendix B SSLs

A confidence interval was constructed for each Appendix B parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$). However, nonparametric confidence limits were calculated in some cases (e.g., when the data did not appear to be normally distributed or when the nondetect frequency was too high). Select datasets were truncated if significant serial correlation was observed among the background samples that were collected on an approximately monthly basis in 2017. A list of the truncated well/constituent pairs used for calculation of the confidence limits is provided in Attachment B.

An SSL was concluded if the lower confidence limit (LCL) exceeded the GWPS (i.e., if the entire confidence interval was above the GWPS). Calculated confidence limits are shown in Attachment B.

The following SSLs were identified at the Northeastern Landfill:

- The LCL for lithium was above the GWPS of 0.163 milligrams per liter (mg/L) at MW-14 (0.248 mg/L).
- The LCL for molybdenum was above the GWPS of 0.100 mg/L at MW-2D (0.467 mg/L), MW-12D (0.591 mg/L), and MW-15 (0.55 mg/L).

2.2.3 Updated Appendix A Prediction Limits

Background concentration values for Appendix A parameters were last calculated for the Landfill in December 2024 with data collected through December 2023 (Geosyntec 2024). Intrawell testing (using a one-of-two retesting procedure) was selected as the method of analysis for calcium, chloride, and TDS. Interwell testing (using a one-of-two retesting procedure) was selected as the method of analysis for boron, fluoride, pH, and sulfate. These prediction limits were used for detection monitoring events completed in 2024.

Historical data through October 2023 were previously used to calculate the intrawell UPLs for calcium, chloride, and TDS. Additional historical data was incorporated into the background dataset and intrawell UPLs were updated accordingly. Sufficient samples were collected to incorporate data into the background dataset and update intrawell UPLs for calcium at MW-17 and chloride and TDS at MW-2D and MW-13D through October 2023. Historical data through October 2024 were used to calculate the interwell UPLs for boron, fluoride, pH, and sulfate (and an interwell LPL, for pH) and to represent background values (Table 4).

The UPLs were calculated for a one-of-two retesting procedure; that is, if at least one sample in a series of two has no measurement greater than the UPL and if the pH result is greater than or equal to the LPL, then it can be concluded that a statistically significant increase (SSI) has not occurred. In practice, where the initial result is not greater than the UPL and where the pH result is greater than or equal to the LPL, a second sample will not be collected. The retesting procedures allow an acceptably high statistical power to detect changes at compliance wells for constituents evaluated with intrawell prediction limits.

2.2.4 Evaluation of Potential Appendix A SSIs

Data collected during the April 2025 assessment monitoring event from each compliance well were compared to previously calculated and updated prediction limits, as appropriate, to assess whether results were statistically above background values. The results from this event and the prediction limits are summarized in Table 4.

The following concentrations were detected above the UPLs or, in the case of pH, below the lower prediction limits (LPLs):

- Boron concentrations were above the interwell UPL of 0.520 mg/L at MW-2D (9.09 mg/L), MW-3D (0.893 mg/L), MW-4D (0.958 mg/L), MW-6D (2.76 mg/L), MW-9D (6.14 mg/L), MW-12D (6.09 mg/L), MW-13D (0.602 mg/L), MW-14 (1.0 mg/L), MW-15 (7.54 mg/L), and MW-17 (1.0 mg/L).
- The calcium concentration was above the intrawell UPL of 213 mg/L at MW-4D (221 mg/L).
- The fluoride concentration was above the interwell UPL of 4.39 mg/L at MW-14 (4.4 mg/L).
- pH values were above the interwell UPL of 9.1 standard units (SU) at MW-2D (10.3 SU) and below the interwell LPL of 7.0 SU at MW-4D (6.9 SU).

- Sulfate concentrations were above the interwell UPL of 83.0 mg/L at MW-2D (658 mg/L), MW-3D (163 mg/L), MW-4D (429 mg/L), MW-5D (119 mg/L), MW-6D (448 mg/L), MW-9D (508 mg/L), MW-12D (478 mg/L), MW-13D (348 mg/L), and MW-15 (644 mg/L).
- The TDS concentration was above the intrawell UPL of 1,020 mg/L at MW-4D (1,110 mg/L).

While the prediction limits were calculated for a one-of-two retesting procedure, SSIs over background were conservatively assumed if the April 2025 sample was above the UPL or, in the case of pH, below the LPL.

2.3 Conclusions

The Northeastern Landfill transitioned from detection to assessment monitoring in March 2025. Data from at least eight monitoring events were evaluated for inclusion in the background dataset for Appendix B parameters in assessment monitoring. Additional data were evaluated for inclusion in the background dataset for Appendix A parameters in detection monitoring where available. The laboratory and field data were reviewed prior to statistical analysis, and no QA/QC issues that impacted data usability were identified. A review of outliers identified potential outliers for multiple constituents. One molybdenum value and two thallium values were flagged and removed from the dataset. GWPSs were established for the Appendix B parameters. A confidence interval was constructed at each compliance well for each Appendix B parameter where sufficient data was available; SSLs were concluded if the entire confidence interval was above the GWPS. SSLs were identified for lithium and molybdenum. Intrawell prediction limits were established using data through October 2023 for calcium at MW-17 and chloride and TDS at MW-2D and MW-13D. Interwell prediction limits were updated using data through October 2024 for boron, fluoride, pH, and sulfate. Appendix A parameters were compared to prediction limits, with concentrations of boron, calcium, fluoride, pH, sulfate and TDS above or, in the case of pH, below background levels.

Based on this evaluation, the Northeastern Landfill CCR unit will either move to an assessment of corrective measures or an ASD will be conducted to evaluate if the unit can remain in assessment monitoring.

3. REFERENCES

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TABLES

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-2D													
		5/2/2018	5/30/2018	2/27/2019	8/26/2019	6/29/2020	4/13/2021	6/14/2022	2/21/2023	3/8/2023	4/10/2023	6/20/2023	10/10/2023	4/16/2024	4/7/2025
Antimony	µg/L	2.12 J1	1.95 J1	--	--	--	--	--	0.48	0.5 J1	0.61 J1	0.54 J1	--	0.51 J1	0.380
Arsenic	µg/L	37.15	34.61	--	--	--	--	--	28.2	28.2	27.5	25.1	--	21.2	14.9
Barium	µg/L	9.62	29.17	--	--	--	--	--	12.7	13.0	43.2	26.3	--	33.1	17.4
Beryllium	µg/L	1 U1	1 U1	--	--	--	--	--	0.027 J1	0.5 U1	0.09 J1	0.5 U1	--	0.28 J1	0.05 U1
Cadmium	µg/L	0.3 J	0.44 J1	--	--	--	--	--	0.191	0.27	1.27	0.24	--	0.36	0.168
Chromium	µg/L	1 U1	1.4	--	--	--	--	--	1.08	2.1	15.9	2.0 J1	--	4.3	0.43
Cobalt	µg/L	0.36 J1	0.3 J1	--	--	--	--	--	0.326	0.35	2.12	0.47	--	0.47	0.289
Combined Radium	pCi/L	1.259	--	--	--	--	--	--	2.24	1.84	1.73	--	--	--	1.02
Fluoride	mg/L	2.028	--	1.56	1.661	1.91	1.81	1.22	1.58	1.58	--	--	1.48	1.38	1.34
Lead	µg/L	5 U1	1.28 J1	--	--	--	--	--	1.31	1.6 J1	9.9	2.6	--	4.4	1.21
Lithium	mg/L	0.0006 J1	0.00125	--	--	--	--	--	0.0007	0.0015 J1	0.0016 J1	0.0013 J1	--	0.0010 J1	0.00146
Mercury	µg/L	0.046	0.04	0.028	--	--	--	--	0.033	0.033	0.024	0.034	--	--	0.015
Molybdenum	µg/L	588	552	--	--	--	--	--	546	524	491	503	--	455	465
Selenium	µg/L	82.77	72.31	--	--	--	--	--	63.4	49.3	21.1	18.5	--	12.4	14.4
Thallium	µg/L	1.1 J1	2	--	--	--	--	--	0.14 J1	2 U1	0.5 J1	0.3 J1	--	0.2 J1	0.11 J1

Notes:
--: Not measured
H2: Sample analysis performed past holding time.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-3D														
		1/25/2017	3/14/2017	4/25/2017	5/18/2017	6/15/2017	6/27/2017	7/12/2017	8/4/2017	8/17/2017	8/30/2017	9/13/2017	9/20/2017	10/11/2017	5/2/2018	5/30/2018
Antimony	µg/L	5 U1	5 U1	5 U1	5 U1	1.44 J1	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	1.63 J1	--	5 U1	5 U1
Arsenic	µg/L	5 U1	5 U1	3.3 J1	10.64	1.48 J1	5 U1	5 U1	5 U1	5 U1	2.6 J1	4.52 J1	1.14 J1	--	1.38 J1	5 U1
Barium	µg/L	111	100	89.64	1,040	150	97.64	118	124	274	244	430	267	--	107	281
Beryllium	µg/L	1 U1	1 U1	1 U1	0.92 J1	0.08 J1	0.09 J1	0.05 J1	0.07 J1	0.17 J1	0.16 J1	0.35 J1	0.17 J1	--	1 U1	0.02 J1
Cadmium	µg/L	1 U1	1 U1	0.26 J1	0.61 J1	0.22 J1	0.45 J1	0.08 J1	0.21 J1	0.24 J1	0.33 J1	0.49 J1	0.21 J1	--	0.09 J1	0.23 J1
Chromium	µg/L	2	1 U1	0.35 J1	18.06	1.23	4.8	0.41 J1	0.82 J1	3.11	2.36	6.32	2.74	--	0.24 J1	2.64
Cobalt	µg/L	5 U1	5 U1	1.3 J1	5.32	1.09 J1	2.69 J1	0.82 J1	0.84 J1	1.83 J1	1.54 J1	2.97 J1	1.41 J1	--	1.04 J1	1.02 J1
Combined Radium	pCi/L	2.153	1.456	0.419	2.443	1.706	2.431	14.283	2.242	2.328	2.215	1.566	2.162	--	2.411	--
Fluoride	mg/L	1 U1	1	0.77 J1	1 U1	0.8472 J1	0.7591 J1	1 U1	0.7381 J1	1 U1	0.7144 J1	1 U1	1 U1	1 U1	0.757 J1	0.896 J1
Lead	µg/L	5 U1	5 U1	5 U1	3.24 J1	0.83 J1	2.99 J1	5 U1	0.8 J1	5 U1	5 U1	1.55 J1	5 U1	--	5 U1	5 U1
Lithium	mg/L	0.017	0.016	0.01508	0.01943	0.01451	0.01836	0.01435	0.01344	0.01495	0.01465	0.01639	0.01508	--	0.01568	0.01673
Mercury	µg/L	0.025 U1	0.025 U1	0.025 U1	0.01 J1	0.025 U1	0.007 J1	0.025 U1	0.013 J1	0.025 U1	0.025 U1	0.025 U1	0.025 U1	--	0.025 U1	0.025 U1
Molybdenum	µg/L	5 U1	5 U1	1.97 J1	4.15 J1	3.04 J1	79.28	3.22 J1	3.08 J1	2.91 J1	2.68 J1	2.74 J1	3.33 J1	--	2.93 J1	2.55 J1
Selenium	µg/L	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	1 J1	5 U1	5 U1	5 U1	--	5 U1	5 U1
Thallium	µg/L	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	1.02 J1	2 U1	--	2 U1	2 U1

Parameter	Unit	MW-3D														
		10/22/2018	11/28/2018	2/27/2019	8/26/2019	6/30/2020	10/21/2020	4/13/2021	12/28/2021	6/14/2022	11/7/2022	6/20/2023	10/10/2023	4/16/2024	10/22/2024	4/8/2025
Antimony	µg/L	--	--	--	--	--	--	--	--	--	0.07 J1	--	--	--	--	0.055 J1
Arsenic	µg/L	--	--	--	--	--	--	--	--	--	1.32	--	--	--	--	8.21
Barium	µg/L	--	--	--	--	--	--	--	--	--	107	--	--	--	--	115
Beryllium	µg/L	--	--	--	--	--	--	--	--	--	0.047 J1	--	--	--	--	0.064
Cadmium	µg/L	--	--	--	--	--	--	--	--	--	0.054	--	--	--	--	0.109
Chromium	µg/L	--	--	--	--	--	--	--	--	--	0.75	--	--	--	--	0.90
Cobalt	µg/L	--	--	--	--	--	--	--	--	--	0.336	--	--	--	--	0.381
Combined Radium	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.47
Fluoride	mg/L	1.09	0.648 J1	0.71	0.608 J1	0.77	0.77	0.84	0.82	0.84	0.81	0.83	0.78	0.79	0.81	0.94
Lead	µg/L	--	--	--	--	--	--	--	--	--	0.60	--	--	--	--	1.01
Lithium	mg/L	--	--	--	--	--	--	--	0.0132	--	0.0135	--	--	--	--	0.0132
Mercury	µg/L	--	--	0.025 U1	--	--	--	--	--	--	--	--	--	--	--	0.003 J1
Molybdenum	µg/L	--	--	--	--	--	--	--	--	--	2.7	--	--	--	--	2.9
Selenium	µg/L	--	--	--	--	--	--	--	--	--	0.14 J1	--	--	--	--	0.20 J1
Thallium	µg/L	--	--	--	--	--	--	--	--	--	0.2 U1	--	--	--	--	0.2 U1

Notes:
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H2: Sample analysis performed past holding time.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-4D														
		3/15/2017	5/2/2018	5/30/2018	6/27/2018	7/31/2018	8/30/2018	9/19/2018	10/15/2018	10/22/2018	11/28/2018	1/15/2019	2/27/2019	8/26/2019	6/30/2020	10/21/2020
Antimony	µg/L	5 U1	4.05 J1	5 U1	5 U1	0.05	0.1	0.04 J1	0.15	--	0.5 U1	--	--	--	--	--
Arsenic	µg/L	5	2.3 J1	5 U1	5 U1	1.25	1.6	1.20	2.28	--	1.31	--	--	--	--	--
Barium	µg/L	225	171	173	167	173	163	177	166	--	171	--	--	--	--	--
Beryllium	µg/L	1 U1	1 U1	1 U1	1 U1	0.01 J1	0.049	0.02 J1	0.06 J1	--	0.5 U1	--	--	--	--	--
Cadmium	µg/L	1 U1	0.14 J1	1 U1	1 U1	0.04	0.11	0.03 J1	0.16	--	0.06 J1	--	--	--	--	--
Chromium	µg/L	4	1.37	1 U1	1.93	50 U1	0.551	0.273	0.872	--	0.3 J1	--	--	--	--	--
Cobalt	µg/L	5 U1	2.36 J1	1.28 J1	1.82 J1	0.521	0.807	0.551	0.873	--	0.677	--	--	--	--	--
Combined Radium	pCi/L	--	1.625	1.991	1.244	1.506	0.912	3.91	3.056	--	1.629	--	--	--	--	--
Fluoride	mg/L	1 U1	1 U1	0.4188 J1	1 U1	1 U1		1 U1	1 U1	1 U1	0.3357 J1	0.37 J1	0.30	0.171 J1	0.27	0.27
Lead	µg/L	5 U1	1.47 J1	5 U1	5 U1	0.130	0.804	0.595	1.41	--	0.3 J1	--	--	--	--	--
Lithium	mg/L	--	0.00533	0.0033	0.00491	0.00315	0.00296	0.00289	0.00336	--	0.00378	--	--	--	--	--
Mercury	µg/L	0.025 U1	0.025 U1	0.025 U1	0.025 U1	0.025 U1	0.007 J1	0.025 U1	0.025 U1	--	0.025 U1	--	0.025 U1	--	--	--
Molybdenum	µg/L	--	6.74	4.91 J1	4.64 J1	4.59	4.48	3.71	4.58	--	8 J1	--	--	--	--	--
Selenium	µg/L	5 U1	5 U1	5 U1	5 U1	0.2	0.3	0.2	0.3	--	0.2 J1	--	--	--	--	--
Thallium	µg/L	2 U1	1.19 J1	2.94	2.94	0.02 J1	0.02 J1	0.5 U1	0.5 U1	--	2 U1	--	--	--	--	--

Parameter	Unit	MW-4D								
		4/12/2021	12/28/2021	6/14/2022	11/7/2022	6/20/2023	10/10/2023	4/16/2024	10/22/2024	4/7/2025
Antimony	µg/L	--	--	--	0.19	--	--	--	--	0.131
Arsenic	µg/L	--	--	--	4.28	--	--	--	--	2.44
Barium	µg/L	--	--	--	149	--	--	--	--	130
Beryllium	µg/L	--	--	--	0.15 J1	--	--	--	--	0.053
Cadmium	µg/L	--	--	--	0.938	--	--	--	--	0.467
Chromium	µg/L	--	--	--	3.31	--	--	--	--	1.62
Cobalt	µg/L	--	--	--	5.41	--	--	--	--	3.43
Combined Radium	pCi/L	--	--	--	--	--	--	--	--	1.33
Fluoride	mg/L	0.33	0.26	0.32	0.26	0.26	0.24	0.25	0.25	0.28
Lead	µg/L	--	--	--	2.86	--	--	--	--	1.37
Lithium	mg/L	--	0.00289	--	0.0047	--	--	--	--	0.00417
Mercury	µg/L	--	--	--	--	--	--	--	--	0.005 U1
Molybdenum	µg/L	--	--	--	3.8	--	--	--	--	3.8
Selenium	µg/L	--	--	--	1.03	--	--	--	--	0.69
Thallium	µg/L	--	--	--	0.16 J1	--	--	--	--	0.09 J1

Notes:
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mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-5D														
		3/14/2017	5/2/2018	5/30/2018	6/27/2018	7/31/2018	8/30/2018	9/19/2018	10/15/2018	10/22/2018	11/28/2018	1/15/2019	2/27/2019	8/26/2019	6/29/2020	10/21/2020
Antimony	µg/L	5 U1	2.91 J11	5 U1	2.5 J1	0.16	0.1	0.13	0.07 J1	--	0.5 U1	--	--	--	--	--
Arsenic	µg/L	5 U1	1.24 J1	5 U1	5 U1	1.27	0.98	1.18	0.99	--	1.15	--	--	--	--	--
Barium	µg/L	99	127	139	126	143	111	118	103	--	113	--	--	--	--	--
Beryllium	µg/L	1 U1	1 U1	1 U1	1 U1	0.103	0.076	0.08 J1	0.07 J1	--	0.5 U1	--	--	--	--	--
Cadmium	µg/L	1 U1	0.36 J1	1 U1	1 U1	0.21	0.1	0.09	0.08	--	0.06 J1	--	--	--	--	--
Chromium	µg/L	1 U1	0.59 J1	1.53	0.8 J1	0.355	0.518	0.745	0.423	--	0.5 J1	--	--	--	--	--
Cobalt	µg/L	5 U1	1.14 J1	1.31 J1	0.63 J1	0.482	0.3	0.336	0.289	--	0.324	--	--	--	--	--
Combined Radium	pCi/L	--	2.449	3.06	2.512	2.876	2.906	5.163	5.319	--	2.393	--	--	--	--	--
Fluoride	mg/L	--	0.703 J1	0.711 J1	0.7487 J1	0.8769 J1		0.7519 J1	0.845 J1	0.806 J1	0.371 J1	0.316 J1	0.50	0.412 J1	0.57	0.54
Lead	µg/L	5 U1	1.01 J1	1.09 J1	5 U1	1.43	0.706	0.720	0.379	--	0.4 J1	--	--	--	--	--
Lithium	mg/L	--	0.01243	0.01199	0.01208	0.011	0.0112	0.0107	0.00977	--	0.0121	--	--	--	--	--
Mercury	µg/L	0.025 U1	0.025 U1	0.025 U1	0.025 U1	0.025 U1	0.006 J1	0.025 U1	0.025 U1	--	0.025 U1	--	0.025 U1	--	--	--
Molybdenum	µg/L	--	1.33 J1	5 U1	0.96 J1	1.21	1.24	2 J1	1 J1	--	0.2 J1	--	--	--	--	--
Selenium	µg/L	5 U1	1.35 J1	5 U1	5 U1	0.4	0.3	0.4	0.3	--	0.3 J1	--	--	--	--	--
Thallium	µg/L	2 U1	1.25 J1	2 U1	2	0.02 J1	0.04 J1	0.5 U1	0.5 U1	--	2 U1	--	--	--	--	--

Parameter	Unit	MW-5D								
		4/13/2021	12/28/2021	6/14/2022	11/7/2022	6/20/2023	10/10/2023	4/16/2024	10/22/2024	4/8/2025
Antimony	µg/L	--	--	--	0.1	--	--	--	--	0.085 J1
Arsenic	µg/L	--	--	--	0.55	--	--	--	--	0.72
Barium	µg/L	--	--	--	101	--	--	--	--	127
Beryllium	µg/L	--	--	--	0.037 J1	--	--	--	--	0.047 J1
Cadmium	µg/L	--	--	--	0.030	--	--	--	--	0.033
Chromium	µg/L	--	--	--	0.63	--	--	--	--	0.67
Cobalt	µg/L	--	--	--	0.170	--	--	--	--	0.280
Combined Radium	pCi/L	--	--	--	--	--	--	--	--	2.79
Fluoride	mg/L	0.59	0.60	0.61	0.58	0.58	0.57	0.58	0.58	0.67
Lead	µg/L	--	--	--	0.26	--	--	--	--	0.49
Lithium	mg/L	--	0.00972	--	0.0103	--	--	--	--	0.0104
Mercury	µg/L	--	--	--	--	--	--	--	--	0.005 U1
Molybdenum	µg/L	--	--	--	1.5	--	--	--	--	1.4
Selenium	µg/L	--	--	--	0.26 J1	--	--	--	--	0.18 J1
Thallium	µg/L	--	--	--	0.2 U1	--	--	--	--	0.2 U1

Notes:
--: Not measured
H2: Sample analysis performed past holding time.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-6D														
		6/15/2017	6/27/2017	7/12/2017	8/4/2017	8/17/2017	8/30/2017	9/13/2017	9/20/2017	10/11/2017	1/22/2018	5/2/2018	5/30/2018	10/22/2018	11/28/2018	2/27/2019
Antimony	µg/L	5 U1	1.28 J1	5 U1	5 U1	1.26 J1	5 U1	5 U1	1.18 J1	--	--	1.32 J1	5 U1	--	--	--
Arsenic	µg/L	1.99 J1	5 U1	5 U1	5 U1	1.18 J1	2.06 J1	1.19 J1	1.93 J1	--	--	2.38 J1	1.27 J1	--	--	--
Barium	µg/L	113	170	107	128	99.54	103	109	75.04	--	--	72.24	148	--	--	--
Beryllium	µg/L	0.18 J1	0.06 J1	0.22 J1	0.22 J1	0.19 J1	0.22 J1	0.31 J1	0.14 J1	--	--	1 U1	0.29 J1	--	--	--
Cadmium	µg/L	0.8 J1	0.37 J1	0.56 J1	0.93 J1	0.44 J1	0.36 J1	0.49 J1	0.22 J1	--	--	1 U1	0.57 J1	--	--	--
Chromium	µg/L	5.99	0.86 J1	6.82	6.62	6.77	6.68	8.15	3.86	--	--	1.51	12.65	--	--	--
Cobalt	µg/L	3.73 J1	1.09 J1	3.82 J1	3.39 J1	3.07 J1	3.03 J1	3.71 J1	2.27 J1	--	--	1.82 J1	4.49 J1	--	--	--
Combined Radium	pCi/L	1.822	1.917	1.784	1.115	1.155	1.057	1.377	1.43	--	--	0.997	--	--	--	--
Fluoride	mg/L	0.8054 J1	0.7596 J1	1 U1	0.7656 J1	0.729 J1	0.7158 J1	0.5406 J1	1 U1	0.9597 J1	0.76 J1	0.806 J1	0.9218 J1	1.28	0.844 J1	0.89
Lead	µg/L	3.48 J1	0.76 J1	5	4.96 J1	3.25 J1	2.5 J1	3.28 J1	2.33 J1	--	--	1.29 J1	6.44	--	--	--
Lithium	mg/L	0.02203	0.01356	0.02244	0.01921	0.01925	0.01829	0.02105	0.01701	--	--	0.01975	0.02463	--	--	--
Mercury	µg/L	0.012 J1	0.025 U1	0.007 J1	0.016 J1	0.011 J1	0.025 U1	0.025 U1	0.025 U1	--	--	0.025 U1	0.025 U1	--	--	0.115
Molybdenum	µg/L	85.01	2.79 J1	61.81	82.11	81.32	85.75	58	81	--	--	91.45	74.77	--	--	--
Selenium	µg/L	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	--	--	5 U1	5 U1	--	--	--
Thallium	µg/L	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	--	--	1.02 J1	24	--	--	--

Parameter	Unit	MW-6D											
		8/26/2019	6/30/2020	10/21/2020	4/13/2021	12/28/2021	6/14/2022	11/7/2022	6/20/2023	10/10/2023	4/16/2024	10/22/2024	4/8/2025
Antimony	µg/L	--	--	--	--	--	--	0.13	--	--	--	--	0.104
Arsenic	µg/L	--	--	--	--	--	--	1.84	--	--	--	--	1.65
Barium	µg/L	--	--	--	--	--	--	64.4	--	--	--	--	62.8
Beryllium	µg/L	--	--	--	--	--	--	0.09 J1	--	--	--	--	0.084
Cadmium	µg/L	--	--	--	--	--	--	0.173	--	--	--	--	0.144
Chromium	µg/L	--	--	--	--	--	--	2.49	--	--	--	--	1.97
Cobalt	µg/L	--	--	--	--	--	--	0.948	--	--	--	--	0.932
Combined Radium	pCi/L	--	--	--	--	--	--	--	--	--	--	--	1.91
Fluoride	mg/L	0.634 J1	0.76	0.75	0.93	0.93	1.01	0.92	0.88	0.82	0.83	0.81	0.92
Lead	µg/L	--	--	--	--	--	--	1.90	--	--	--	--	2.17
Lithium	mg/L	--	--	--	--	0.0160	--	0.0200	--	--	--	--	0.0165
Mercury	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.005 U1
Molybdenum	µg/L	--	--	--	--	--	--	97.0	--	--	--	--	76.1
Selenium	µg/L	--	--	--	--	--	--	0.47 J1	--	--	--	--	0.60
Thallium	µg/L	--	--	--	--	--	--	0.2 U1	--	--	--	--	0.02 J1

Notes:
--: Not measured
H2: Sample analysis performed past holding time.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-9D														
		6/15/2017	6/27/2017	7/12/2017	8/4/2017	8/17/2017	8/30/2017	9/13/2017	10/4/2017	10/11/2017	10/31/2017	11/8/2017	10/22/2018	2/27/2019	8/26/2019	6/30/2020
Antimony	µg/L	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	--	--	--	--	--	--	--
Arsenic	µg/L	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	5 U1	--	--	--	--	--	--	--
Barium	µg/L	188	58.15	69.89	132	196	323	399	410	--	--	--	--	--	--	--
Beryllium	µg/L	0.32 J1	1 U1	0.05 J1	0.17 J1	0.22 J1	0.37 J1	0.4 J1	0.43 J1	--	--	--	--	--	--	--
Cadmium	µg/L	0.81 J1	0.26 J1	1 U1	0.54 J1	0.25 J1	0.91 J1	0.68 J1	2.4	--	--	--	--	--	--	--
Chromium	µg/L	12.34	0.89 J1	4.09	7.15	9.52	20.06	13.34	14.79	--	--	--	--	--	--	--
Cobalt	µg/L	6.18	7.14	5.69	7.34	8.17	15.08	12.88	8.38	--	--	--	--	--	--	--
Combined Radium	pCi/L	0.931	--	--	--	--	--	--	--	--	0.683	2.59	--	--	--	--
Fluoride	mg/L	0.9857 J1	0.8986 J1	2.191	0.6947 J1	0.681 J1	1 U1	0.37 J1	1 U1	1.5191	--	--	0.6 J1	0.89	0.758 J1	0.95
Lead	µg/L	7.02	1.24 J1	2.36 J1	4.26 J1	5.33	9.27	8.28	9.69	--	--	--	--	--	--	--
Lithium	mg/L	0.02386	0.01647	0.02221	0.02155	0.02401	0.02964	0.03257	0.03222	--	--	--	--	--	--	--
Mercury	µg/L	0.009 J1	0.025 U1	0.025 U1	0.017 J1	0.011 J1	0.016 J1	0.016 J1	0.015 J1	--	--	--	--	0.019 J1	--	--
Molybdenum	µg/L	173	166	151	117	98.19	93.84	78.39	73.77	--	--	--	--	--	--	--
Selenium	µg/L	5	5 U1	1.32 J1	3.57 J1	3.53 J1	2.94 J1	2.8 J1	3.83 J1	--	--	--	--	--	--	--
Thallium	µg/L	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	--	--	--	--	--	--	--

Parameter	Unit	MW-9D											
		10/21/2020	4/13/2021	6/14/2022	11/7/2022	12/12/2022	1/23/2023	4/10/2023	6/20/2023	10/10/2023	4/16/2024	10/22/2024	4/8/2025
Antimony	µg/L	--	--	--	0.28	--	--	--	--	--	--	--	0.31 J1
Arsenic	µg/L	--	--	--	0.61	--	--	--	--	--	--	--	3.1
Barium	µg/L	--	--	--	50.8	--	--	--	--	--	--	--	162
Beryllium	µg/L	--	--	--	0.25 U1	--	--	--	--	--	--	--	0.34
Cadmium	µg/L	--	--	--	0.080	--	--	--	--	--	--	--	0.52
Chromium	µg/L	--	--	--	1.12	--	--	--	--	--	--	--	7.0
Cobalt	µg/L	--	--	--	0.836	--	--	--	--	--	--	--	5.79
Combined Radium	pCi/L	--	--	--	--	1.93	2.21	1.36	0.92	--	--	--	1.65
Fluoride	mg/L	0.97	0.99	0.93	0.92	--	--	--	--	0.8	0.88	0.82	0.86
Lead	µg/L	--	--	--	0.92	--	--	--	--	--	--	--	12.2
Lithium	mg/L	--	--	--	0.0169	--	--	--	--	--	--	--	0.0163
Mercury	µg/L	--	--	--	--	--	--	--	--	--	--	--	0.005 U1
Molybdenum	µg/L	--	--	--	220	--	--	--	--	--	--	--	104
Selenium	µg/L	--	--	--	5.67	--	--	--	--	--	--	--	2.4 J1
Thallium	µg/L	--	--	--	0.05 J1	--	--	--	--	--	--	--	0.1 J1

Notes:
--: Not measured
H2: Sample analysis performed past holding time.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-12D														
		3/15/2017	5/2/2018	5/30/2018	6/27/2018	7/31/2018	8/30/2018	9/19/2018	10/15/2018	10/22/2018	11/28/2018	1/15/2019	2/27/2019	8/26/2019	6/29/2020	10/20/2020
Antimony	µg/L	5 U1	5 U1	5 U1	5 U1	0.11	0.2	0.36	0.43	--	0.3 J1	--	--	--	--	--
Arsenic	µg/L	5 U1	1.56 J1	1.24 J1	5 U1	3.00	3.39	4.67	6.46	--	3.99	--	--	--	--	--
Barium	µg/L	31	121	77.75	36.18	42.0	65.8	82.6	50.2	--	71.7	--	--	--	--	--
Beryllium	µg/L	1 U1	0.13 J1	1 U1	1 U1	0.053	0.097	0.1 J1	0.06 J1	--	0.1 J1	--	--	--	--	--
Cadmium	µg/L	1 U1	0.8 J1	0.25 J1	1 U1	0.07	0.31	0.33	0.20	--	0.33	--	--	--	--	--
Chromium	µg/L	1 U1	7.95	2.74	1 U1	0.414	1.82	2.03	1.60	--	1.70	--	--	--	--	--
Cobalt	µg/L	5 U1	3.52 J1	1.49 J1	0.39 J1	0.674	2.17	1.57	1.31	--	0.989	--	--	--	--	--
Combined Radium	pCi/L	--	1.625	1.213	1.331	0.721	3.137	4.417	3.541	--	1.486	--	--	--	--	--
Fluoride	mg/L	2	2.199	2.379	1.988	2.6173		2.8416	2.99	2.8	2.2238	2.028	2.11	1.6	1.92	2.06
Lead	µg/L	5 U1	7.03	3.04 J1	5 U1	2.32	5.43	5.18	3.51	--	4.12	--	--	--	--	--
Lithium	mg/L	--	0.00841	0.00608	0.00541	0.006	0.00396	0.00410	0.00308	--	0.00483	--	--	--	--	--
Mercury	µg/L	0.025 U1	0.013 J1	0.025 U1	0.025 U1	0.025 U1	0.025 U1	0.012 J1	0.007 J1	--	0.007 J1	--	0.025 U1	--	--	--
Molybdenum	µg/L	--	693	667	666	818	872	828	774	--	744	--	--	--	--	--
Selenium	µg/L	5 U1	4.5 J1	3.88 J1	1.55 J1	1.7	3.1	2.9	4.6	--	1.9	--	--	--	--	--
Thallium	µg/L	2 U1	2 U1	2.2	1.99 J1	0.106	0.241	0.2 J1	0.3 J1	--	2 U1	--	--	--	--	--

Parameter	Unit	MW-12D								
		4/13/2021	12/27/2021	6/14/2022	11/8/2022	6/20/2023	10/10/2023	4/16/2024	10/22/2024	4/8/2025
Antimony	µg/L	--	--	--	0.07 J1	--	--	--	--	0.07 J1
Arsenic	µg/L	--	--	--	1.56	--	--	--	--	1.63
Barium	µg/L	--	--	--	32.9	--	--	--	--	36.8
Beryllium	µg/L	--	--	--	0.25 U1	--	--	--	--	0.05 J1
Cadmium	µg/L	--	--	--	0.065	--	--	--	--	0.080
Chromium	µg/L	--	--	--	0.78	--	--	--	--	0.9
Cobalt	µg/L	--	--	--	0.396	--	--	--	--	0.46
Combined Radium	pCi/L	--	--	--	--	--	--	--	--	1.42
Fluoride	mg/L	2.00	1.90	1.88	1.93	1.80	1.74	1.63	1.71	1.79
Lead	µg/L	--	--	--	1.65	--	--	--	--	1.7
Lithium	mg/L	--	0.00370	--	0.0036	--	--	--	--	0.0041
Mercury	µg/L	--	--	--	--	--	--	--	--	0.005 U1
Molybdenum	µg/L	--	--	--	563	--	--	--	--	447
Selenium	µg/L	--	--	--	0.85	--	--	--	--	1.14
Thallium	µg/L	--	--	--	0.2 U1	--	--	--	--	0.05 J1

Notes:
--: Not measured
H2: Sample analysis performed past holding time.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Geosyntec Consultants, Inc.

Parameter	Unit	MW-13D														
		3/15/2017	5/2/2018	5/30/2018	6/27/2018	6/29/2020	4/13/2021	12/27/2021	6/14/2022	11/8/2022	12/12/2022	3/8/2023	6/20/2023	4/16/2024	10/22/2024	4/8/2025
Antimony	µg/L	5 U1	5 U1	5 U1	5 U1	--	--	--	--	0.35	0.21	0.47	0.234	0.202	--	0.318
Arsenic	µg/L	5 U1	5 U1	5 U1	1.13 J1	--	--	--	--	1.21	1.37	2.63	0.81	1.73	--	0.59
Barium	µg/L	64	48.84	76.07	119	--	--	--	--	57.6	114	131	47.9	73.0	--	36.3
Beryllium	µg/L	1 U1	1 U1	0.03 J1	0.12 J1	--	--	--	--	0.12 J1	0.118	0.244	0.095	0.143	--	0.044 J1
Cadmium	µg/L	1 U1	0.13 J1	1 U1	1 U1	--	--	--	--	0.088	0.143	0.286	0.115	0.161	--	0.109
Chromium	µg/L	2	0.8 J1	1.48	3.74	--	--	--	--	1.43	1.92	4.05	1.18	2.23	--	0.63
Cobalt	µg/L	5 U1	1.61 J1	4.37 J1	4.96 J1	--	--	--	--	2.15	1.91	2.59	1.18	3.11	--	0.390
Combined Radium	pCi/L	--	3.214	4.03	--	--	--	--	--	--	--	--	--	--	3.12	4.07
Fluoride	mg/L	1 U1	1 U1	0.4361 J1	--	0.32	0.46	0.38	0.37	0.34	--	--	0.45	0.47	0.40	0.38
Lead	µg/L	5 U1	5 U1	5 U1	1.84 J1	--	--	--	--	0.83	1.44	3.51	0.93	2.26	--	0.69
Lithium	mg/L	--	0.02997	0.03287	0.02781	--	--	0.0233	--	0.0276	0.0242	0.0220	0.0208	0.0173	--	0.0309
Mercury	µg/L	0.025 U1	0.025 U1	0.025 U1	0.025 U1	--	--	--	--	--	0.005 U1	0.002 J1	0.005 U1	0.005 U1	0.005 U1	0.005 U1
Molybdenum	µg/L	--	12.38	13.07	24.56	--	--	--	--	8.9	11.6	15.5	15.4	16.0	--	7.1
Selenium	µg/L	5 U1	11.93	11.96	10.11	--	--	--	--	8.69	6.11	10.5	4.84	3.59	--	7.80
Thallium	µg/L	2 U1	2 U1	2 U1	2 U1	--	--	--	--	0.05 J1	0.05 J1	0.05 J1	0.03 J1	0.05 J1	--	0.02 J1

Notes:
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J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
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mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-14														
		5/30/2018	6/27/2018	7/31/2018	8/30/2018	8/26/2019	6/30/2020	10/21/2020	12/28/2021	11/8/2022	12/12/2022	1/24/2023	3/8/2023	4/10/2023	10/10/2023	4/16/2024
Antimony	µg/L	0.93 J1	5 U1	1.35	1.61	--	--	--	--	0.81	0.84	1.2	1.1	2.26	--	0.5 J1
Arsenic	µg/L	1.15 J1	5 U1	0.58	0.57	--	--	--	--	0.95	1.14	2.9	2.9	2.2	--	2 U1
Barium	µg/L	157	161	172	153	--	--	--	--	353 M1	283	644	854	861	--	152
Beryllium	µg/L	1 U1	1 U1	0.029	0.034	--	--	--	--	0.053	0.029 J1	0.34 J1	0.22 J1	0.19 J1	--	1 U1
Cadmium	µg/L	1 U1	1 U1	0.18	0.21	--	--	--	--	0.165	0.163	6.49	0.22	0.19 J1	--	0.13 J1
Chromium	µg/L	1 U1	1 U1	50 U1	0.286	--	--	--	--	4.61	1.80	29.9	33.3	25.0	--	6 U1
Cobalt	µg/L	3.29 J1	3.14 J1	2.63	1.71	--	--	--	--	2.08	3.28	5.64	2.17	2.01	--	0.2 J1
Combined Radium	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	mg/L	--	--	--	--	3.066	3.97	4.22	4.5	4.9	--	--	4.7	--	4.2	2.7
Lead	µg/L	5 U1	5 U1	0.037	1.06	--	--	--	--	1.12	0.58	6.6	5.1	6.6	--	4 U1
Lithium	mg/L	0.361	0.378	0.362	0.38	--	--	--	0.268	0.322	0.265	0.297	0.335	0.312	--	0.138
Mercury	µg/L	0.009 J1	0.006 J1	0.008 J1	0.025 U1	--	--	--	--	--	0.002 J1	0.008 J1	0.003 J1	0.006	--	0.004 J1
Molybdenum	µg/L	20.67	20.16	27.8	31.7	--	--	--	--	12.9	14.1	13	14	30	--	9 J1
Selenium	µg/L	5.51	4.35 J1	3.5	2.2	--	--	--	--	0.72	1.34	2.0 J1	2.0 J1	4.0 J1	--	3.8 J1
Thallium	µg/L	2 U1	42	0.05 J1	0.03 J1	--	--	--	--	0.2 U1	0.2 U1	2 U1	2 U1	2 U1	--	1.8 U1

Parameter	Unit	MW-14	
		10/22/2024	4/8/2025
Antimony	µg/L	--	2 U1
Arsenic	µg/L	--	3.4
Barium	µg/L	--	352
Beryllium	µg/L	--	1 U1
Cadmium	µg/L	--	0.4 U1
Chromium	µg/L	--	3 J1
Cobalt	µg/L	--	2.8
Combined Radium	pCi/L	0.58	1.59
Fluoride	mg/L	1.9	4.4
Lead	µg/L	--	4 U1
Lithium	mg/L	--	0.229
Mercury	µg/L	--	0.005 U1
Molybdenum	µg/L	--	8 J1
Selenium	µg/L	--	10 U1
Thallium	µg/L	--	4 U1

Notes:
--: Not measured
H2: Sample analysis performed past holding time.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Geosyntec Consultants, Inc.

Parameter	Unit	MW-15														
		1/25/2017	3/13/2017	4/25/2017	5/18/2017	6/15/2017	6/27/2017	7/12/2017	8/4/2017	8/17/2017	8/30/2017	9/13/2017	9/20/2017	10/11/2017	5/30/2018	10/15/2018
Antimony	µg/L	5 U1	5 U1	1.31 J1	1.38 J1	5 U1	5 U1	1.63 J1	1.56 J1	0.99 J1	5 U1	5 U1	5 U1	--	5 U1	--
Arsenic	µg/L	5 U1	5 U1	2.85 J1	13.61	7.56	4.4 J1	3.77 J1	3.73 J1	4.44 J1	6.32	4.18 J1	3.87 J1	--	3.9 J1	--
Barium	µg/L	107	100	55.73	52.06	212	98.67	150	94.19	133	64.87	54.34	49.23	--	256	--
Beryllium	µg/L	1 U1	1 U1	1 U1	1 U1	0.25 J1	0.02 J1	0.12 J1	0.08 J1	0.09 J1	0.04 J1	0.03 J1	1 U1	--	1.25	--
Cadmium	µg/L	1 U1	1 U1	1 U1	0.26 J1	0.64 J1	1 U1	0.09 J1	0.09 J1	1 U1	1 U1	1 U1	1 U1	--	0.38 J1	--
Chromium	µg/L	3	3	0.23 J1	0.96 J1	8.57	1.79	4.03	1.51	3.3	0.86 J1	1 U1	0.23 J1	--	6.61	--
Cobalt	µg/L	5 U1	5 U1	0.64 J1	0.62 J1	3.96 J1	1.29 J1	2.64 J1	1.4 J1	1.69 J1	0.78 J1	0.66 J1	0.77 J1	--	2.61 J1	--
Combined Radium	pCi/L	0.505	1.241	0.203	1.097	1.215	1.652	0.287	0.914	0.649	0.393	1.07	0.887	--	--	--
Fluoride	mg/L	2	2	1.83	2	1.96	1.8739	1.894	1.759	1.691	2.0289	1.671	0.642 J1	1.9468	2.331	2.27
Lead	µg/L	5 U1	5 U1	5 U1	1.7 J1	5.25	2.42 J1	2.87 J1	1.36 J1	1.44 J1	5 U1	5 U1	5 U1	--	5.18	--
Lithium	mg/L	0.012	0.01	0.00786	0.00834	0.01148	0.00722	0.0091	0.00752	0.00823	0.00629	0.00635	0.00621	--	0.01161	--
Mercury	µg/L	0.025 U1	0.025 U1	0.025 U1	0.022 J1	0.02 J1	0.022 J1	0.009 J1	0.021 J1	0.015 J1	0.01 J1	0.008 J1	0.025 U1	--	0.024 J1	--
Molybdenum	µg/L	643	550	614	605	662	644	668	647	642	656	638	652	--	551	--
Selenium	µg/L	5 U1	5 U1	1.83 J1	22.28	12.46	5.76	9	6	5.95	9.24	1.45 J1	3.77 J1	--	5.37	--
Thallium	µg/L	2 U1	2 U1	1.05 J1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	2 U1	--	2 U1	--

Parameter	Unit	MW-15													
		10/22/2018	2/27/2019	8/26/2019	6/30/2020	10/21/2020	4/13/2021	12/28/2021	6/14/2022	11/7/2022	6/20/2023	10/10/2023	4/16/2024	10/22/2024	4/8/2025
Antimony	µg/L	--	--	--	--	--	--	--	--	0.14	--	--	--	--	0.069 J1
Arsenic	µg/L	--	--	--	--	--	--	--	--	1.61	--	--	--	--	2.02
Barium	µg/L	--	--	--	--	--	--	--	--	104	--	--	--	--	57.8
Beryllium	µg/L	--	--	--	--	--	--	--	--	0.041 J1	--	--	--	--	0.017 J1
Cadmium	µg/L	--	--	--	--	--	--	--	--	0.125	--	--	--	--	0.033
Chromium	µg/L	--	--	--	--	--	--	--	--	1.23	--	--	--	--	0.68
Cobalt	µg/L	--	--	--	--	--	--	--	--	0.516	--	--	--	--	0.194
Combined Radium	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--	1.16
Fluoride	mg/L	2.17	1.45	1.252	1.55	1.53	1.71	1.49	1.71	1.32	1.42	1.28	1.26	1.28	1.55
Lead	µg/L	--	--	--	--	--	--	--	--	1.09	--	--	--	--	0.42
Lithium	mg/L	--	--	--	--	--	--	0.00789	--	0.00859	--	--	--	--	0.00691
Mercury	µg/L	--	0.007 J1	--	--	--	--	--	--	--	--	--	--	--	0.002 J1
Molybdenum	µg/L	--	--	--	--	--	--	--	--	448	--	--	--	--	434
Selenium	µg/L	--	--	--	--	--	--	--	--	0.83	--	--	--	--	0.46 J1
Thallium	µg/L	--	--	--	--	--	--	--	--	0.2 U1	--	--	--	--	0.2 U1

Notes:
--: Not measured
H2: Sample analysis performed past holding time.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 1. Groundwater Data Summary – Appendix B
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-17								
		6/27/2017	8/17/2017	5/30/2018	6/27/2018	7/31/2018	9/19/2018	11/7/2022	2/21/2023	4/8/2025
Antimony	µg/L	5 U1	5 U1	1.61 J1	2.57 J1	0.28	0.20	0.6 J1	0.6 J1	0.4 J1
Arsenic	µg/L	20.5	18.23	5 U1	5 U1	0.28	0.27	3.9	8.8	2.0
Barium	µg/L	975	763	40.12	41.52	39.5	36.7	170	615	111
Beryllium	µg/L	2.77	2.66	1 U1	1 U1	0.005 J1	0.1 U1	0.5 J1	1.3	0.3 J1
Cadmium	µg/L	6.77	3.88	1 U1	1 U1	0.10	0.07	3.14	2.82	0.98
Chromium	µg/L	74.59	91.46	1 U1	1 U1	0.05 U1	0.2 U1	15.9	42.4	8
Cobalt	µg/L	47.64	47.25	0.31 J1	0.75 J1	1.84	2.98	20.0	15.4	7.0
Combined Radium	pCi/L	--	--	--	--	--	--	--	--	--
Fluoride	mg/L	0.9268 J1	0.699 J1	--	--	--	--	0.89	0.68	--
Lead	µg/L	76.11	56.22	5 U1	5 U1	0.056	0.06 J1	11	41	7
Lithium	mg/L	0.06776	0.07669	0.01139	0.01282	0.017	0.0121	0.020	0.032	0.020
Mercury	µg/L	0.144	0.097	0.025 U1	0.025 U1	0.025 U1	0.025 U1		0.035 J1	0.005 U1
Molybdenum	µg/L	30.24	29.04	8.38	7.94	8.66	9.62	23	45	14
Selenium	µg/L	19.31	17.5	26.7	12.46	5.4	4.4	3 J1	15	13.9
Thallium	µg/L	2 U1	2 U1	2 U1	1.63 J1	0.057	0.5 U1	0.16 J1	0.25	4 U1

Notes:
--: Not measured
H2: Sample analysis performed past holding time.
J1: Estimated value. Parameter was detected in concentrations below the reporting limit.
M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
mg/L: milligrams per liter
pCi/L: picocuries per liter
Q1: Sample received in inappropriate sample container.
Q5: Sample was received with improper chemical preservation.
SU: standard unit
U1: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
µg/L: micrograms per liter

Table 2. Groundwater Data Summary – Appendix A Intrawell Dataset
Statistical Analysis Summary
Northeastern – Landfill

Parameter	Unit	MW-2D				
		5/2/2018	2/27/2019	8/26/2019	6/29/2020	4/13/2021
Chloride	mg/L	14	16.4	12	11.5	12.1
Total Dissolved Solids	mg/L	1,206	1,218	1,236	1,310	1,250

Parameter	Unit	MW-2D			
		6/14/2022	2/21/2023	3/8/2023	10/10/2023
Chloride	mg/L	15.5	14.9	14.0	14.5
Total Dissolved Solids	mg/L	1,180 L1	1,260	1,180	1,180

Parameter	Unit	MW-13D				
		3/15/2017	5/2/2018	5/30/2018	6/29/2020	4/13/2021
Chloride	mg/L	7	5	6	4.68	5.83
Total Dissolved Solids	mg/L	1,116	1,064	1,068	1,100	1,170

Parameter	Unit	MW-13D			
		12/27/2021	6/14/2022	11/8/2022	6/20/2023
Chloride	mg/L	4.82	4.36	4.41	10.8
Total Dissolved Solids	mg/L	1,120	990 L1	1,060	1,290

Parameter	Unit	MW-17				
		6/27/2017	8/17/2017	5/30/2018	6/27/2018	7/31/2018
Calcium	mg/L	894	789	191	205	234

Parameter	Unit	MW-17		
		9/19/2018	11/7/2022	2/21/2023
Calcium	mg/L	330	231	469

Notes:
--: not measured
L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.
mg/L: milligrams per liter

Table 3. Appendix B Groundwater Protection Standards *Geosyntec Consultants, Inc.*
Statistical Analysis Summary
Northeastern – Landfill

Constituent Name	MCL	CCR Rule-Specified	Calculated UTL	GWPS
Antimony, Total (mg/L)	0.00600		0.00388	0.00600
Arsenic, Total (mg/L)	0.0100		0.0599	0.0599
Barium, Total (mg/L)	2.00		2.77	2.77
Beryllium, Total (mg/L)	0.00400		0.00212	0.00400
Cadmium, Total (mg/L)	0.00500		0.000168	0.00500
Chromium, Total (mg/L)	0.100		0.00339	0.100
Cobalt, Total (mg/L)	n/a	0.00600	0.0179	0.0179
Combined Radium, Total (pCi/L)	5.00		19.1	19.1
Fluoride, Total (mg/L)	4.00		4.39	4.39
Lead, Total (mg/L)	n/a	0.0150	0.00857	0.0150
Lithium, Total (mg/L)	n/a	0.0400	0.163	0.163
Mercury, Total (mg/L)	0.00200		0.0000300	0.00200
Molybdenum, Total (mg/L)	n/a	0.100	0.0100	0.100
Selenium, Total (mg/L)	0.0500		0.00499	0.0500
Thallium, Total (mg/L)	0.00200		0.00162	0.00200

Notes:
1. Calculated UTL (upper tolerance limit) represents site-specific background values.
2. Grey cells indicate the GWPS is based on the calculated UTL, which is higher than the MCL or CCR Rule-specified value.
CCR: coal combustion residuals
GWPS: groundwater protection standard
MCL: maximum contaminant level
mg/L: milligrams per liter
n/a: not applicable
pCi/L: picocuries per liter

Table 4. Appendix A Data Summary
Statistical Analysis Summary
Northeastern – Landfill

Analyte	Unit	Description	MW-2D	MW-3D	MW-4D	MW-5D	MW-6D	MW-9D	MW-12D	MW-13D	MW-14	MW-15*	MW-17
			4/7/2025	4/8/2025	4/7/2025	4/8/2025	4/8/2025	4/8/2025	4/8/2025	4/8/2025	4/8/2025	4/8/2025	4/8/2025
Boron	mg/L	Interwell Background Value (UPL)						0.520					
		Analytical Result	**9.09**	**0.893**	**0.958**	0.425	**2.76**	**6.14**	**6.09**	**0.602**	**1.0**	**7.54**	**1.0**
Calcium	mg/L	Intrawell Background Value (UPL)	75.5	172	213	164	264	274	165	249	182	146	2473
		Analytical Result	14.7	116	**221**	117	178	257	58.4	146	83.0	93.0	241
Chloride	mg/L	Intrawell Background Value (UPL)	19.0	15.0	42.6	30.3	33.7	106	23.0	10.8	n/a	46.8	n/a
		Analytical Result	13.9	12.9	36.7	24.8	27.0	23.0	12.2	4.28	1,820	14.1	--
Fluoride	mg/L	Interwell Background Value (UPL)						4.39					
		Analytical Result	1.34	0.94	0.28	0.67	0.92	0.86	1.79	0.38	**4.4**	1.55	--
pH	SU	Interwell Background Value (UPL)						9.1					
		Interwell Background Value (LPL)						7.0					
		Analytical Result	**10.3**	7.9	**6.9**	7.9	7.9	8.6	8.3	7.3	7.8	8.7	7.8
Sulfate	mg/L	Interwell Background Value (UPL)						83.0					
		Analytical Result	**658**	**163**	**429**	**119**	**448**	**508**	**478**	**348**	68	**644**	--
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	1,360	810	1,020	690	1,160	1,710	1,190	1,360	n/a	1,150	n/a
		Analytical Result	1,230	620	**1,110**	570	1,080	1,140	910	1,010	3,890	1,090	--

Notes:
1. Bold values exceed the background value.
2. Background values are shaded gray.
3. Intrawell prediction limits will be recalculated in Fall 2025.
*: well purged dry and sampled next day. pH value measured on 4/7/2025.
--: not sampled
LPL: lower prediction limit
mg/L: milligrams per liter
n/a: not available due to insufficient samples
SU: standard units
UPL: upper prediction limit

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Northeastern Landfill 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



Signature

26057	**Oklahoma**	**09.05.2025**
License Number	Licensing State	Date

ATTACHMENT B
Statistical Analysis Output – Appendix B

GROUNDWATER STATS CONSULTING

July 3, 2025

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Suite 250
Worthington, OH 43085

Re: Northeastern Landfill – Assessment Monitoring Evaluation April 2025

Dear Ms. Kreinberg,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the groundwater data evaluation of Appendix B Assessment Monitoring parameters through April 2025 at American Electric Power's Northeastern Landfill. The analysis complies with the Oklahoma Administrative Code (OAC 252:517), the federal rule for the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule, 2015), as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling began at the Northeastern Landfill for the CCR program in 2017 except for those downgradient wells discussed below. The monitoring well network, as provided by Geosyntec Consultants, consists of the following:

- **Upgradient wells:** SP-4 and SP-5R
- **Downgradient wells**: MW-1D, MW-2D, MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-10D, MW-11D, MW-12D, MW-13D, MW-14, MW-15, MW-16, and MW-17

Due to high salinity, proposed upgradient wells were previously not approved as background for this facility. For the current screening, however, upgradient wells from Northeastern Bottom Ash Pond (BAP), SP-4 and SP-5R listed above, were reportedly approved as background wells for Northeastern Landfill. Downgradient wells MW-2D and

MW-14 were first sampled in 2019; downgradient well MW-17 was first sampled in 2017; and downgradient well MW-13D was first sampled in 2020.

The following downgradient wells currently have sufficient samples (n≥8) for statistical analysis: MW-2D, MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-12D, MW-13D, MW-14, MW-15, and MW-17. Note, however, that wells MW-2D, MW-13D, MW-14 do not yet have sufficient samples for combined radium 226 +228; and well MW-17 does not yet have sufficient samples for combined radium 226 + 228 and fluoride. Additionally, downgradient wells MW-1D, MW-10D, MW-11D, and MW-16 have been historically dry during some of the sample events and also do not have a minimum of 8 samples. Therefore, data are plotted on time series and box plots, but no formal statistical analyses are included for these particular well/constituent pairs at this time.

Data were sent electronically to Groundwater Stats Consulting, and the background screening performed during this analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting.

The following constituents were evaluated:

- **Appendix B** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

The initial background screening was conducted in October 2018 on all wells in the original monitoring well network. and the 2018 statistical analysis was reviewed by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting and primary author of the USEPA Unified Guidance. During this analysis, an updated screening was conducted for all downgradient wells with at least 8 samples for construction of confidence intervals.

Time series plots for Appendix B parameters at all wells are provided for the purpose of screening data at these wells. Additionally, box plots are included for all constituents at upgradient and downgradient wells. The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells. A substitution of the most recent reporting limit was applied when varying detection limits existed in data.

Summary of Statistical Methods

- Interwell upper tolerance limits with 95% confidence and 95% for all Appendix B constituents
- Confidence intervals with 99% confidence for all Appendix B constituents

Parametric tolerance limits and confidence intervals are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. While the false positive rate associated with the parametric limits is based on 5% for interwell tolerance limits and 1% for confidence intervals as recommended by the EPA Unified Guidance (2009), the false positive rate associated with the nonparametric limits is dependent upon the available background sample size. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits. Non-detects are handled as follows:

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

Upper tolerance limits, which are constructed using pooled upgradient well data from well SP4 and SP-5R, were updated during the Fall 2024 statistical analysis prepared for the Northeastern BAP. These limits are updated on an annual basis and, therefore, required no additional screening during this analysis. A summary of the screening is provided below.

Summary of Background Update – Fall 2024

Upgradient well data were screened through visual screening and Tukey's outlier test for potential outliers and extreme trending patterns that would lead to artificially elevated statistical limits for Appendix B parameters.

Prior to the Fall 2024 screening, the Rank Von Neumann serial correlation test was used during the Fall 2022 background update to evaluate whether measurements collected at these upgradient wells during 2017 represented independent samples, or whether serial correlation was present among the measurements. The following records were identified with statistically significant serial correlation at upgradient wells and were, therefore, truncated to remove earlier measurements for construction of statistical limits using only more recent data that represent independent samples:

- Barium: SP-4
- Cadmium: SP-4 and SP-5R
- Chromium: SP-4
- Lithium: SP-4
- Selenium: SP-5R
- Thallium: SP-4 and SP-5R

The resulting date ranges are shown in the Date Range Table for these well/constituent pairs.

Outlier Analysis

For the Fall 2024 analysis, Tukey's outlier test on pooled upgradient well data identified outliers for fluoride, mercury, and selenium. Several of the values identified by Tukey's test were either very similar to other upgradient observations that were not flagged or were lower than the respective Maximum Contaminant Level (MCL); therefore, those values were not flagged as outliers. Previously flagged outliers were confirmed by Tukey's test or visual screening, and no new outlies were flagged at that time. A summary of previously flagged outliers follows this report (Figure C).

During previous updates, Tukey's outlier test and visual screening had identified high values at upgradient well SP-4 on 8/4/17, which resulted in flagging the highest values for arsenic, beryllium, cobalt, lead, and mercury as outliers.

Interwell Upper Tolerance Limits

Upper tolerance limits were used to calculate background limits from pooled upgradient well data through October 2024 for Appendix B parameters (Figure D). These limits are updated on an annual basis and will be updated again during the Fall 2025 sample event. Parametric tolerance limits are calculated with a target of 95% confidence and 95% coverage when data follow a normal or transformed-normal distribution. When data contain greater than 50% non-detects or do not follow a normal or transformed-normal distribution, non-parametric tolerance limits are constructed using the highest background measurement. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

Groundwater Protection Standards

The upper tolerance limits were compared to the MCLs and CCR Rule-Specified levels as shown in the Groundwater Protection Standard (GWPS) table following this letter to determine the highest limit for use as the GWPS in the Confidence Interval comparisons (Figure E).

Evaluation of Appendix B Parameters – April 2025

For Appendix B parameters, confidence intervals for each downgradient well/constituent were compared against corresponding Groundwater Protection Standards (GWPS). Downgradient well/constituent pairs containing 100% non-detects do not require analysis; however, no downgradient wells had 100% non-detects and, therefore, all well/constituent pairs with sufficient samples ($n \geq 8$) were eligible for confidence intervals.

Outlier Analysis

Downgradient well data through April 2025 were screened through Tukey's outlier test and visual screening using time series graphs. Since the downgradient well data are used to construct confidence intervals, values that are marginally high relative to the rest of the data are retained unless there is particular justification for excluding them. Tukey's outlier test identified values for barium, beryllium, cadmium, cobalt, combined radium 226 + 228, fluoride, mercury, molybdenum, and thallium. The majority of these measurements identified by Tukey's were low-level concentrations and were not flagged as outliers, except for the highest measurement of molybdenum at well MW-3D. Although not identified by Tukey's test, the highest values for thallium at wells MW-6D and MW-14 were also flagged. At both wells, these observations for thallium were the only detections above the reporting limit, all other results were either non-detects or estimated

(J-flagged) observations. The aforementioned values for both molybdenum and thallium occurred early in the record and were approximately an order of magnitude higher than remaining measurements within each record. These measurements were flagged as outliers and deselected prior to construction of confidence intervals.

Confidence Intervals

Confidence intervals were then constructed on downgradient wells with data through April 2025 for each of the Appendix B parameters using the highest limit of the MCL or background limit as discussed earlier for the GWPS (Figure F). As mentioned above, the most recent reporting limit is substituted for historical non-detects within a given well, and the reporting limits vary among individual wells.

When data followed a normal or transformed-normal distribution, parametric confidence intervals were constructed for Appendix B parameters. Nonparametric confidence intervals, which use the largest and smallest order statistics depending on the sample size as interval limits, were constructed when data did not follow a normal or transformed-normal distribution or when there were greater than 50% non-detects. The lower confidence limit, which is constructed with 99% confidence for parametric confidence intervals, is compared to the GWPS prepared as described above. The confidence level associated with nonparametric confidence intervals is dependent upon the number samples available.

Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. A summary of the confidence interval results follows this letter. Exceedances were found for the following well/constituent pairs:

- Lithium: MW-14
- Molybdenum: MW-2D, MW-12D, and MW-15

Trend Test Evaluation – Appendix B

Data at wells with confidence interval exceedances are further evaluated using the Sen's Slope/Mann Kendall trend test at the 95% confidence level to determine whether concentrations are statistically increasing, decreasing, or stable (Figure G). The 95% confidence level more rapidly identifies statistically significant trends and is recommended in cases with limited sample sizes as well as new downgradient wells. Upgradient wells are included in the trend analyses to identify whether similar patterns exist upgradient of the site for the same constituents. When trends are present in upgradient wells, it is an indication of variability in groundwater quality unrelated to

practices at the site. A summary of the Appendix B trend test results follows this letter. Statistically significant trends were identified for the following well/constituent pairs:

Increasing trends:

- None

Decreasing trends:

- Lithium: SP-4 (upgradient), SP-5R (upgradient), and MW-14
- Molybdenum: SP-5R and MW-2D

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Northeastern Landfill. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,





Andrew Collins
Project Manager

Kristina L. Rayner
Senior Statistician

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Date Ranges

Date: 6/17/2025 11:36 AM

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Barium (mg/L)
- SP-4 overall:5/30/2018-4/8/2025

Cadmium (mg/L)
- SP-4 overall:5/30/2018-4/8/2025
- SP-5R overall:5/30/2018-4/8/2025

Chromium (mg/L)
- SP-4 overall:5/30/2018-4/8/2025

Lithium (mg/L)
- SP-4 overall:5/30/2018-4/8/2025

Selenium (mg/L)
- SP-5R overall:5/30/2018-4/8/2025

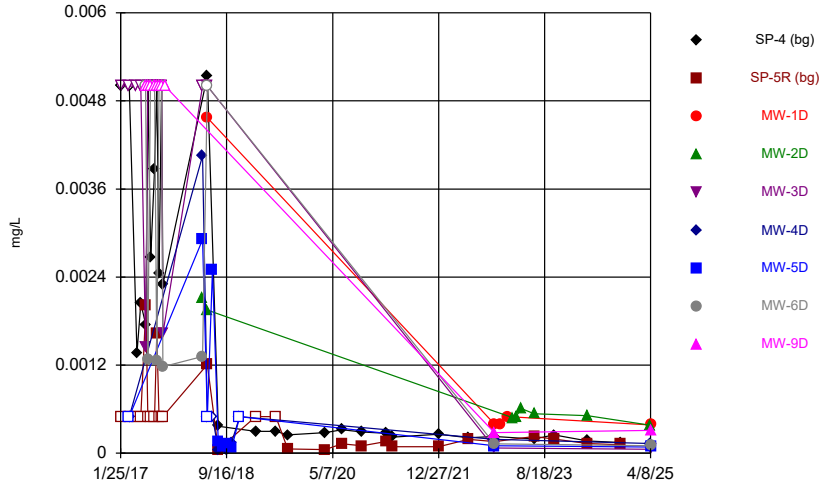
Thallium (mg/L)
- SP-4 overall:5/30/2018-4/8/2025
- SP-5R overall:5/30/2018-4/8/2025

FIGURE A

Time Series

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Hollow symbols indicate censored values.

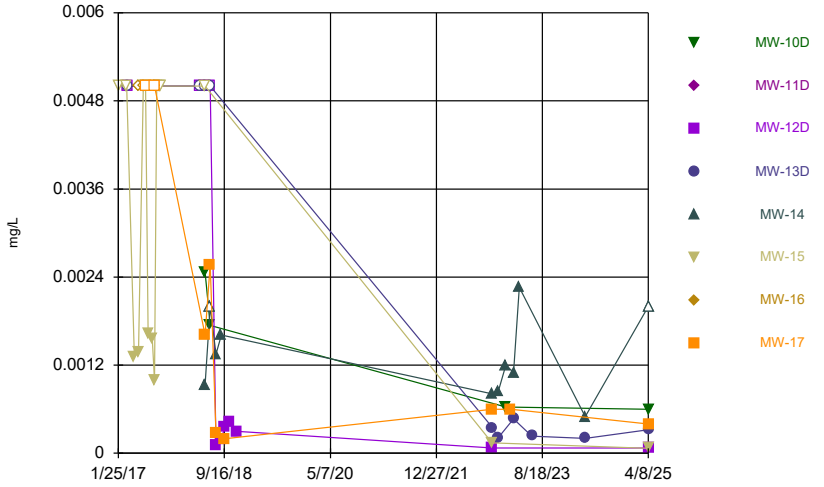
Time Series



Constituent: Antimony Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

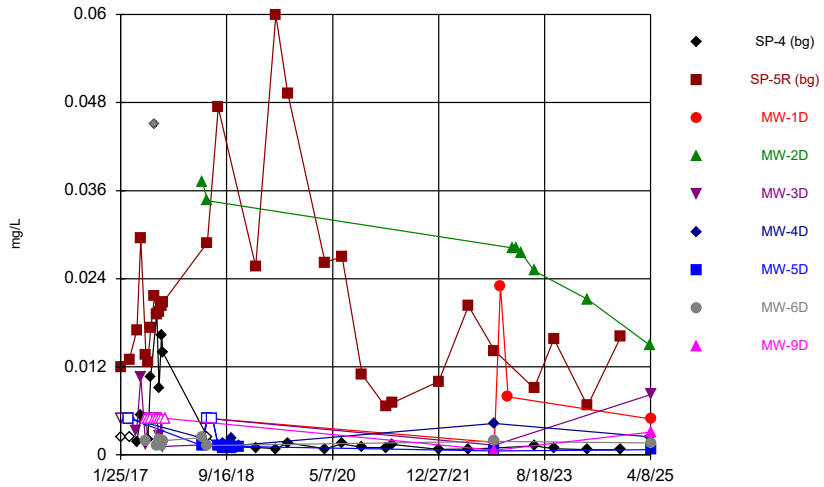
Time Series



Constituent: Antimony Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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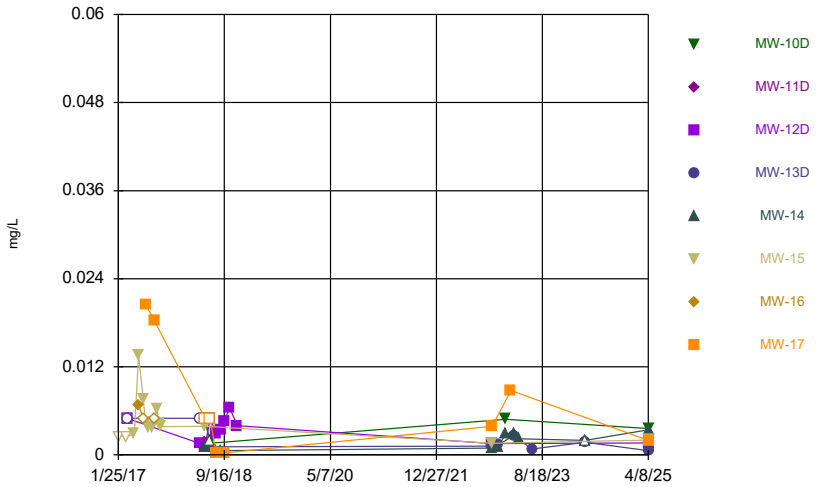
Time Series



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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG
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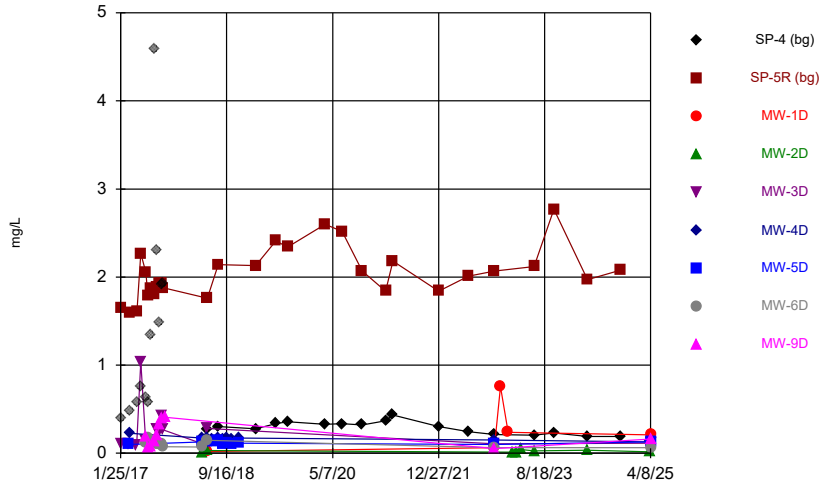
Time Series



Constituent: Arsenic Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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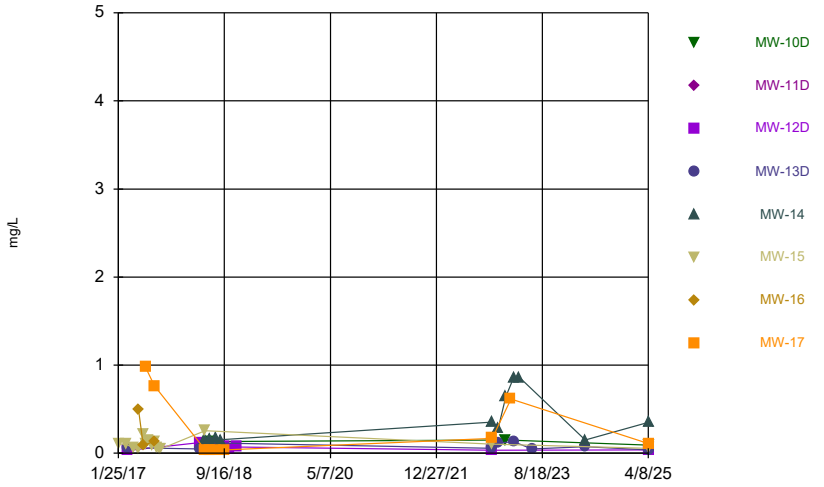
Time Series



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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

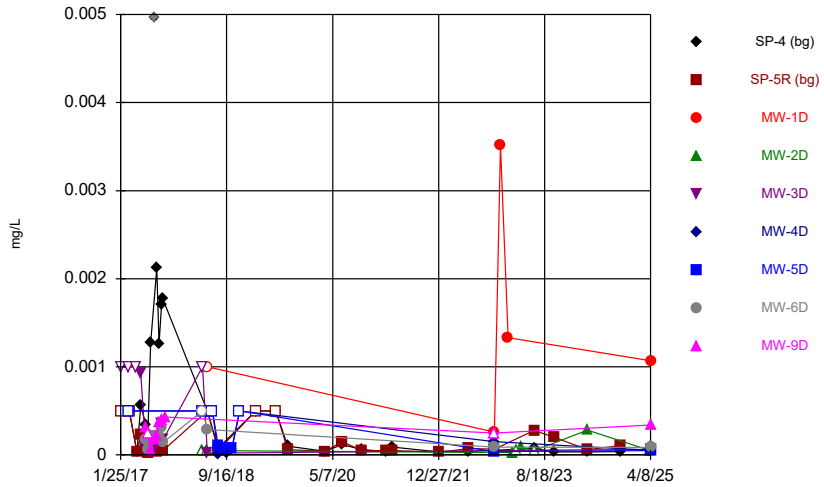
Time Series



Constituent: Barium Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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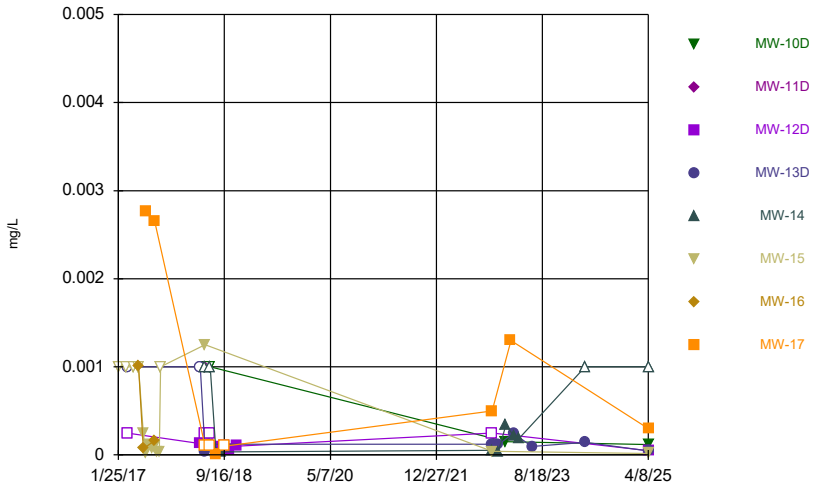
Time Series



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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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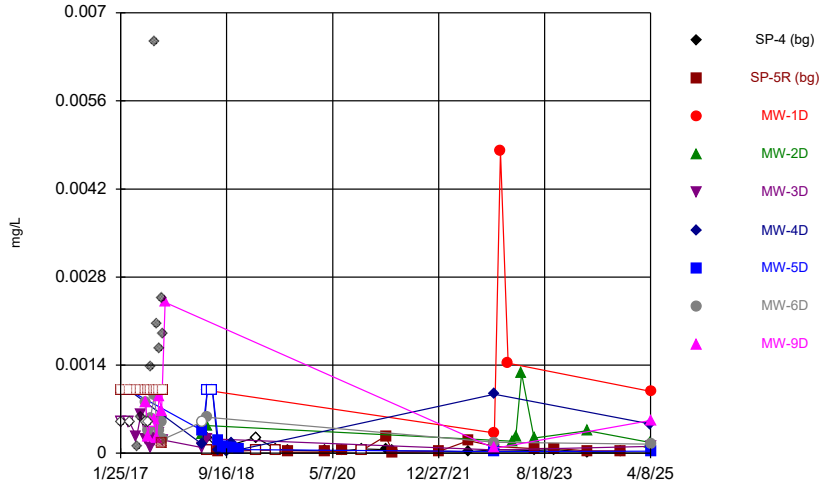
Time Series



Constituent: Beryllium Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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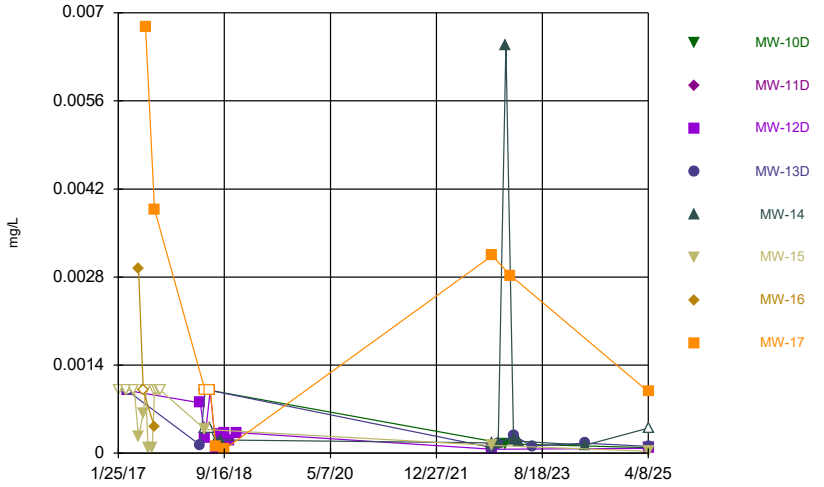
Time Series



Constituent: Cadmium Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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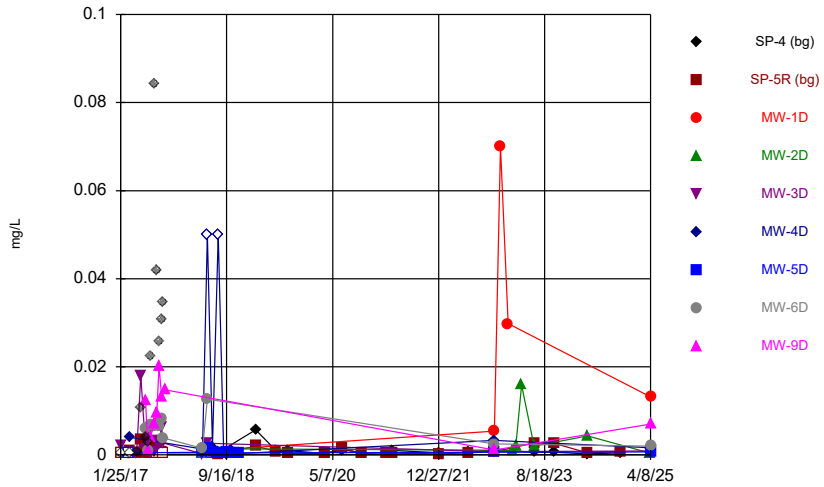
Time Series



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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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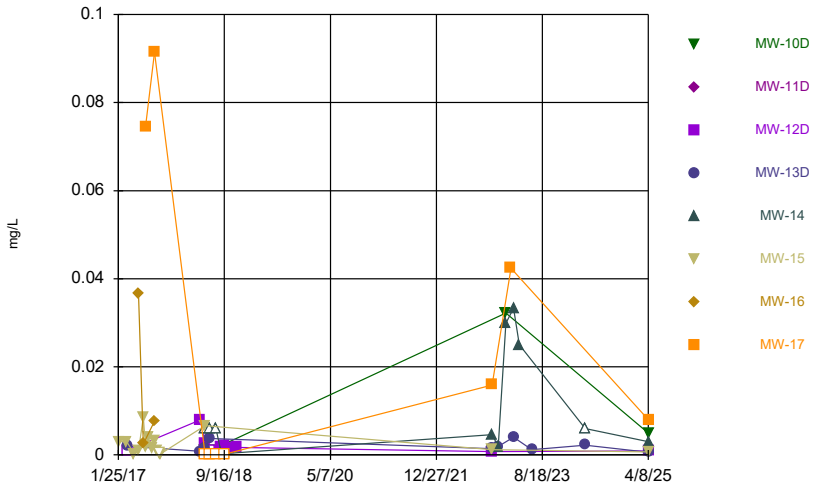
Time Series



Constituent: Chromium Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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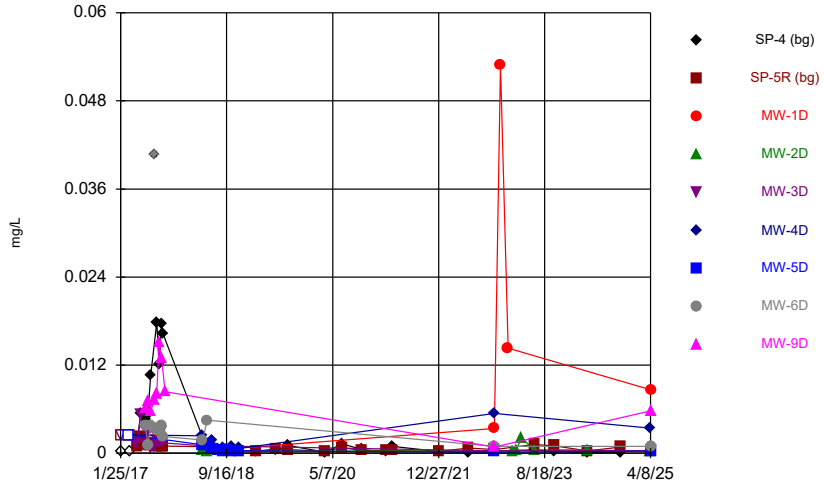
Time Series



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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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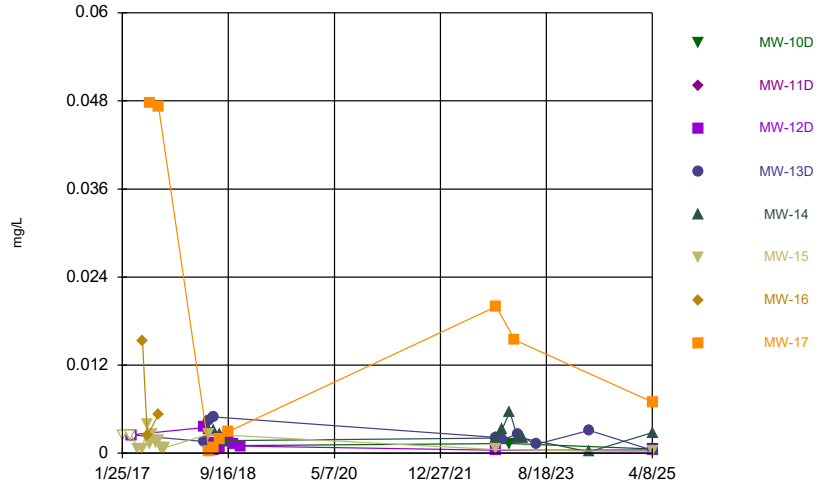
Time Series



Constituent: Cobalt Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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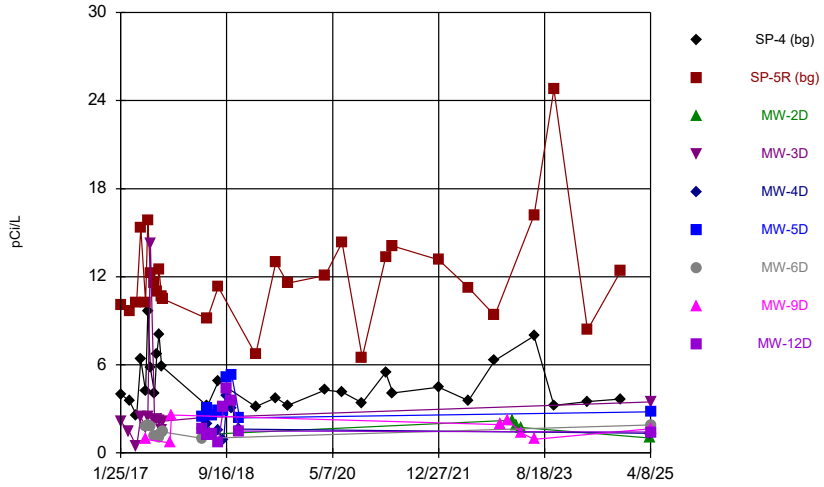
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Constituent: Cobalt Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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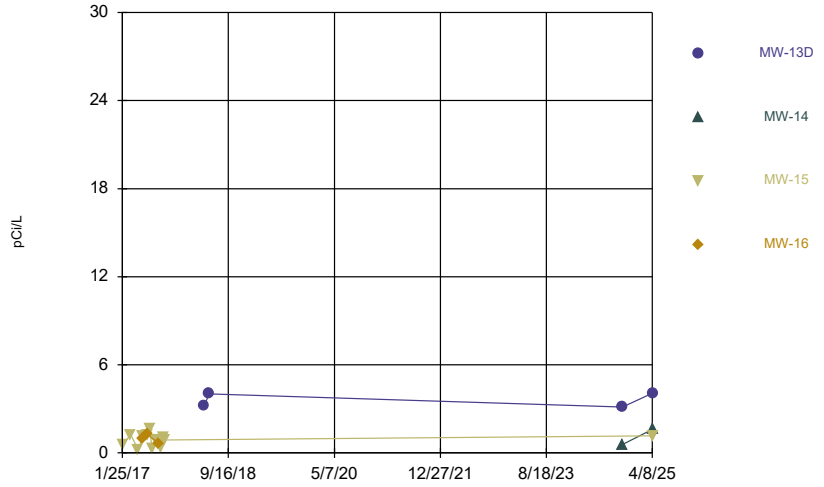
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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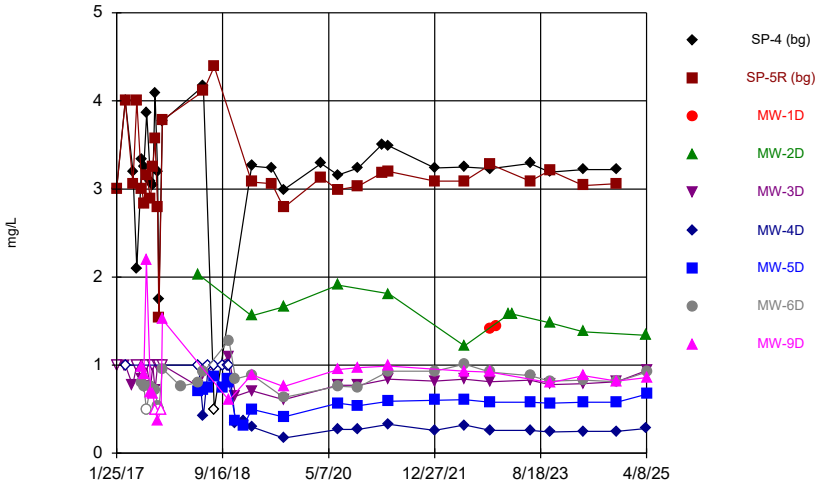
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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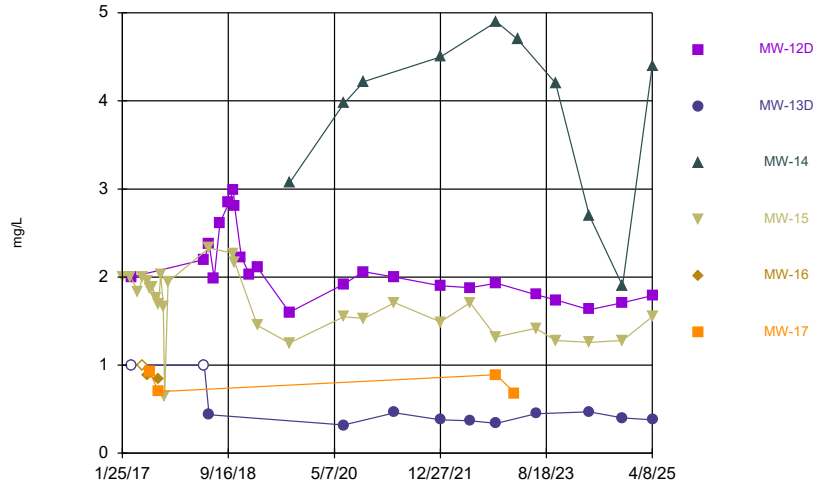
Time Series



Constituent: Fluoride Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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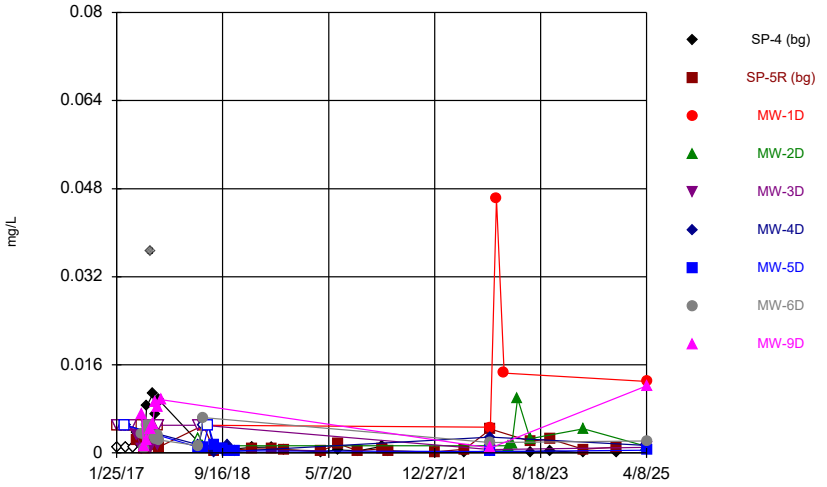
Time Series



Constituent: Fluoride Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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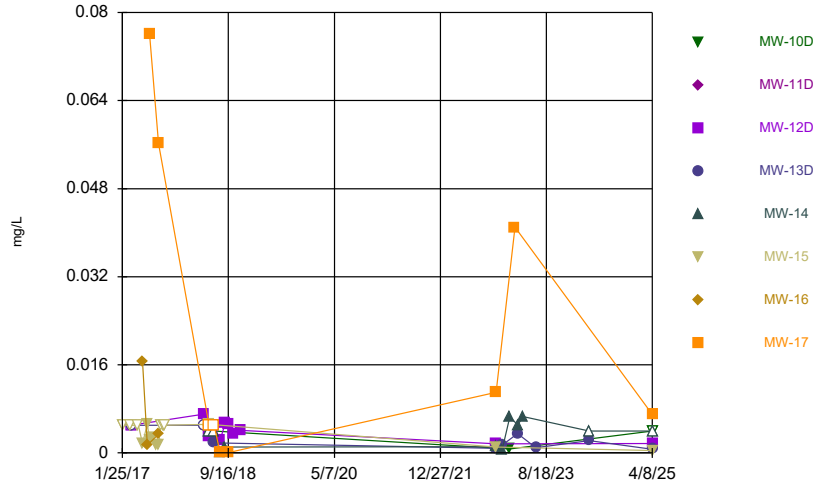
Time Series



Constituent: Lead Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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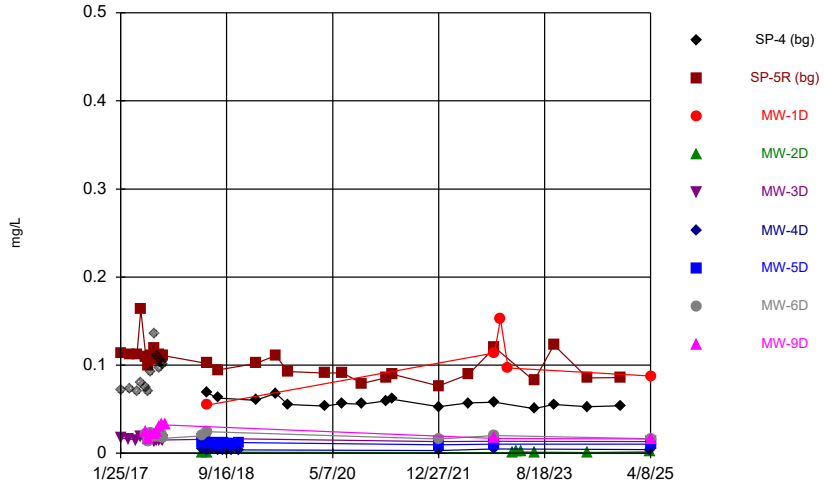
Time Series



Constituent: Lead Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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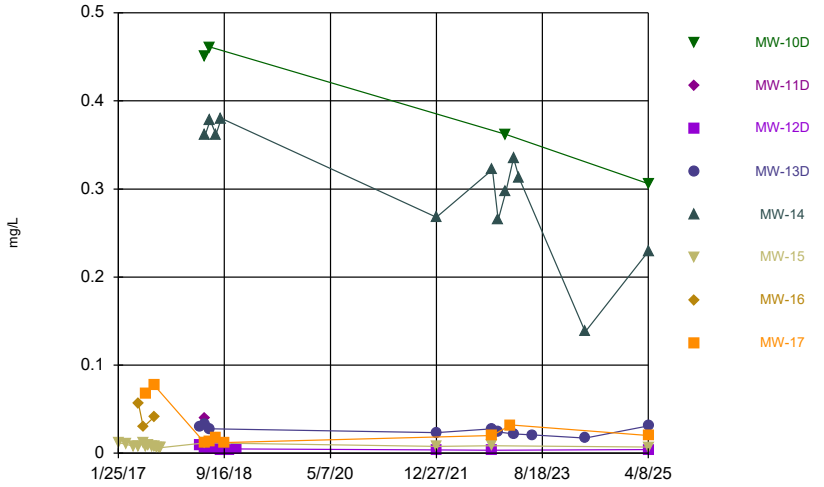
Time Series



Constituent: Lithium Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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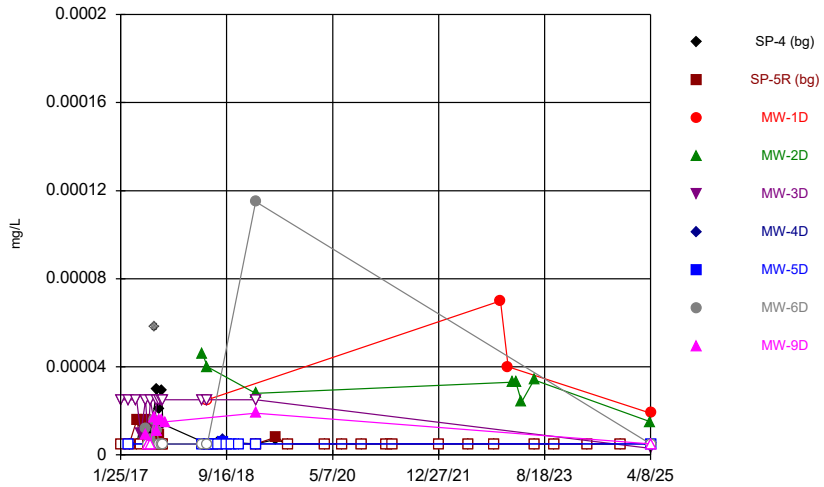
Time Series



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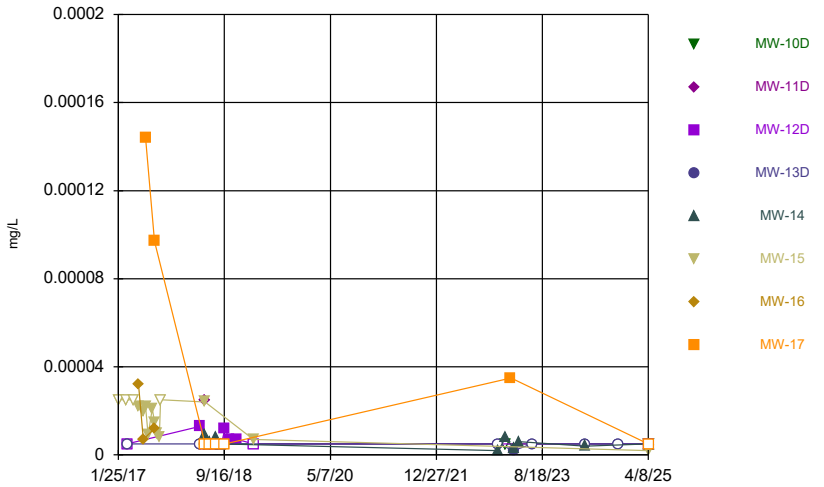
Time Series



Constituent: Mercury Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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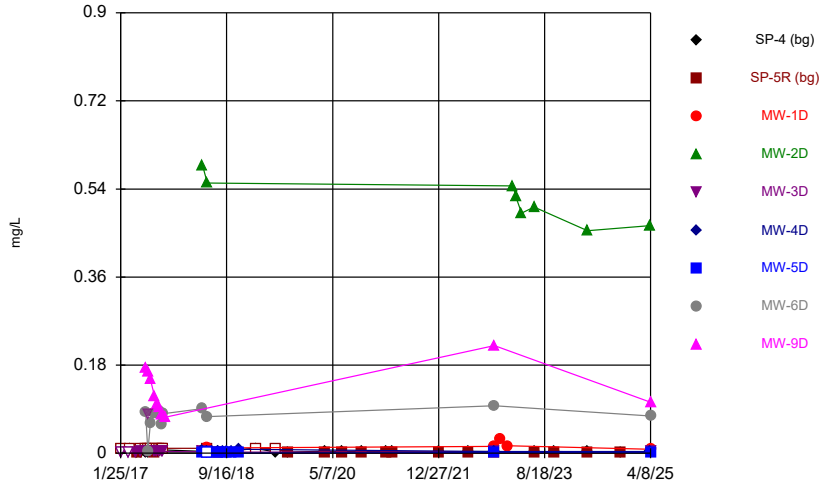
Time Series



Constituent: Mercury Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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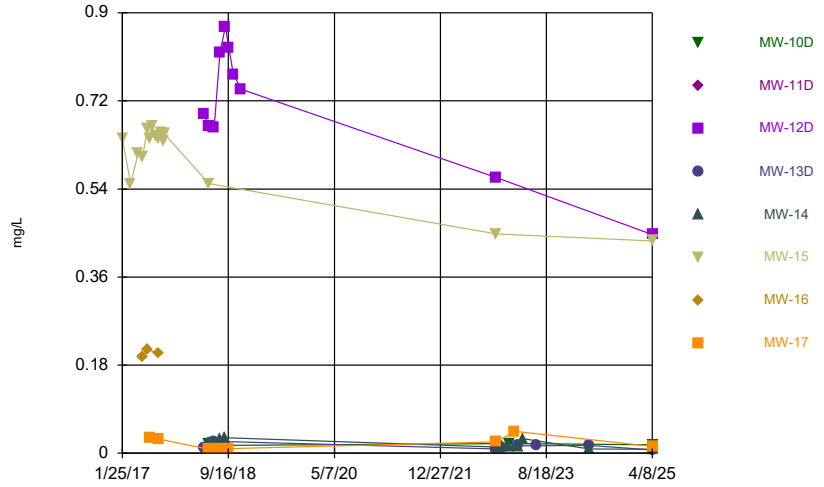
Time Series



Constituent: Molybdenum Analysis Run 6/18/2025 2:34 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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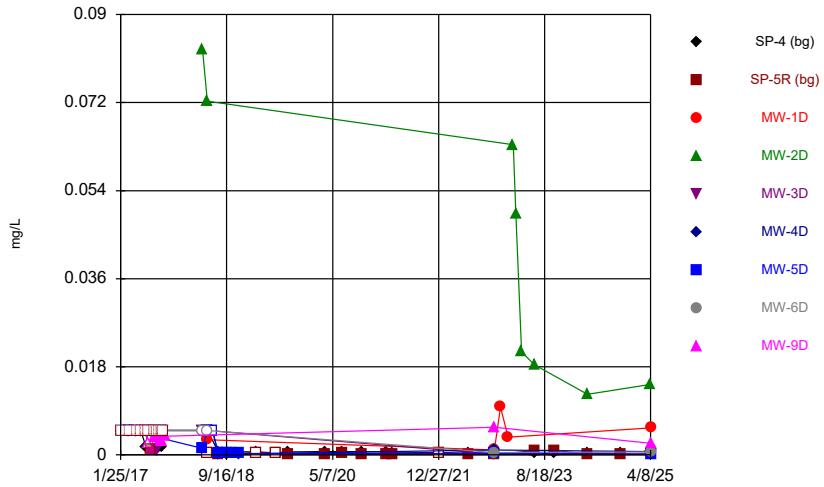
Time Series



Constituent: Molybdenum Analysis Run 6/18/2025 2:35 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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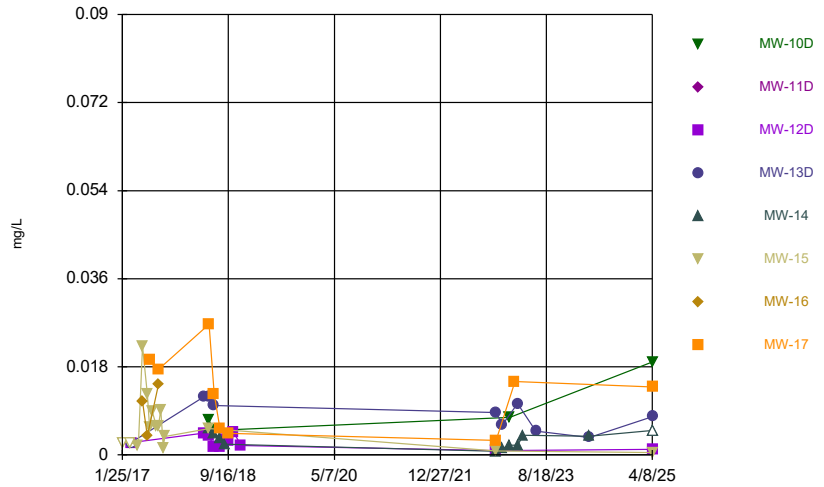
Time Series



Constituent: Selenium Analysis Run 6/18/2025 2:35 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Hollow symbols indicate censored values.

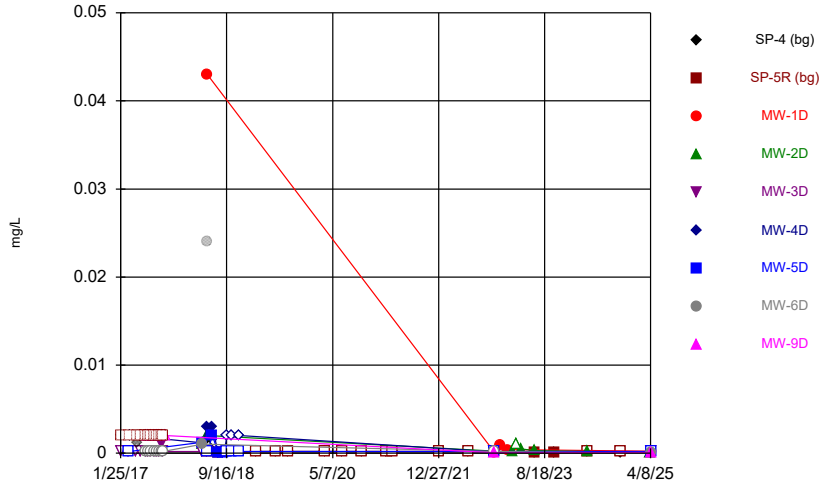
Time Series



Constituent: Selenium Analysis Run 6/18/2025 2:35 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Hollow symbols indicate censored values.

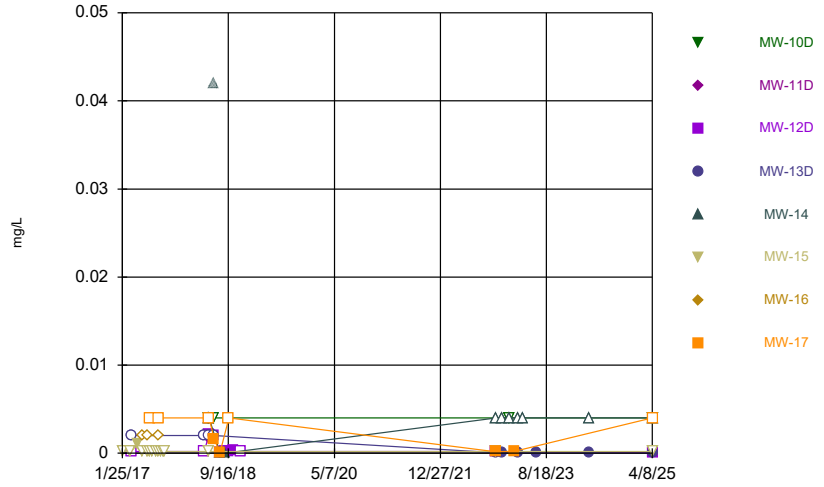
Time Series



Constituent: Thallium Analysis Run 6/18/2025 2:35 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Hollow symbols indicate censored values.

Time Series



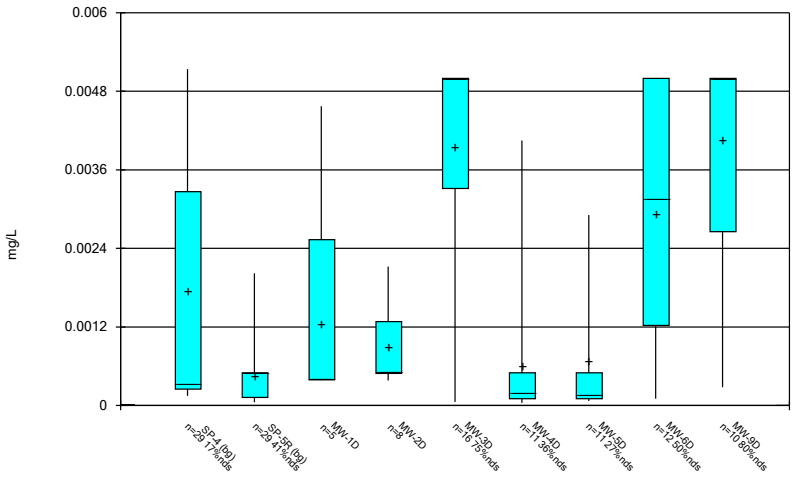
Constituent: Thallium Analysis Run 6/18/2025 2:35 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

FIGURE B

Box Plots

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

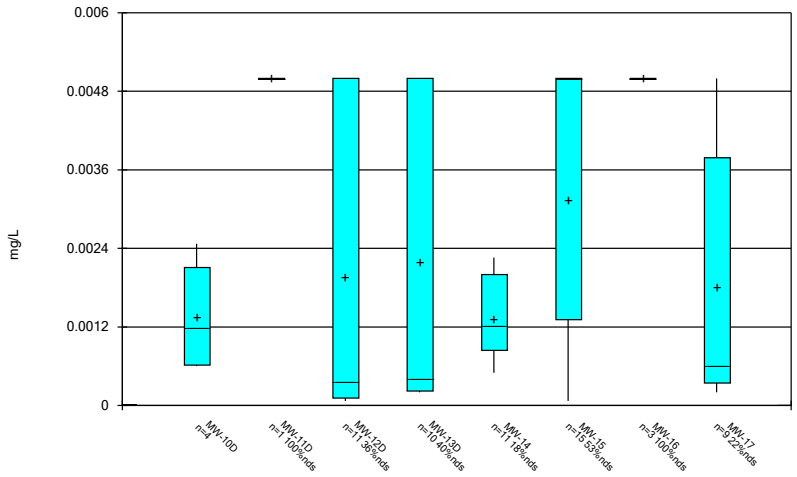
Box & Whiskers Plot



Constituent: Antimony Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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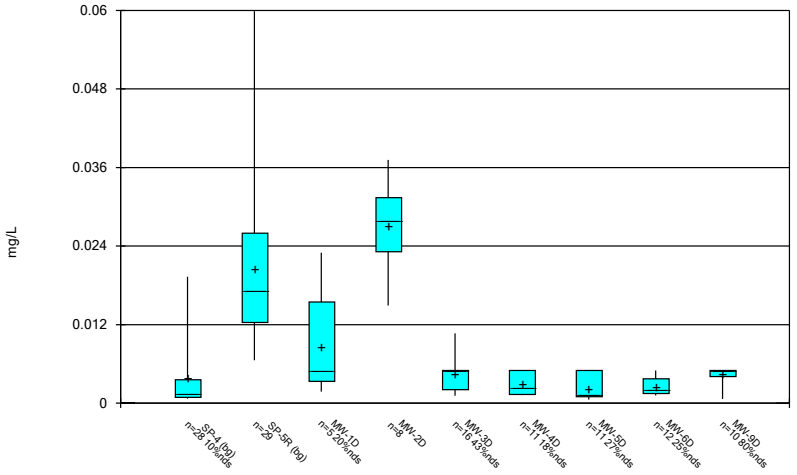
Box & Whiskers Plot



Constituent: Antimony Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

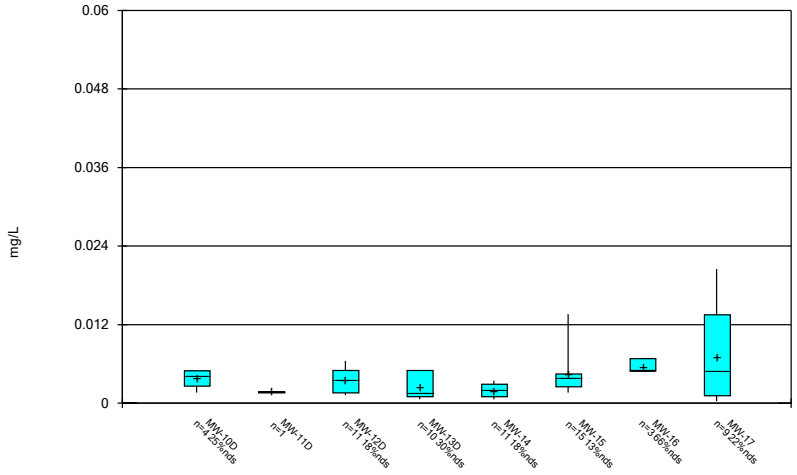
Box & Whiskers Plot



Constituent: Arsenic Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

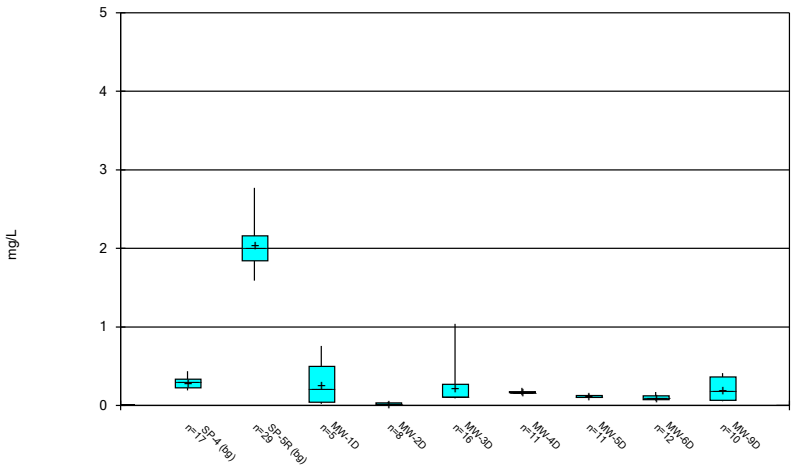
Box & Whiskers Plot



Constituent: Arsenic Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

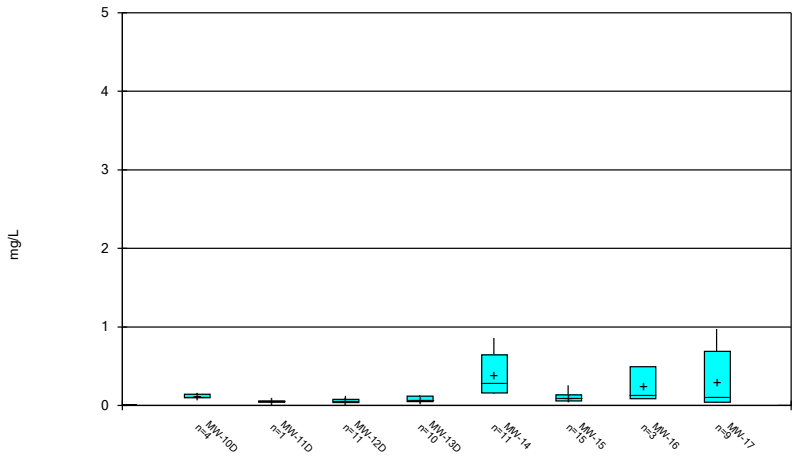
Box & Whiskers Plot



Constituent: Barium Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

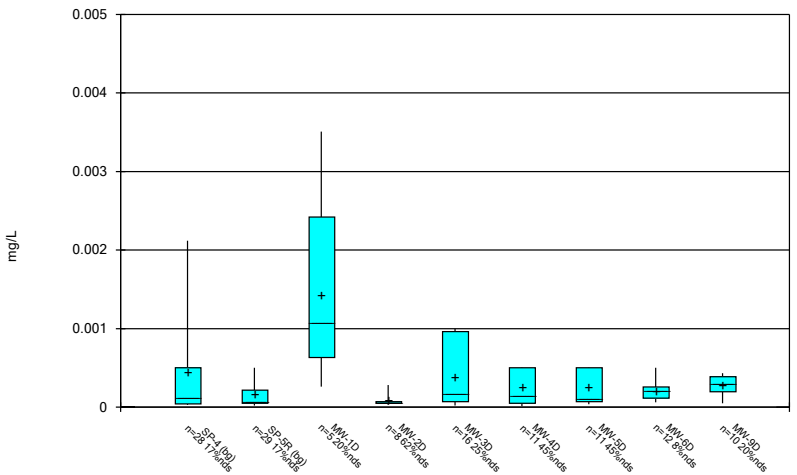
Box & Whiskers Plot



Constituent: Barium Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

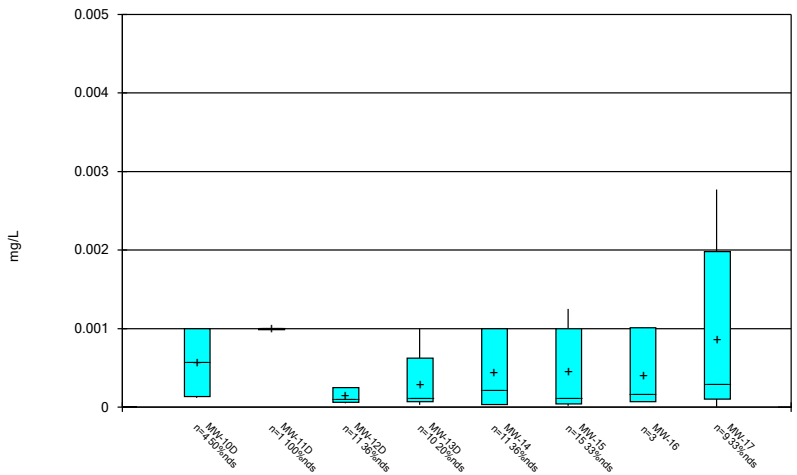
Box & Whiskers Plot



Constituent: Beryllium Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

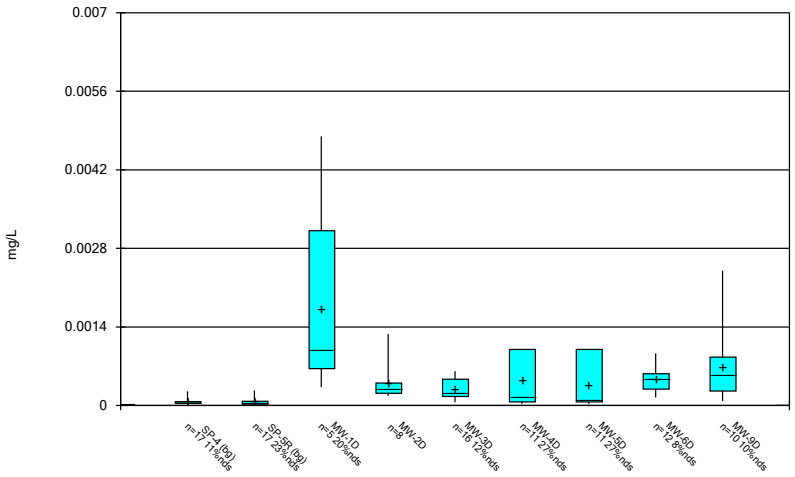
Box & Whiskers Plot



Constituent: Beryllium Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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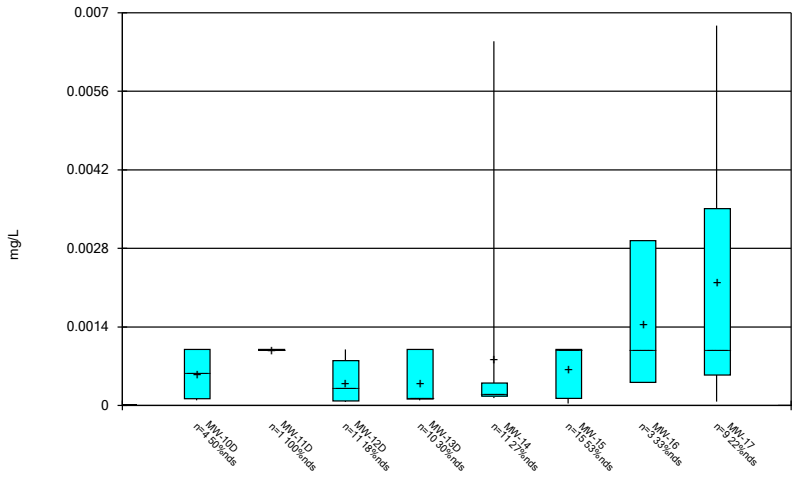
Box & Whiskers Plot



Constituent: Cadmium Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

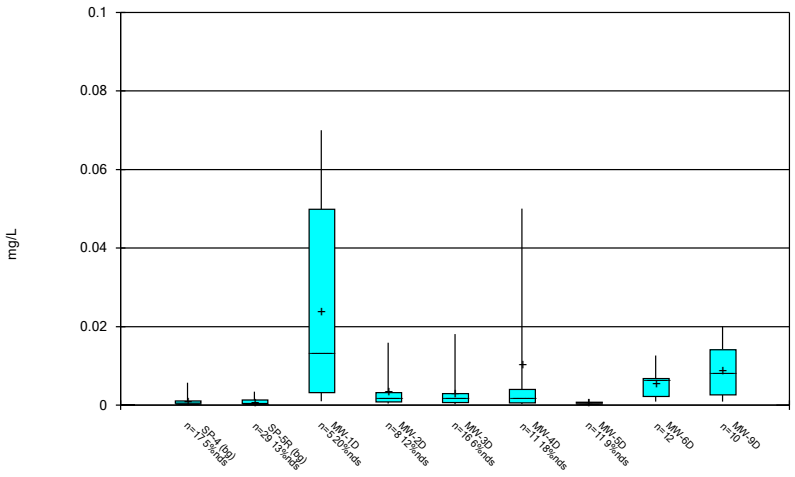
Box & Whiskers Plot



Constituent: Cadmium Analysis Run 6/18/2025 2:36 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

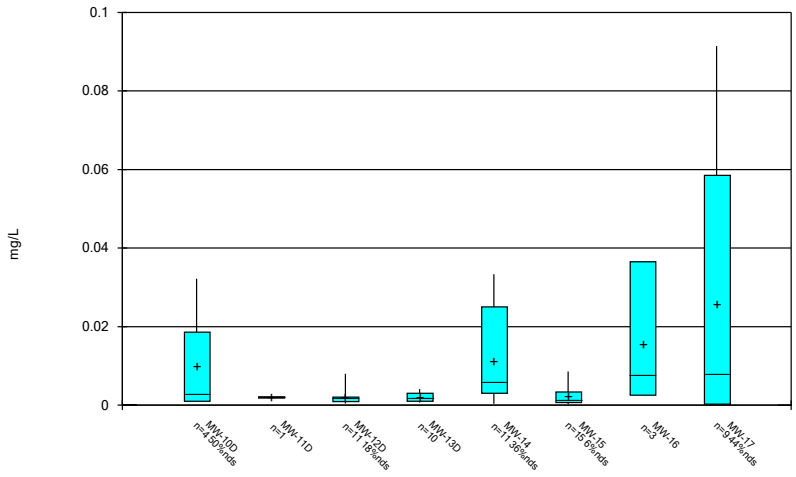
Box & Whiskers Plot



Constituent: Chromium Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

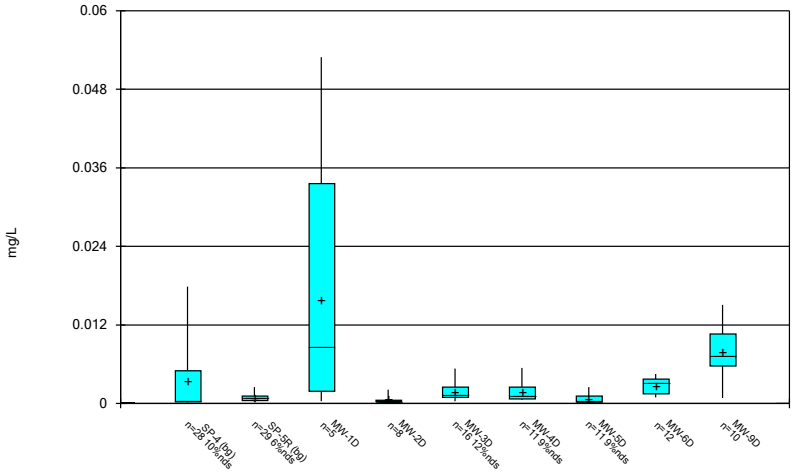
Box & Whiskers Plot



Constituent: Chromium Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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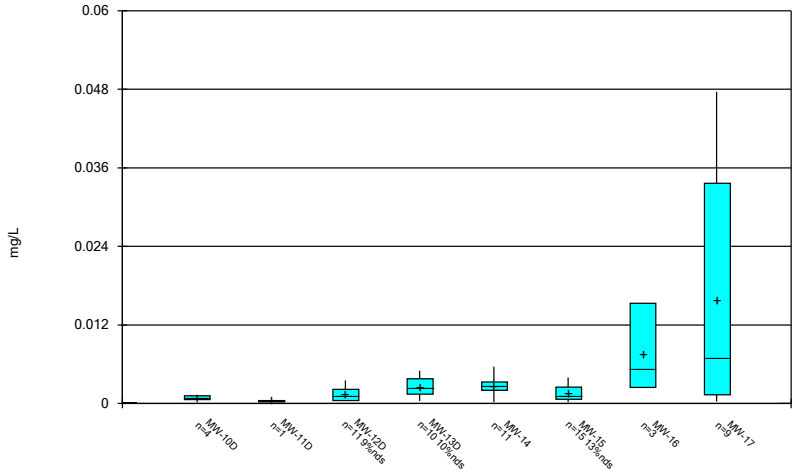
Box & Whiskers Plot



Constituent: Cobalt Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

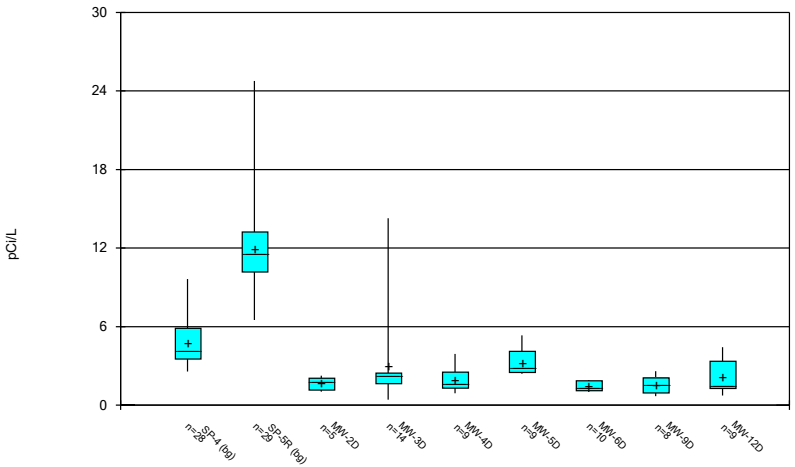
Box & Whiskers Plot



Constituent: Cobalt Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

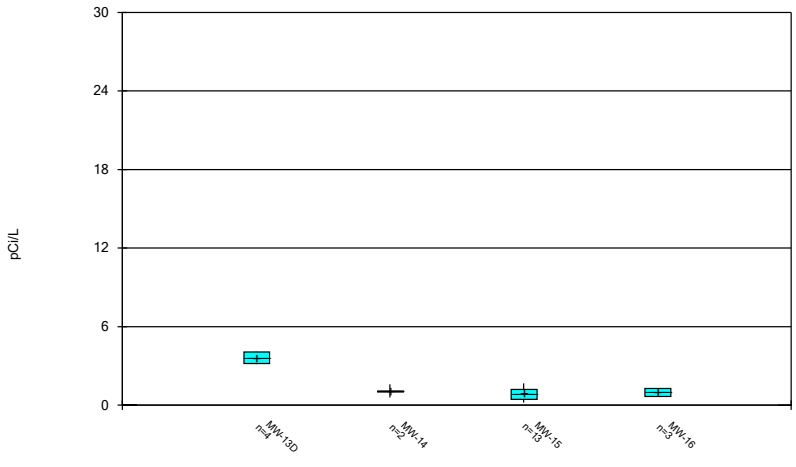
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

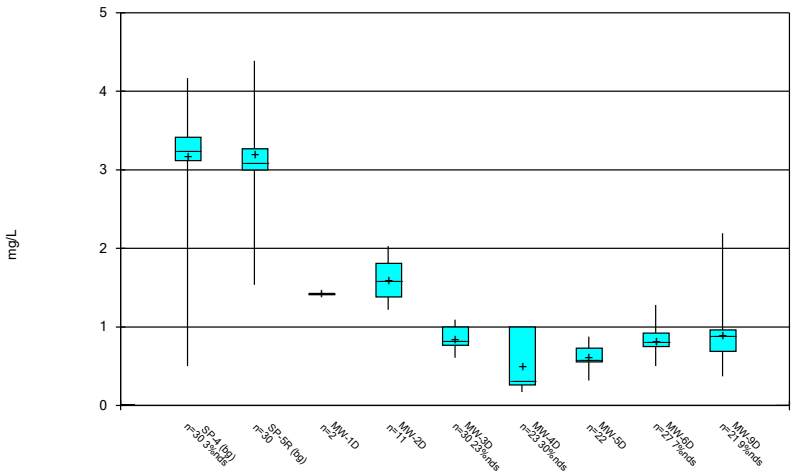
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

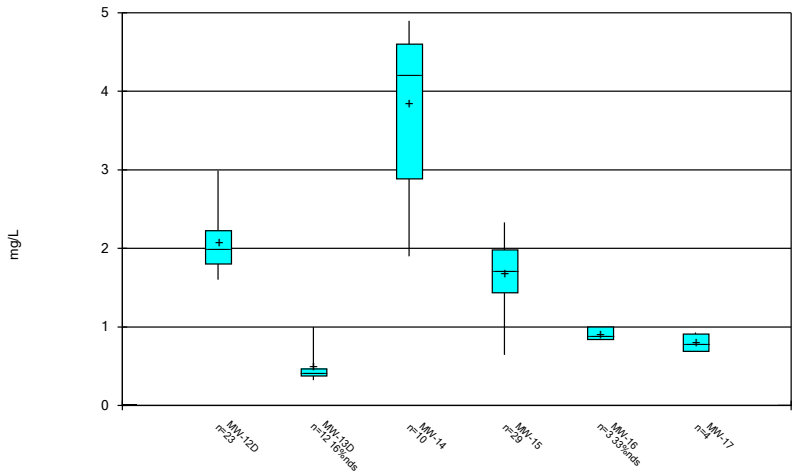
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

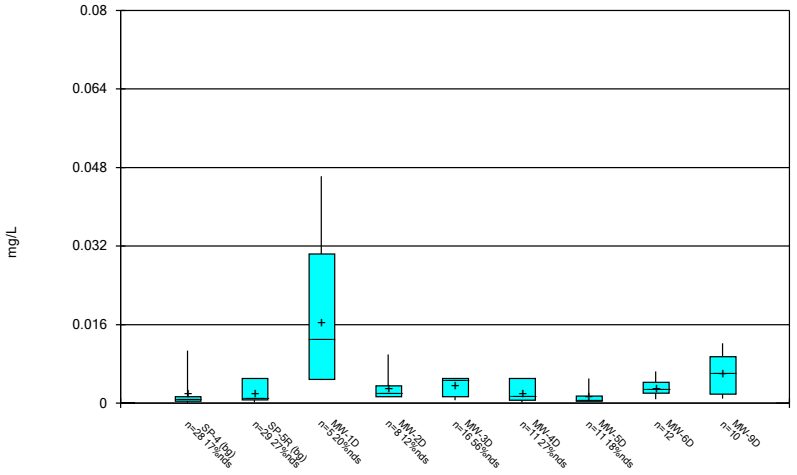
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

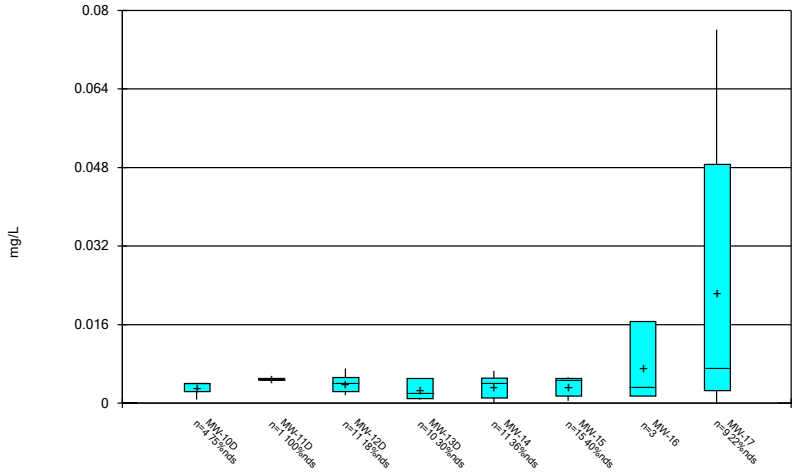
Box & Whiskers Plot



Constituent: Lead Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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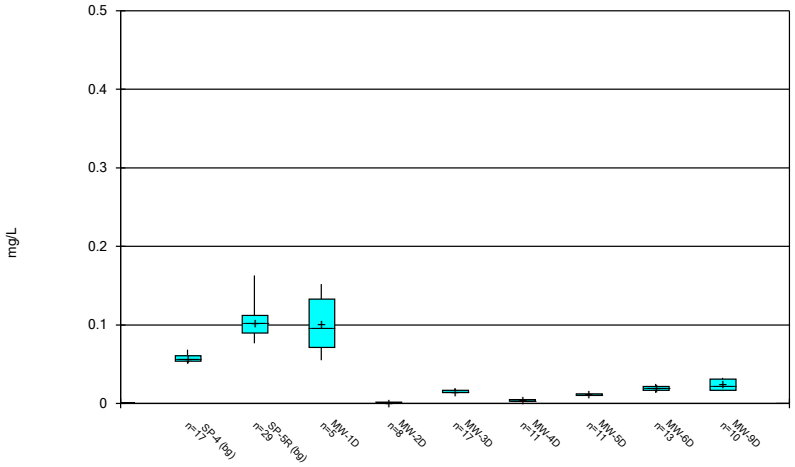
Box & Whiskers Plot



Constituent: Lead Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

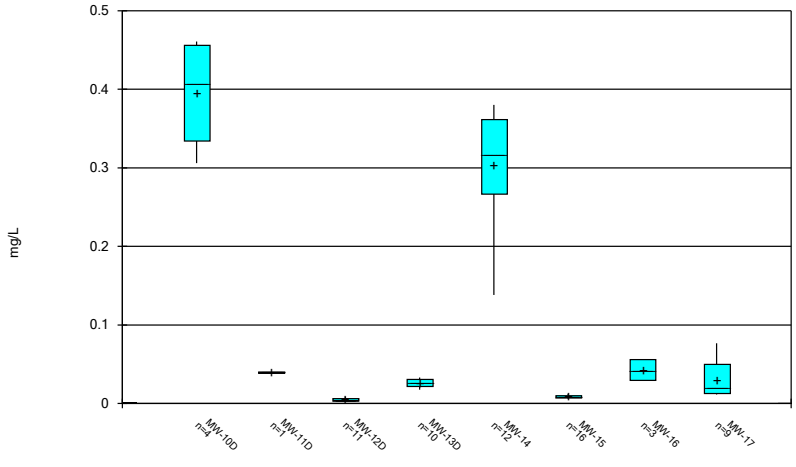
Box & Whiskers Plot



Constituent: Lithium Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

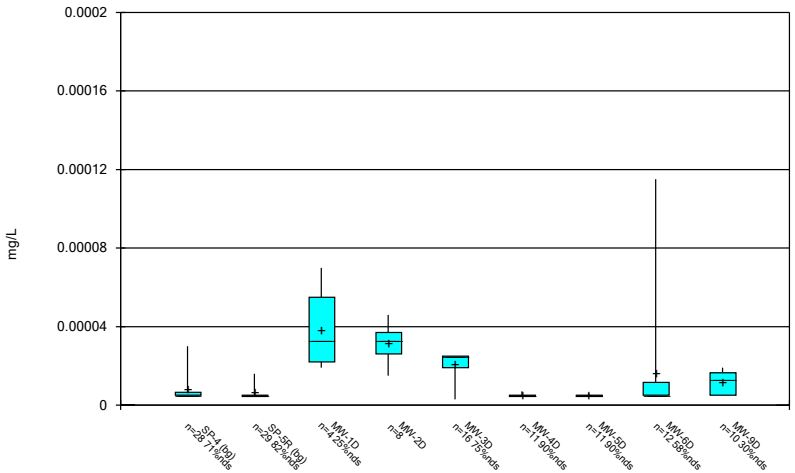
Box & Whiskers Plot



Constituent: Lithium Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

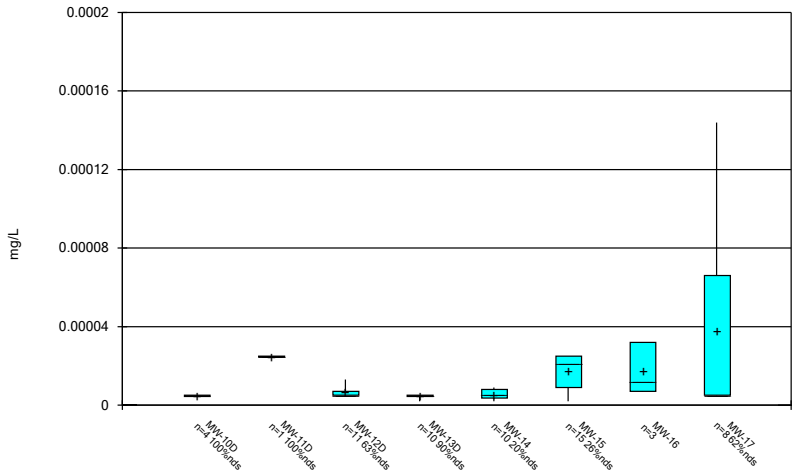
Box & Whiskers Plot



Constituent: Mercury Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

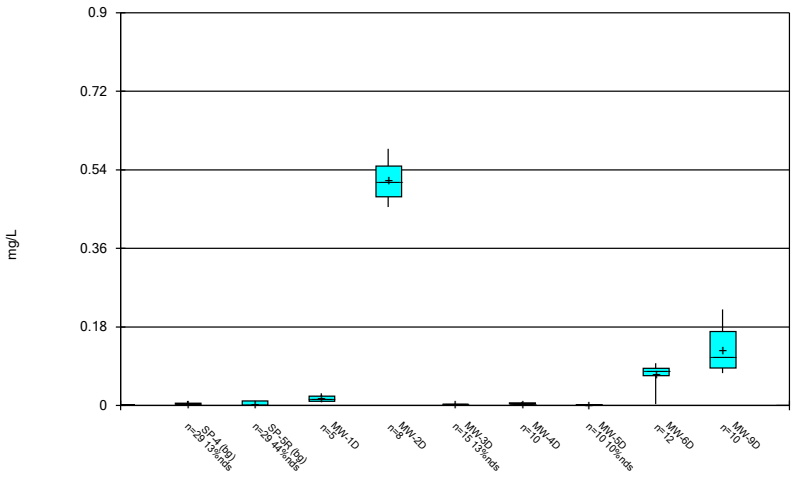
Box & Whiskers Plot



Constituent: Mercury Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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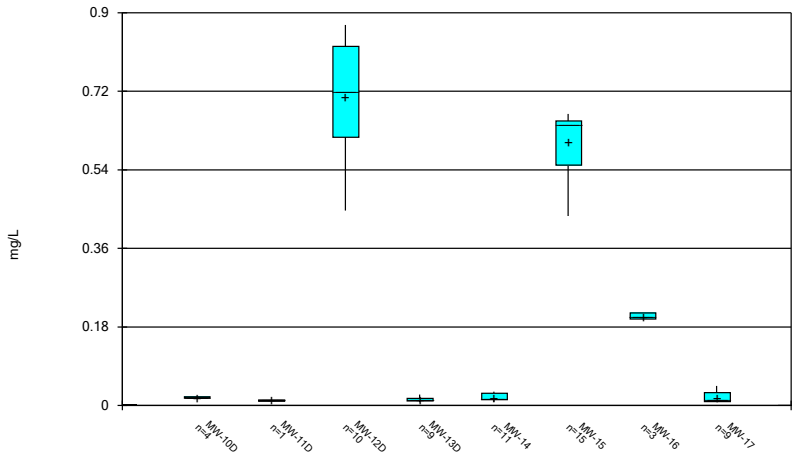
Box & Whiskers Plot



Constituent: Molybdenum Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

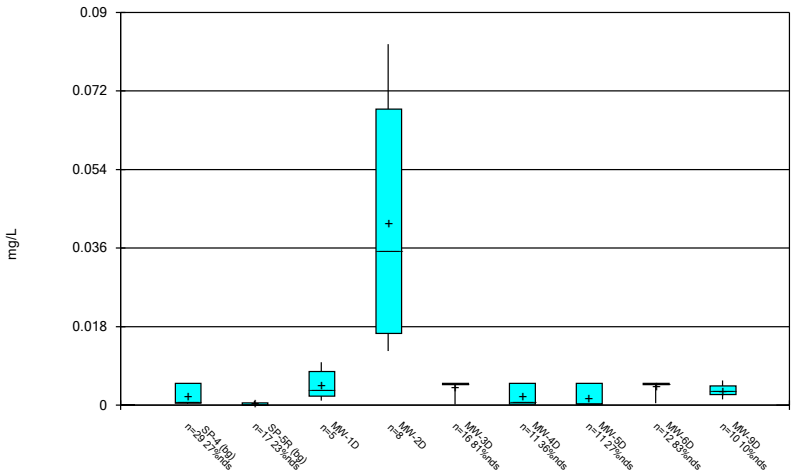
Box & Whiskers Plot



Constituent: Molybdenum Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

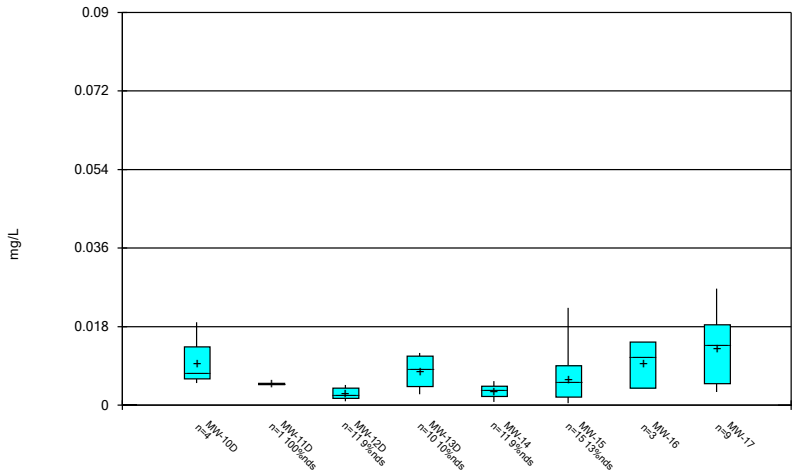
Box & Whiskers Plot



Constituent: Selenium Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

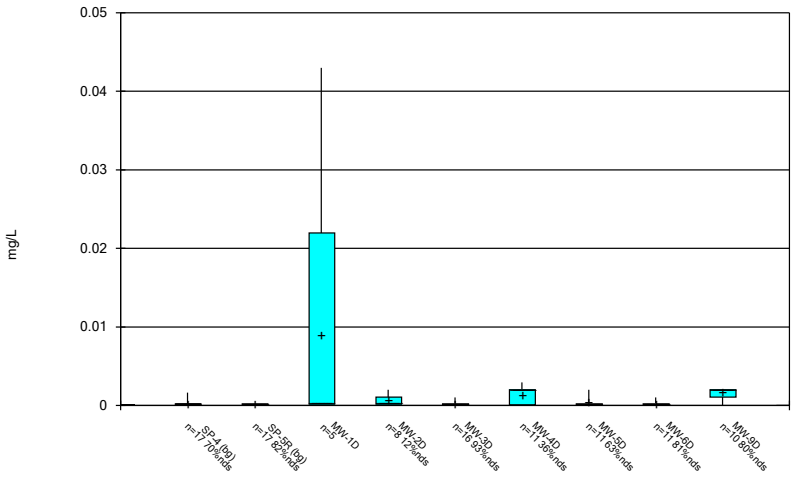
Box & Whiskers Plot



Constituent: Selenium Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

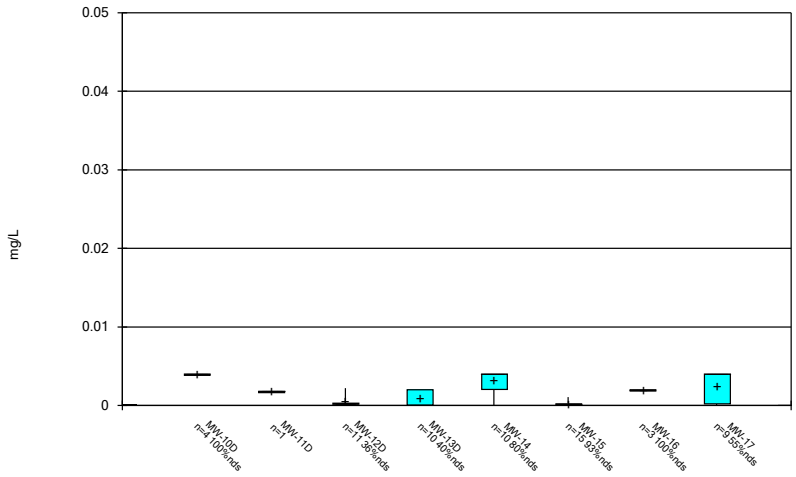
Box & Whiskers Plot



Constituent: Thallium Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Box & Whiskers Plot



Constituent: Thallium Analysis Run 6/18/2025 2:37 PM View: Appendix B
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

FIGURE C
Outlier Summary

Outlier Summary

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/17/2025, 4:58 PM

	SP-4 Arsenic (mg/L)	SP-4 Beryllium (mg/L)	SP-4 Cobalt (mg/L)	SP-4 Lead (mg/L)	SP-4 Mercury (mg/L)	MW-3D Molybdenum (mg/L)	MW-6D Thallium (mg/L)	MW-14 Thallium (mg/L)
6/27/2017						0.07928 (o)		
8/4/2017	0.04498 (O)	0.00497 (O)	0.04069 (O)	0.03663 (O)	5.8E-05 (O)			
5/30/2018							0.024 (o)	
6/27/2018								0.042 (o)

Tukey's Outlier Test - Significant Results

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/17/2025, 12:07 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Barium (mg/L)	**MW-4D**	**Yes**	**0.225,0.13**	**NP**	**NaN**	**11**	**0.1695**	**0.02282**	**ln(x)**	**ShapiroWilk**
Beryllium (mg/L)	**MW-2D**	**Yes**	**0.00028**	**NP**	**NaN**	**8**	**0.00008087**	**0.00008229**	**ln(x)**	**ShapiroWilk**
Cadmium (mg/L)	**MW-14**	**Yes**	**0.00649**	**NP**	**NaN**	**11**	**0.0008135**	**0.001886**	**ln(x)**	**ShapiroWilk**
Cobalt (mg/L)	**MW-2D**	**Yes**	**0.00212**	**NP**	**NaN**	**8**	**0.0005856**	**0.0006239**	**ln(x)**	**ShapiroWilk**
Combined Radium 226 + 228 (pCi/L)	**MW-3D**	**Yes**	**0.419,14.28**	**NP**	**NaN**	**14**	**2.949**	**3.332**	**ln(x)**	**ShapiroWilk**
Fluoride (mg/L)	**MW-13D**	**Yes**	**1,1**	**NP**	**NaN**	**12**	**0.5005**	**0.2379**	**ln(x)**	**ShapiroWilk**
Mercury (mg/L)	**MW-3D**	**Yes**	**0.000003**	**NP**	**NaN**	**16**	**0.00002081**	**0.000007731**	**sqrt(x)**	**ShapiroWilk**
Molybdenum (mg/L)	**MW-3D**	**Yes**	**0.07928**	**NP**	**NaN**	**16**	**0.007655**	**0.01911**	**ln(x)**	**ShapiroWilk**
Thallium (mg/L)	**MW-12D**	**Yes**	**0.0022,0.00199,0.00005**	**NP**	**NaN**	**11**	**0.0005352**	**0.0007753**	**ln(x)**	**ShapiroWilk**

Tukey's Outlier Test - All Results

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/17/2025, 12:07 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.0008863	0.0007133	ln(x)	ShapiroWilk
Antimony (mg/L)	MW-3D	No	n/a	NP	NaN	16	0.00395	0.001917	normal	ShapiroWilk
Antimony (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.0006101	0.001157	ln(x)	ShapiroWilk
Antimony (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.0006868	0.001018	ln(x)	ShapiroWilk
Antimony (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.002939	0.002189	x^(1/3)	ShapiroWilk
Antimony (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.004059	0.001984	ln(x)	ShapiroWilk
Antimony (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.001958	0.002414	ln(x)	ShapiroWilk
Antimony (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.002178	0.00243	ln(x)	ShapiroWilk
Antimony (mg/L)	MW-14	No	n/a	NP	NaN	11	0.001327	0.0005719	x^(1/3)	ShapiroWilk
Antimony (mg/L)	MW-15	No	n/a	NP	NaN	15	0.003139	0.002104	sqrt(x)	ShapiroWilk
Antimony (mg/L)	MW-17	No	n/a	NP	NaN	9	0.001807	0.001963	ln(x)	ShapiroWilk
Arsenic (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.02711	0.007047	normal	ShapiroWilk
Arsenic (mg/L)	MW-3D	No	n/a	NP	NaN	16	0.004349	0.002558	sqrt(x)	ShapiroWilk
Arsenic (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.002878	0.00161	ln(x)	ShapiroWilk
Arsenic (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.002098	0.001876	ln(x)	ShapiroWilk
Arsenic (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.002541	0.001527	ln(x)	ShapiroWilk
Arsenic (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.004371	0.00145	x^2	ShapiroWilk
Arsenic (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.003409	0.001766	normal	ShapiroWilk
Arsenic (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.002447	0.001846	ln(x)	ShapiroWilk
Arsenic (mg/L)	MW-14	No	n/a	NP	NaN	11	0.001799	0.00099	sqrt(x)	ShapiroWilk
Arsenic (mg/L)	MW-15	No	n/a	NP	NaN	15	0.004484	0.002963	ln(x)	ShapiroWilk
Arsenic (mg/L)	MW-17	No	n/a	NP	NaN	9	0.007109	0.007455	x^(1/3)	ShapiroWilk
Barium (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.02306	0.0118	x^(1/3)	ShapiroWilk
Barium (mg/L)	MW-3D	No	n/a	NP	NaN	16	0.2285	0.2372	ln(x)	ShapiroWilk
Barium (mg/L)	**MW-4D**	**Yes**	**0.225,0.13**	**NP**	**NaN**	**11**	**0.1695**	**0.02282**	**ln(x)**	**ShapiroWilk**
Barium (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.1188	0.01495	ln(x)	ShapiroWilk
Barium (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.1043	0.03319	x^(1/3)	ShapiroWilk
Barium (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.1989	0.1351	x^(1/3)	ShapiroWilk
Barium (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.0589	0.02794	ln(x)	ShapiroWilk
Barium (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.07677	0.03318	ln(x)	ShapiroWilk
Barium (mg/L)	MW-14	No	n/a	NP	NaN	11	0.3765	0.2795	ln(x)	ShapiroWilk
Barium (mg/L)	MW-15	No	n/a	NP	NaN	15	0.1059	0.06093	ln(x)	ShapiroWilk
Barium (mg/L)	MW-17	No	n/a	NP	NaN	9	0.3102	0.3695	ln(x)	ShapiroWilk
Beryllium (mg/L)	**MW-2D**	**Yes**	**0.00028**	**NP**	**NaN**	**8**	**0.00008087**	**0.00008229**	**ln(x)**	**ShapiroWilk**
Beryllium (mg/L)	MW-3D	No	n/a	NP	NaN	16	0.0003869	0.0004231	ln(x)	ShapiroWilk
Beryllium (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.0002584	0.000234	ln(x)	ShapiroWilk
Beryllium (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.0002648	0.0002258	ln(x)	ShapiroWilk
Beryllium (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.0002087	0.0001205	x^(1/3)	ShapiroWilk
Beryllium (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.00028	0.0001158	x^2	ShapiroWilk
Beryllium (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.0001445	0.00008683	ln(x)	ShapiroWilk
Beryllium (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.0002914	0.0003779	ln(x)	ShapiroWilk
Beryllium (mg/L)	MW-14	No	n/a	NP	NaN	11	0.000445	0.0004503	ln(x)	ShapiroWilk
Beryllium (mg/L)	MW-15	No	n/a	NP	NaN	15	0.0004625	0.0004964	ln(x)	ShapiroWilk
Beryllium (mg/L)	MW-17	No	n/a	NP	NaN	9	0.0008706	0.001117	ln(x)	ShapiroWilk
Cadmium (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.0004049	0.0003605	ln(x)	ShapiroWilk
Cadmium (mg/L)	MW-3D	No	n/a	NP	NaN	16	0.0002864	0.0001741	sqrt(x)	ShapiroWilk
Cadmium (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.0004495	0.0004403	ln(x)	ShapiroWilk
Cadmium (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.0003603	0.0004214	ln(x)	ShapiroWilk
Cadmium (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.0004631	0.0002373	sqrt(x)	ShapiroWilk
Cadmium (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.000695	0.0006519	ln(x)	ShapiroWilk
Cadmium (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.0004032	0.0003583	ln(x)	ShapiroWilk
Cadmium (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.0004032	0.0004153	ln(x)	ShapiroWilk
Cadmium (mg/L)	**MW-14**	**Yes**	**0.00649**	**NP**	**NaN**	**11**	**0.0008135**	**0.001886**	**ln(x)**	**ShapiroWilk**
Cadmium (mg/L)	MW-15	No	n/a	NP	NaN	15	0.0006412	0.0004215	x^(1/3)	ShapiroWilk
Cadmium (mg/L)	MW-17	No	n/a	NP	NaN	9	0.002196	0.002188	sqrt(x)	ShapiroWilk

Tukey's Outlier Test - All Results

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/17/2025, 12:07 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Chromium (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.003464	0.005173	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-3D	No	n/a	NP	NaN	16	0.002952	0.004379	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.01038	0.01962	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.0006601	0.0003178	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.005364	0.003382	sqrt(x)	ShapiroWilk
Chromium (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.00903	0.006196	normal	ShapiroWilk
Chromium (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.001994	0.002084	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.001946	0.001147	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-14	No	n/a	NP	NaN	11	0.01108	0.01206	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-15	No	n/a	NP	NaN	15	0.002433	0.002434	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-17	No	n/a	NP	NaN	9	0.02591	0.03536	x^(1/3)	ShapiroWilk
Cobalt (mg/L)	**MW-2D**	**Yes**	**0.00212**	**NP**	**NaN**	**8**	**0.0005856**	**0.0006239**	**ln(x)**	**ShapiroWilk**
Cobalt (mg/L)	MW-3D	No	n/a	NP	NaN	16	0.001724	0.001255	ln(x)	ShapiroWilk
Cobalt (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.001839	0.001518	ln(x)	ShapiroWilk
Cobalt (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.0007055	0.0007013	ln(x)	ShapiroWilk
Cobalt (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.002692	0.001243	x^2	ShapiroWilk
Cobalt (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.007749	0.003937	normal	ShapiroWilk
Cobalt (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.001406	0.0009975	x^(1/3)	ShapiroWilk
Cobalt (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.002477	0.00139	sqrt(x)	ShapiroWilk
Cobalt (mg/L)	MW-14	No	n/a	NP	NaN	11	0.002632	0.001336	normal	ShapiroWilk
Cobalt (mg/L)	MW-15	No	n/a	NP	NaN	15	0.001518	0.001089	x^(1/3)	ShapiroWilk
Cobalt (mg/L)	MW-17	No	n/a	NP	NaN	9	0.01591	0.01912	ln(x)	ShapiroWilk
Combined Radium 226 + 228 (pCi/L)	**MW-3D**	**Yes**	**0.419,14.28**	**NP**	**NaN**	**14**	**2.949**	**3.332**	**ln(x)**	**ShapiroWilk**
Combined Radium 226 + 228 (pCi/L)	MW-4D	No	n/a	NP	NaN	9	1.911	0.963	ln(x)	ShapiroWilk
Combined Radium 226 + 228 (pCi/L)	MW-5D	No	n/a	NP	NaN	9	3.274	1.138	ln(x)	ShapiroWilk
Combined Radium 226 + 228 (pCi/L)	MW-6D	No	n/a	NP	NaN	10	1.456	0.3718	ln(x)	ShapiroWilk
Combined Radium 226 + 228 (pCi/L)	MW-9D	No	n/a	NP	NaN	8	1.534	0.6801	sqrt(x)	ShapiroWilk
Combined Radium 226 + 228 (pCi/L)	MW-12D	No	n/a	NP	NaN	9	2.099	1.268	ln(x)	ShapiroWilk
Combined Radium 226 + 228 (pCi/L)	MW-15	No	n/a	NP	NaN	13	0.8672	0.4321	normal	ShapiroWilk
Fluoride (mg/L)	MW-2D	No	n/a	NP	NaN	11	1.595	0.2458	ln(x)	ShapiroWilk
Fluoride (mg/L)	MW-3D	No	n/a	NP	NaN	30	0.8513	0.1241	ln(x)	ShapiroWilk
Fluoride (mg/L)	MW-4D	No	n/a	NP	NaN	23	0.5037	0.3391	ln(x)	ShapiroWilk
Fluoride (mg/L)	MW-5D	No	n/a	NP	NaN	22	0.6142	0.1437	normal	ShapiroWilk
Fluoride (mg/L)	MW-6D	No	n/a	NP	NaN	27	0.8138	0.1624	normal	ShapiroWilk
Fluoride (mg/L)	MW-9D	No	n/a	NP	NaN	21	0.8909	0.3803	ln(x)	ShapiroWilk
Fluoride (mg/L)	MW-12D	No	n/a	NP	NaN	23	2.093	0.389	ln(x)	ShapiroWilk
Fluoride (mg/L)	**MW-13D**	**Yes**	**1,1**	**NP**	**NaN**	**12**	**0.5005**	**0.2379**	**ln(x)**	**ShapiroWilk**
Fluoride (mg/L)	MW-14	No	n/a	NP	NaN	10	3.856	0.9754	x^5	ShapiroWilk
Fluoride (mg/L)	MW-15	No	n/a	NP	NaN	29	1.685	0.3686	x^2	ShapiroWilk
Lead (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.0031	0.002949	ln(x)	ShapiroWilk
Lead (mg/L)	MW-3D	No	n/a	NP	NaN	16	0.003501	0.001887	x^(1/3)	ShapiroWilk
Lead (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.002176	0.001955	ln(x)	ShapiroWilk
Lead (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.001499	0.001766	ln(x)	ShapiroWilk
Lead (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.003113	0.001663	x^(1/3)	ShapiroWilk
Lead (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.006057	0.003861	normal	ShapiroWilk
Lead (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.003998	0.001715	normal	ShapiroWilk
Lead (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.00265	0.001816	ln(x)	ShapiroWilk
Lead (mg/L)	MW-14	No	n/a	NP	NaN	11	0.003372	0.00234	normal	ShapiroWilk
Lead (mg/L)	MW-15	No	n/a	NP	NaN	15	0.003449	0.001857	x^(1/3)	ShapiroWilk
Lead (mg/L)	MW-17	No	n/a	NP	NaN	9	0.02238	0.02816	x^(1/3)	ShapiroWilk
Lithium (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.001176	0.0003733	x^3	ShapiroWilk
Lithium (mg/L)	MW-3D	No	n/a	NP	NaN	17	0.01539	0.001781	ln(x)	ShapiroWilk
Lithium (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.003767	0.0008796	ln(x)	ShapiroWilk
Lithium (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.01106	0.0009741	ln(x)	ShapiroWilk
Lithium (mg/L)	MW-6D	No	n/a	NP	NaN	13	0.01921	0.002991	normal	ShapiroWilk

Tukey's Outlier Test - All Results

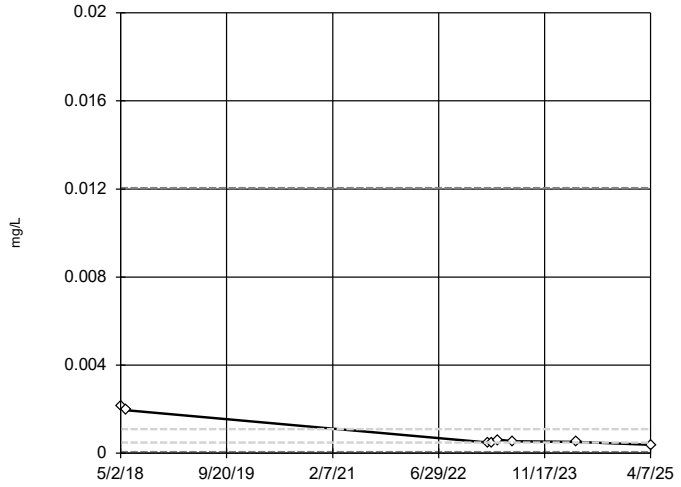
Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/17/2025, 12:07 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Lithium (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.02357	0.006206	x^(1/3)	ShapiroWilk
Lithium (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.004843	0.001541	ln(x)	ShapiroWilk
Lithium (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.02568	0.004955	normal	ShapiroWilk
Lithium (mg/L)	MW-14	No	n/a	NP	NaN	12	0.3039	0.07088	x^3	ShapiroWilk
Lithium (mg/L)	MW-15	No	n/a	NP	NaN	16	0.008475	0.0019	ln(x)	ShapiroWilk
Lithium (mg/L)	MW-17	No	n/a	NP	NaN	9	0.02997	0.02485	ln(x)	ShapiroWilk
Mercury (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.00003163	0.000009516	normal	ShapiroWilk
Mercury (mg/L)	**MW-3D**	**Yes**	**0.000003**	**NP**	**NaN**	**16**	**0.00002081**	**0.000007731**	**sqrt(x)**	**ShapiroWilk**
Mercury (mg/L)	MW-4D	n/a	n/a	NP	NaN	11	0.000005182	6.0e-7	unknown	ShapiroWilk
Mercury (mg/L)	MW-5D	n/a	n/a	NP	NaN	11	0.000005091	3.0e-7	unknown	ShapiroWilk
Mercury (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.00001633	0.00003129	ln(x)	ShapiroWilk
Mercury (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.0000118	0.000005493	x^2	ShapiroWilk
Mercury (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.000006727	0.00000297	ln(x)	ShapiroWilk
Mercury (mg/L)	MW-13D	n/a	n/a	NP	NaN	10	0.0000047	9.5e-7	unknown	ShapiroWilk
Mercury (mg/L)	MW-14	No	n/a	NP	NaN	10	0.0000056	0.000002271	normal	ShapiroWilk
Mercury (mg/L)	MW-15	No	n/a	NP	NaN	15	0.00001733	0.000008024	normal	ShapiroWilk
Mercury (mg/L)	MW-17	No	n/a	NP	NaN	8	0.00003762	0.00005368	x^(1/3)	ShapiroWilk
Molybdenum (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.5155	0.0456	x^(1/3)	ShapiroWilk
Molybdenum (mg/L)	**MW-3D**	**Yes**	**0.07928**	**NP**	**NaN**	**16**	**0.007655**	**0.01911**	**ln(x)**	**ShapiroWilk**
Molybdenum (mg/L)	MW-4D	No	n/a	NP	NaN	10	0.004925	0.001385	ln(x)	ShapiroWilk
Molybdenum (mg/L)	MW-5D	No	n/a	NP	NaN	10	0.001334	0.0006143	normal	ShapiroWilk
Molybdenum (mg/L)	MW-6D	No	n/a	NP	NaN	12	0.07309	0.02474	x^4	ShapiroWilk
Molybdenum (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.1275	0.04786	ln(x)	ShapiroWilk
Molybdenum (mg/L)	MW-12D	No	n/a	NP	NaN	10	0.7072	0.1299	x^3	ShapiroWilk
Molybdenum (mg/L)	MW-13D	No	n/a	NP	NaN	9	0.01383	0.005029	ln(x)	ShapiroWilk
Molybdenum (mg/L)	MW-14	No	n/a	NP	NaN	11	0.0183	0.008377	ln(x)	ShapiroWilk
Molybdenum (mg/L)	MW-15	No	n/a	NP	NaN	15	0.6036	0.07517	x^6	ShapiroWilk
Molybdenum (mg/L)	MW-17	No	n/a	NP	NaN	9	0.01954	0.01309	ln(x)	ShapiroWilk
Selenium (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.04177	0.02858	ln(x)	ShapiroWilk
Selenium (mg/L)	MW-3D	n/a	n/a	NP	NaN	16	0.004146	0.001844	unknown	ShapiroWilk
Selenium (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.002084	0.002326	ln(x)	ShapiroWilk
Selenium (mg/L)	MW-5D	No	n/a	NP	NaN	11	0.001681	0.002155	ln(x)	ShapiroWilk
Selenium (mg/L)	MW-6D	n/a	n/a	NP	NaN	12	0.004256	0.001738	unknown	ShapiroWilk
Selenium (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.003356	0.001275	sqrt(x)	ShapiroWilk
Selenium (mg/L)	MW-12D	No	n/a	NP	NaN	11	0.002602	0.001311	x^(1/3)	ShapiroWilk
Selenium (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.007803	0.003419	normal	ShapiroWilk
Selenium (mg/L)	MW-14	No	n/a	NP	NaN	11	0.003129	0.001563	normal	ShapiroWilk
Selenium (mg/L)	MW-15	No	n/a	NP	NaN	15	0.00596	0.00568	x^(1/3)	ShapiroWilk
Selenium (mg/L)	MW-17	No	n/a	NP	NaN	9	0.01307	0.007782	normal	ShapiroWilk
Thallium (mg/L)	MW-2D	No	n/a	NP	NaN	8	0.0006688	0.0006594	ln(x)	ShapiroWilk
Thallium (mg/L)	MW-3D	n/a	n/a	NP	NaN	16	0.0002512	0.000205	unknown	ShapiroWilk
Thallium (mg/L)	MW-4D	No	n/a	NP	NaN	11	0.001396	0.001153	normal	ShapiroWilk
Thallium (mg/L)	MW-5D	n/a	n/a	NP	NaN	11	0.0004282	0.0006187	unknown	ShapiroWilk
Thallium (mg/L)	MW-6D	n/a	n/a	NP	NaN	12	0.002237	0.006858	unknown	ShapiroWilk
Thallium (mg/L)	MW-9D	No	n/a	NP	NaN	10	0.001615	0.0008117	ln(x)	ShapiroWilk
Thallium (mg/L)	**MW-12D**	**Yes**	**0.0022,0.00199,0.00005**	**NP**	**NaN**	**11**	**0.0005352**	**0.0007753**	**ln(x)**	**ShapiroWilk**
Thallium (mg/L)	MW-13D	No	n/a	NP	NaN	10	0.000825	0.001011	ln(x)	ShapiroWilk
Thallium (mg/L)	MW-14	n/a	n/a	NP	NaN	11	0.006735	0.0118	unknown	ShapiroWilk
Thallium (mg/L)	MW-15	n/a	n/a	NP	NaN	15	0.0002567	0.0002195	unknown	ShapiroWilk
Thallium (mg/L)	MW-17	No	n/a	NP	NaN	9	0.002455	0.001887	ln(x)	ShapiroWilk

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01203, low cutoff = 0.0000444, based on IQR multiplier of 3.

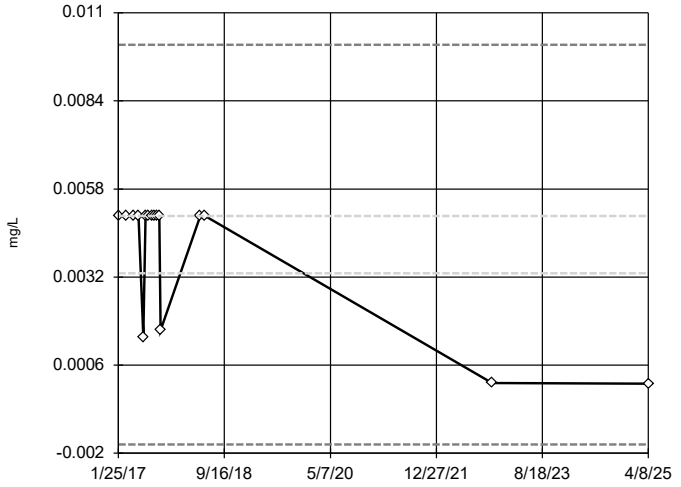
Constituent: Antimony Analysis Run 6/17/2025 12:03 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.01005, low cutoff = -0.00174, based on IQR multiplier of 3.

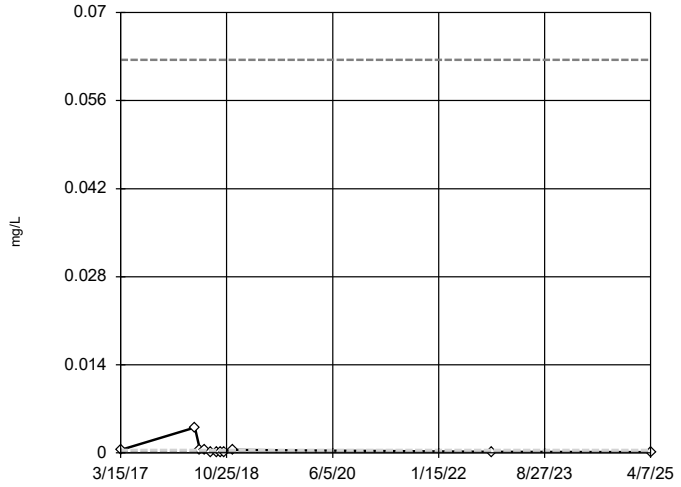
Constituent: Antimony Analysis Run 6/17/2025 12:03 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.0625, low cutoff = 8.0e-7, based on IQR multiplier of 3.

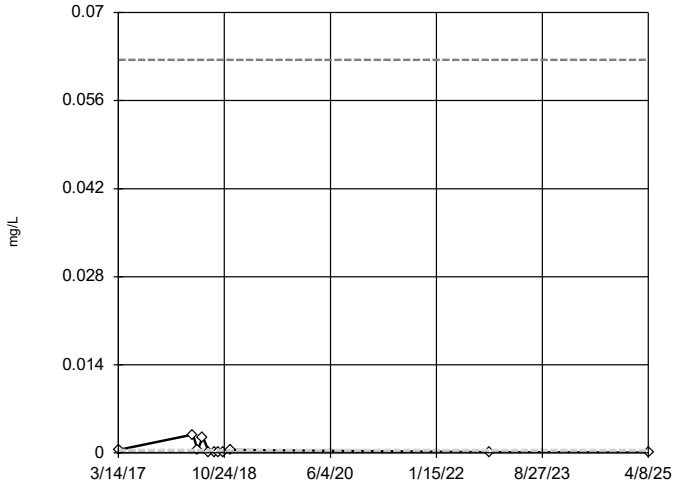
Constituent: Antimony Analysis Run 6/17/2025 12:03 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.0625, low cutoff = 8.0e-7, based on IQR multiplier of 3.

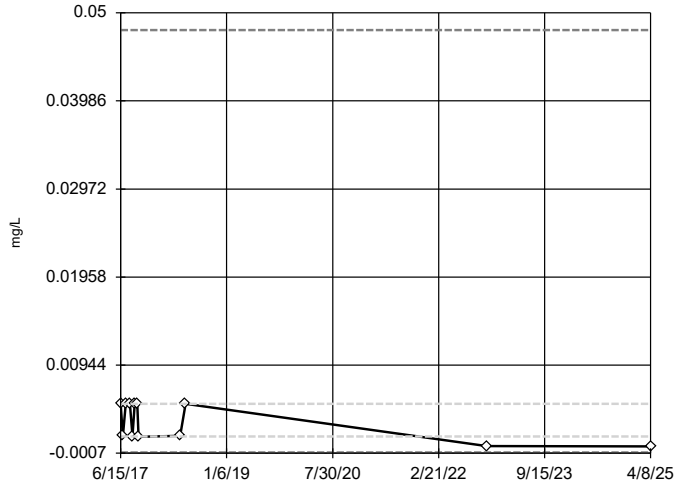
Constituent: Antimony Analysis Run 6/17/2025 12:03 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.04802, low cutoff = -0.0006279, based on IQR multiplier of 3.

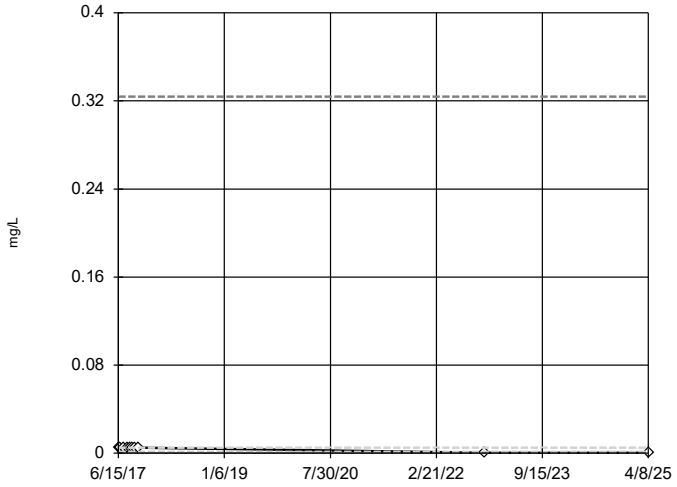
Constituent: Antimony Analysis Run 6/17/2025 12:03 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.3239, low cutoff = 0.00001922, based on IQR multiplier of 3.

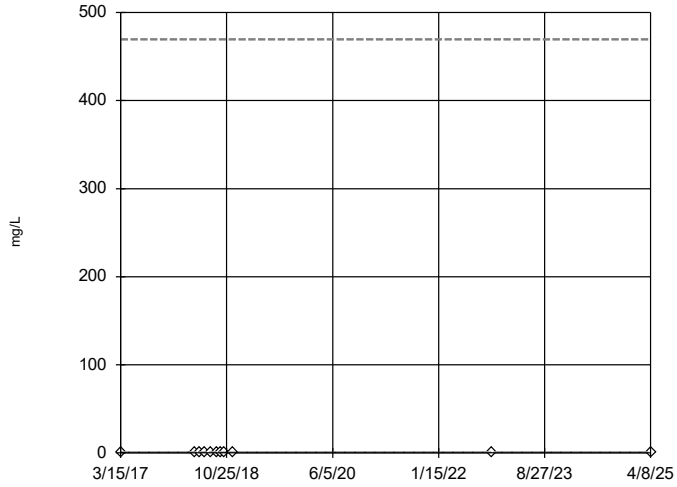
Constituent: Antimony Analysis Run 6/17/2025 12:03 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 469.6, low cutoff = 1.2e-9, based on IQR multiplier of 3.

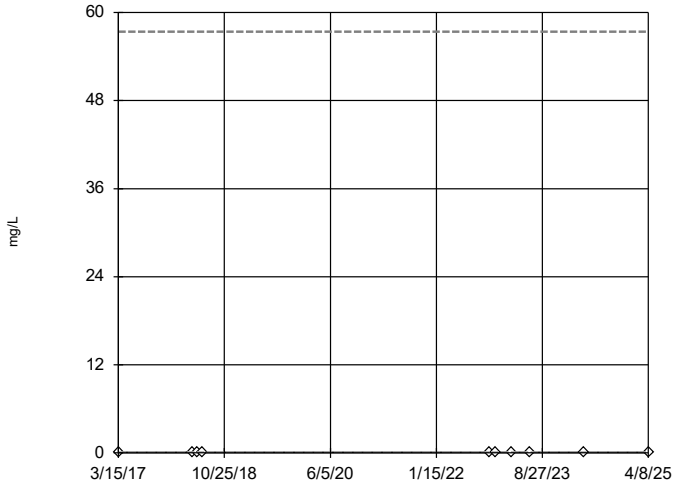
Constituent: Antimony Analysis Run 6/17/2025 12:03 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 57.38, low cutoff = 1.9e-8, based on IQR multiplier of 3.

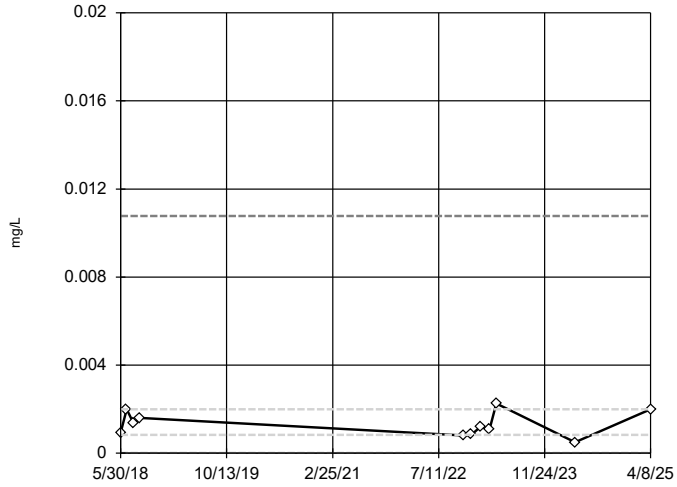
Constituent: Antimony Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01078, low cutoff = -1.8e-10, based on IQR multiplier of 3.

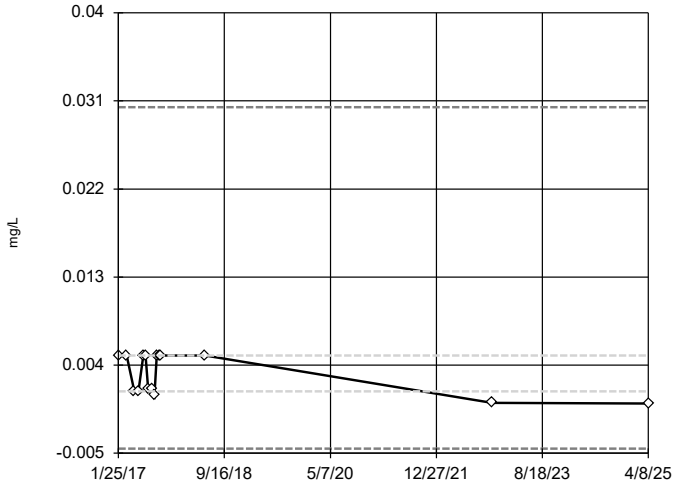
Constituent: Antimony Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.03037, low cutoff = -0.004537, based on IQR multiplier of 3.

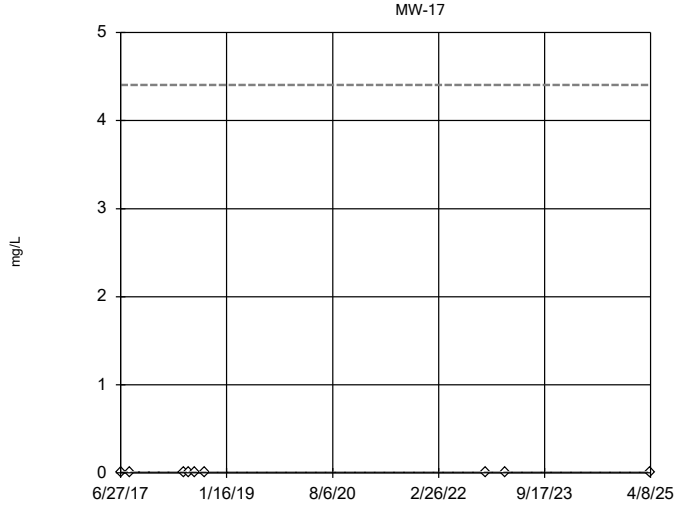
Constituent: Antimony Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 4.405, low cutoff = 2.7e-7, based on IQR multiplier of 3.

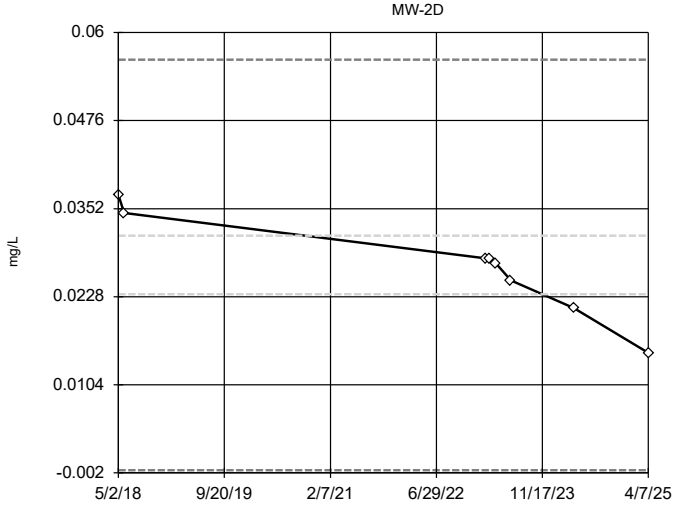
Constituent: Antimony Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.05617, low cutoff = -0.001615, based on IQR multiplier of 3.

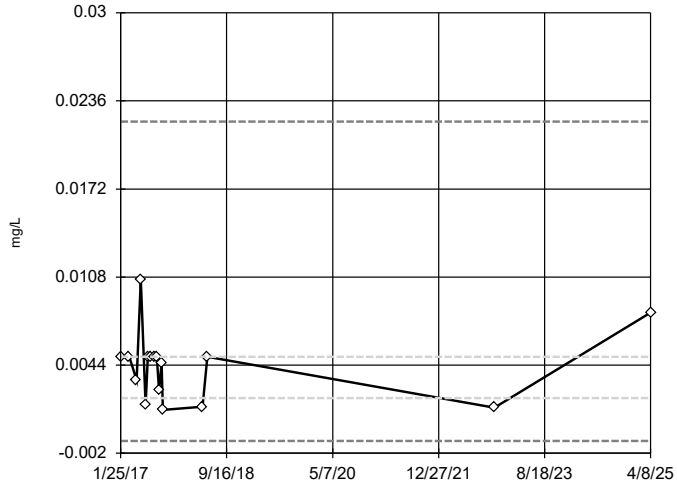
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.0221, low cutoff = -0.001103, based on IQR multiplier of 3.

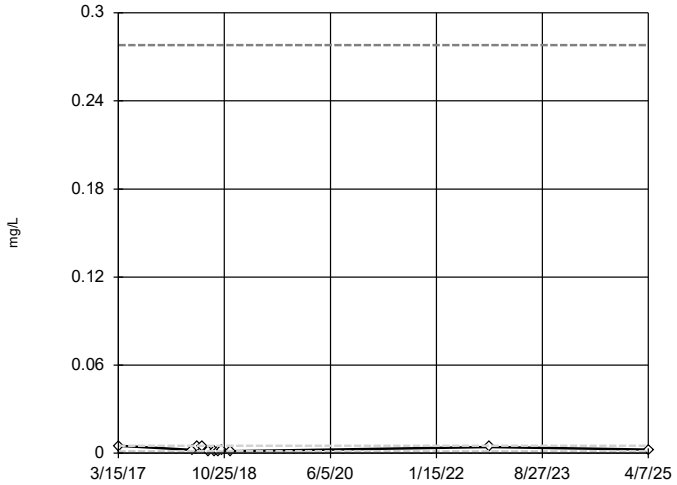
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.278, low cutoff = 0.00002356, based on IQR multiplier of 3.

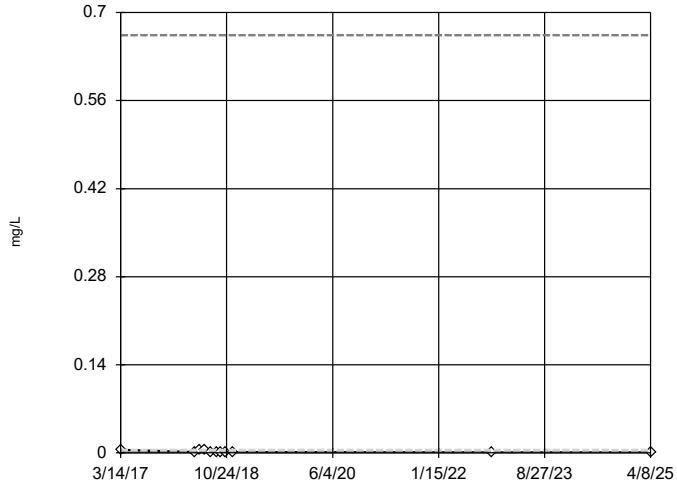
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.6641, low cutoff = 0.000007379, based on IQR multiplier of 3.

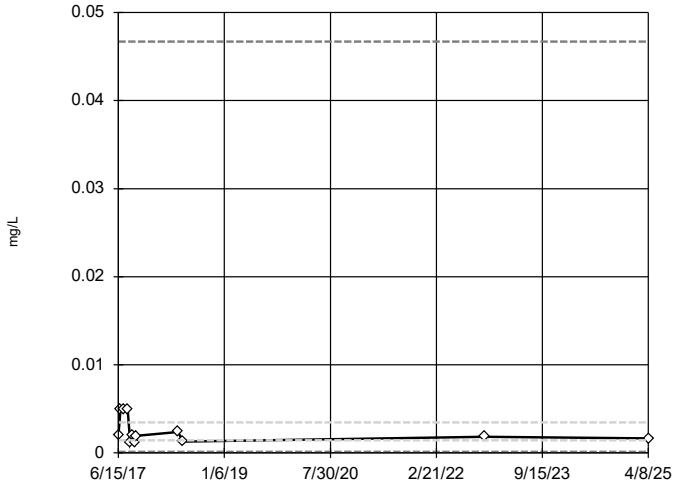
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.04668, low cutoff = 0.000107, based on IQR multiplier of 3.

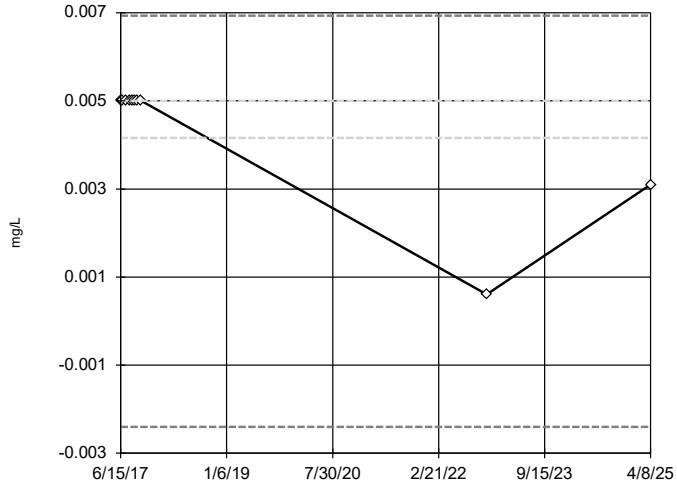
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.006934, low cutoff = -0.002404, based on IQR multiplier of 3.

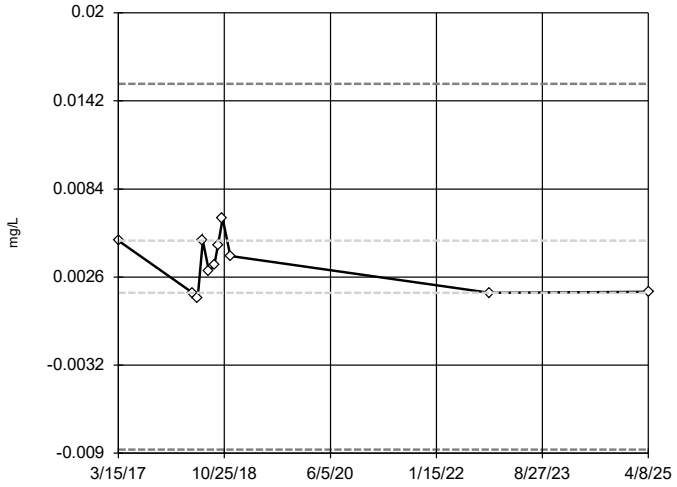
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.01532, low cutoff = -0.00876, based on IQR multiplier of 3.

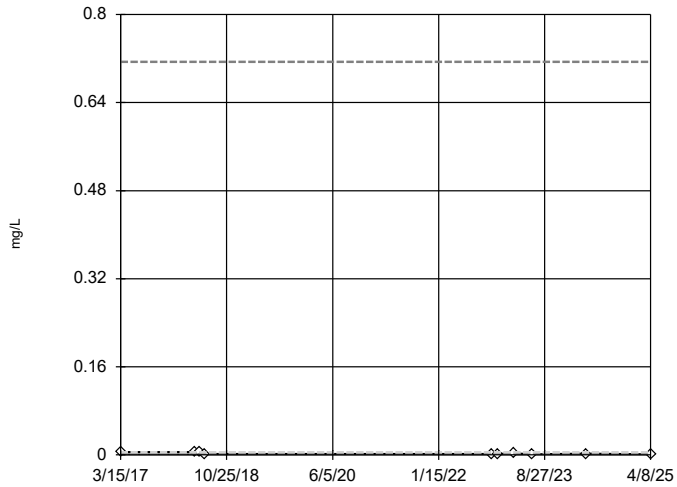
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.7137, low cutoff = 0.000006702, based on IQR multiplier of 3.

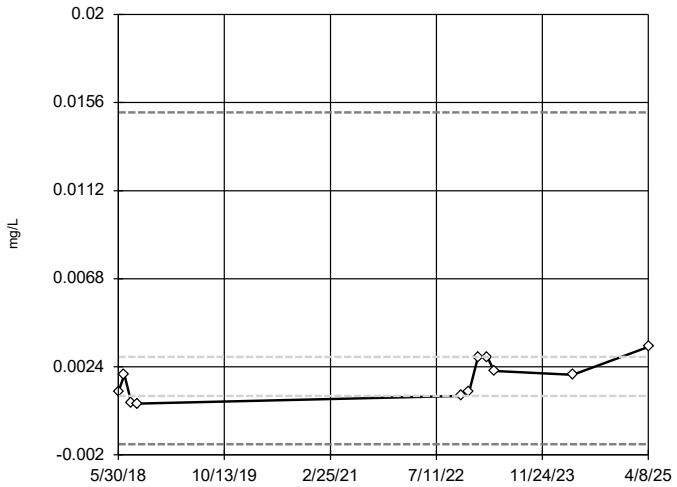
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01511, low cutoff = -0.001464, based on IQR multiplier of 3.

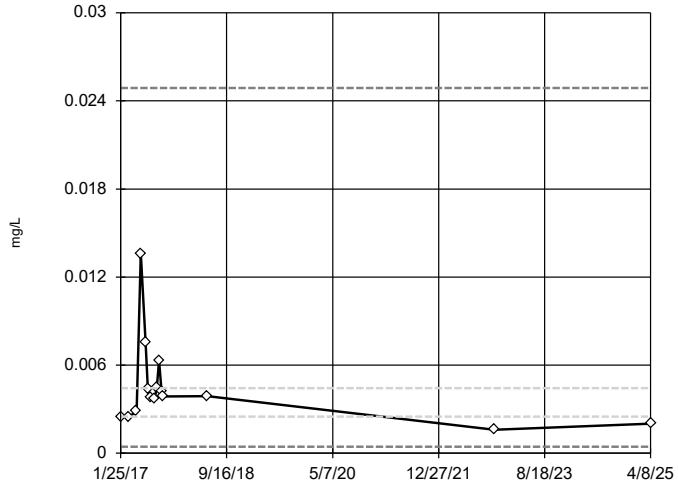
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02487, low cutoff = 0.0004463, based on IQR multiplier of 3.

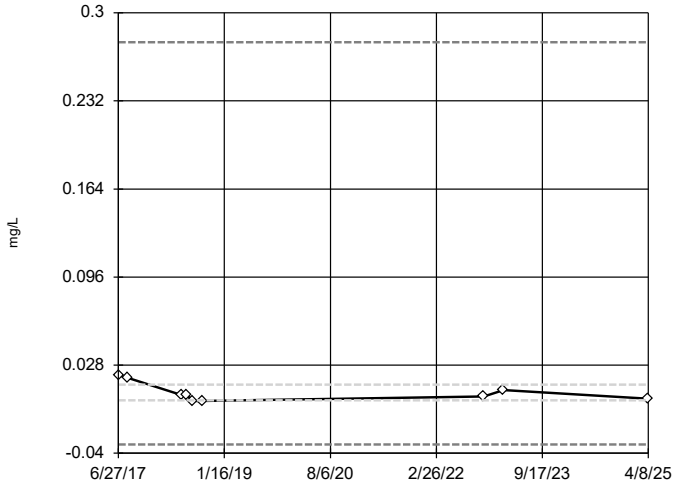
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2774, low cutoff = -0.03327, based on IQR multiplier of 3.

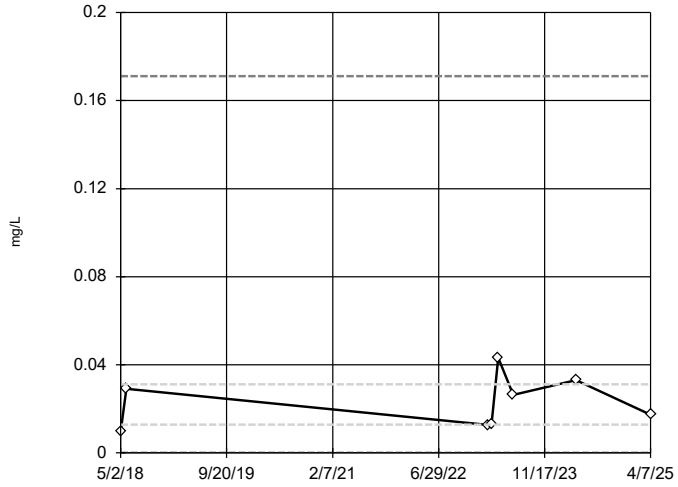
Constituent: Arsenic Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1711, low cutoff = -2.7e-7, based on IQR multiplier of 3.

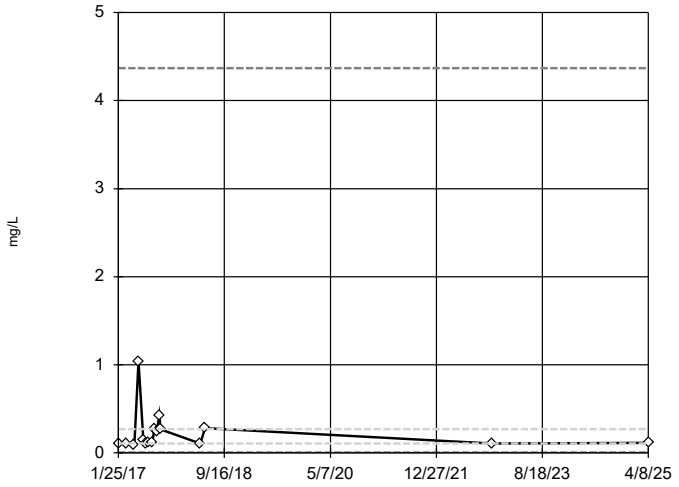
Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 4.369, low cutoff = 0.006624, based on IQR multiplier of 3.

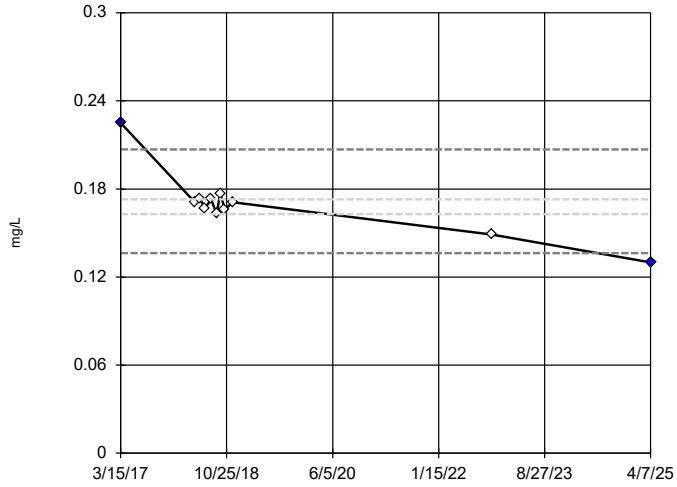
Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 11

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

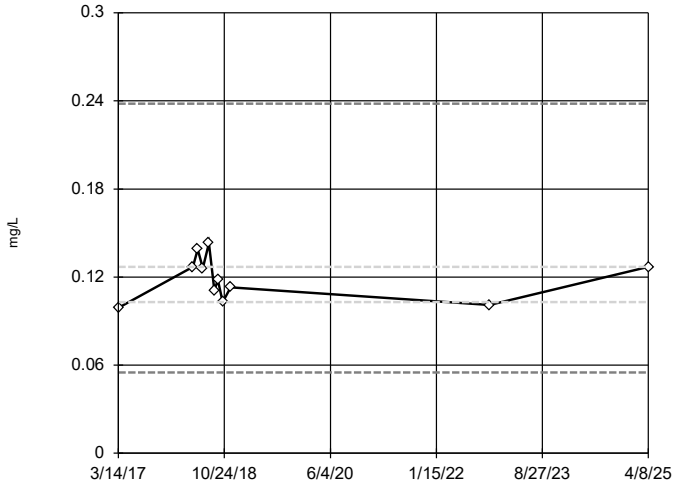
High cutoff = 0.2068, low cutoff = 0.1363, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers
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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

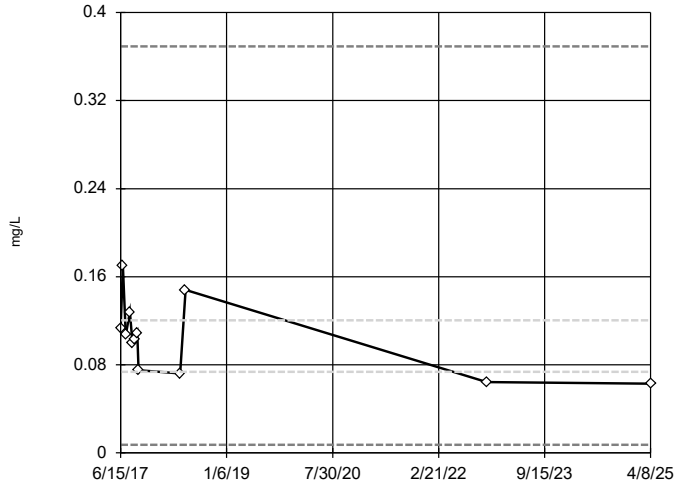
High cutoff = 0.2381, low cutoff = 0.05495, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers
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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found.
Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

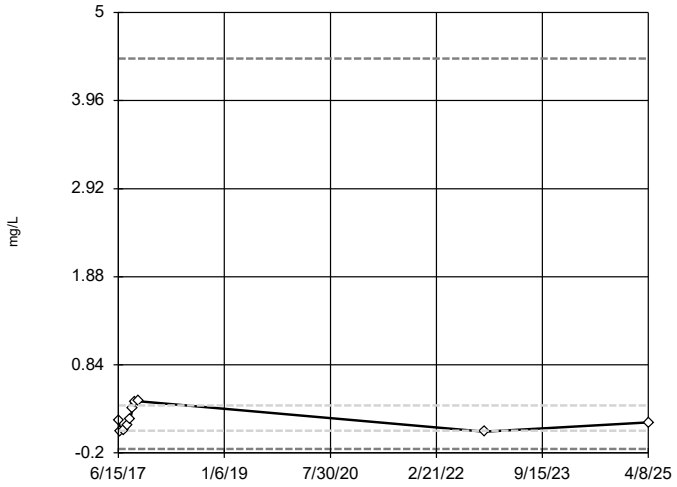
High cutoff = 0.3693, low cutoff = 0.00746, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers
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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found.
Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

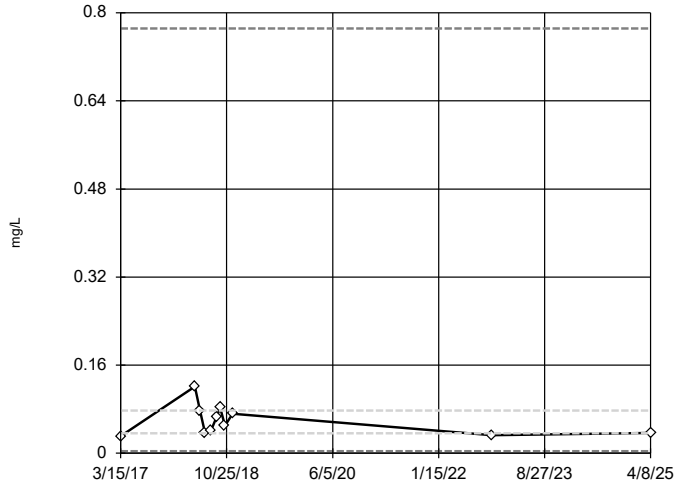
High cutoff = 4.456, low cutoff = -0.153, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

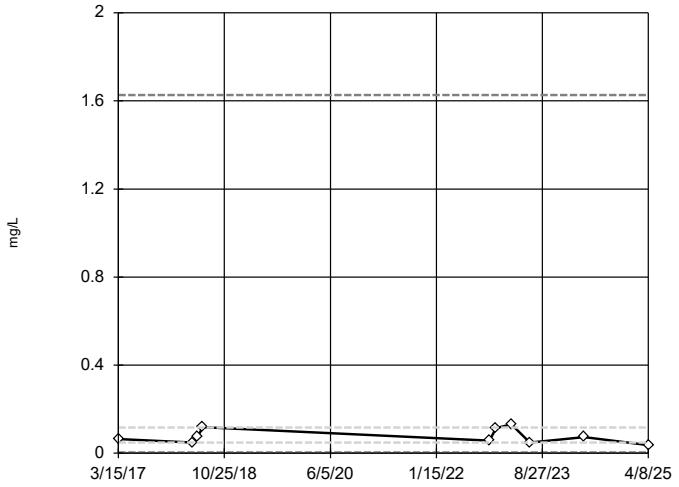
High cutoff = 0.7716, low cutoff = 0.003646, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

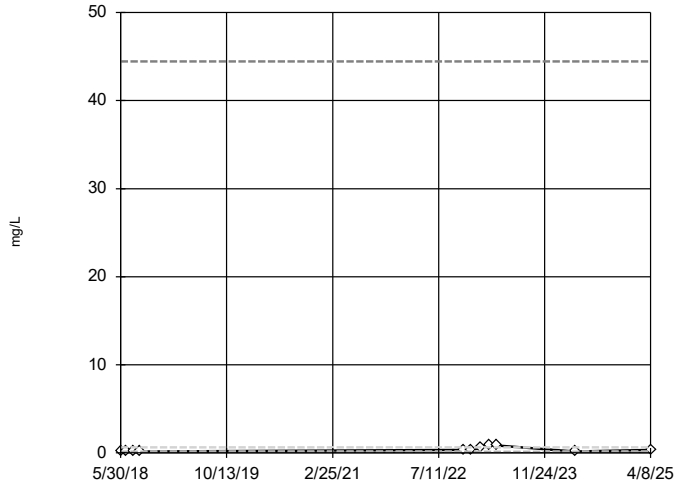
High cutoff = 1.626, low cutoff = 0.003464, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

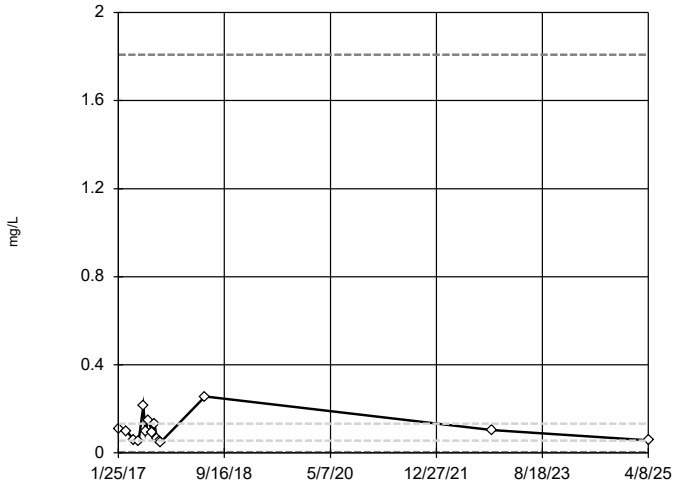
High cutoff = 44.45, low cutoff = 0.002275, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

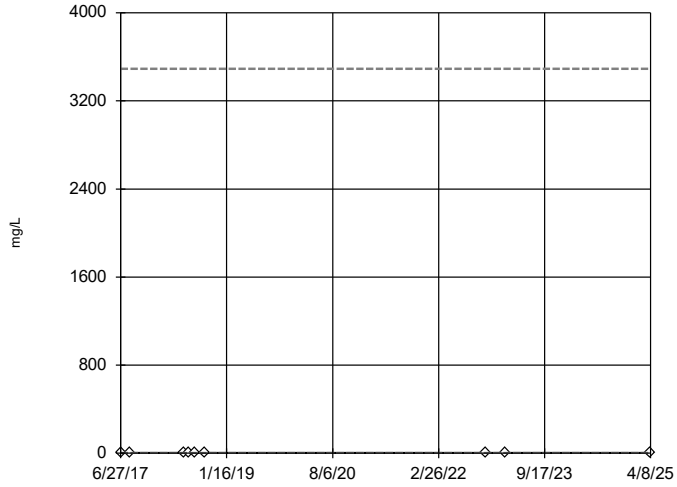
High cutoff = 1.808, low cutoff = 0.0041, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 3490, low cutoff = 0.000007813, based on IQR multiplier of 3.

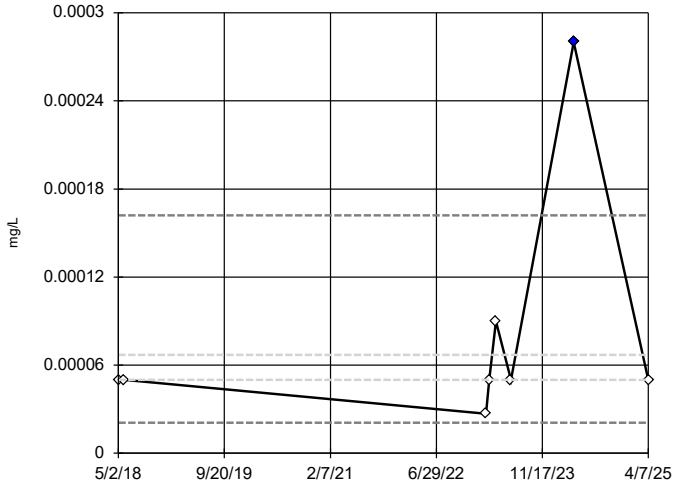
Constituent: Barium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 8

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.000162, low cutoff = 0.0000207, based on IQR multiplier of 3.

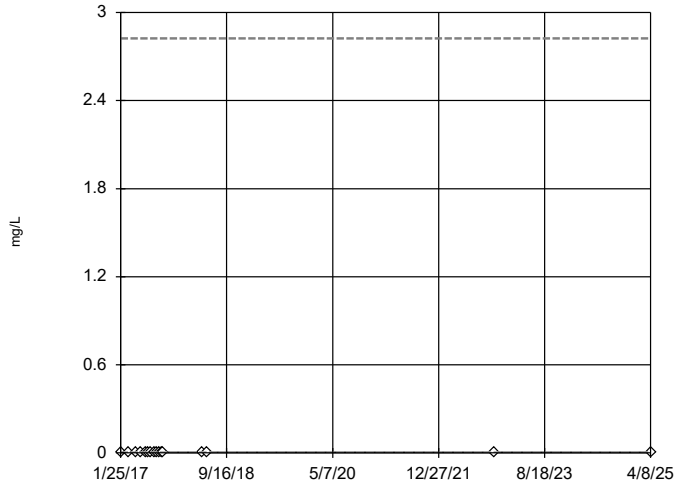
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.823, low cutoff = 2.3e-8, based on IQR multiplier of 3.

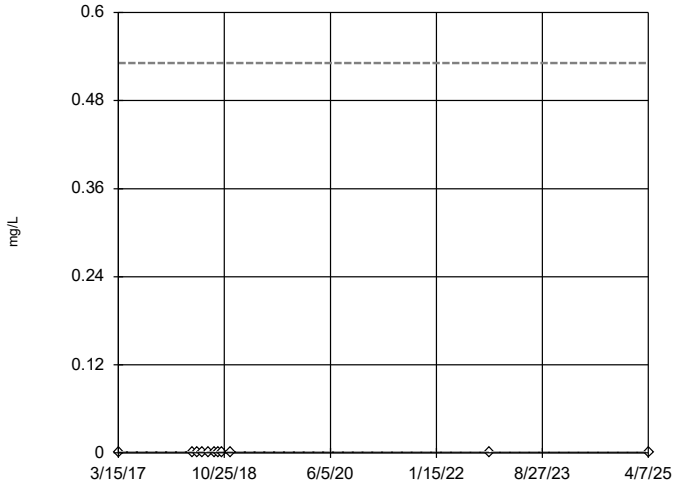
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.5312, low cutoff = 4.6e-8, based on IQR multiplier of 3.

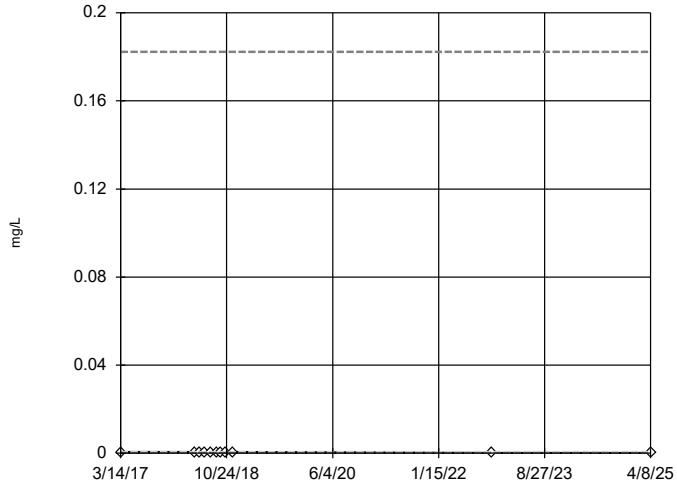
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1822, low cutoff = 1.9e-7, based on IQR multiplier of 3.

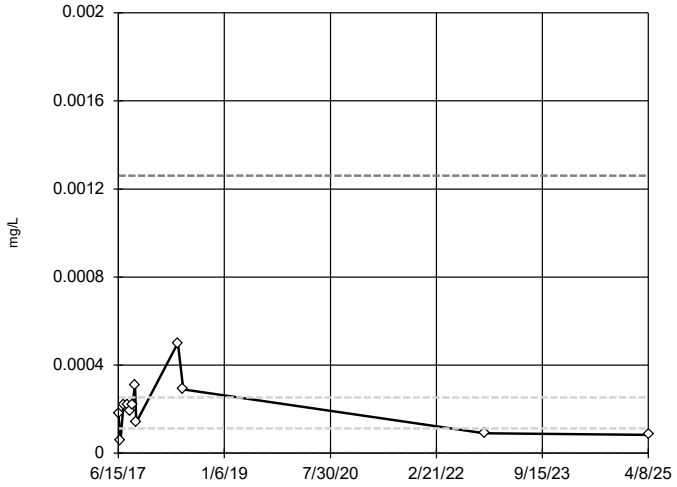
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.00126, low cutoff = 4.8e-8, based on IQR multiplier of 3.

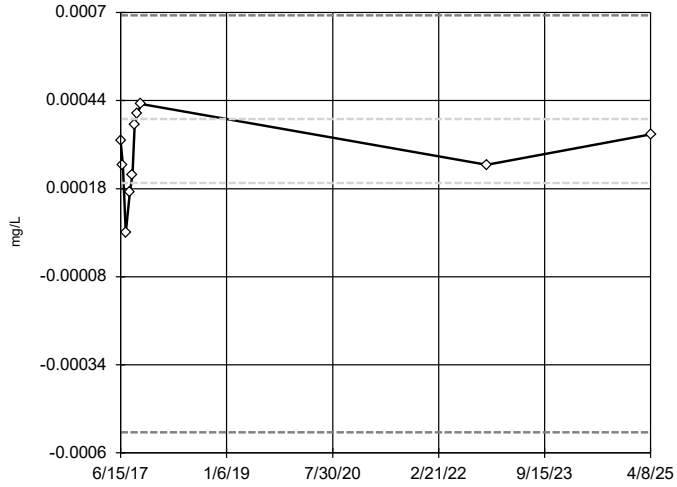
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.0006913, low cutoff = -0.0005392, based on IQR multiplier of 3.

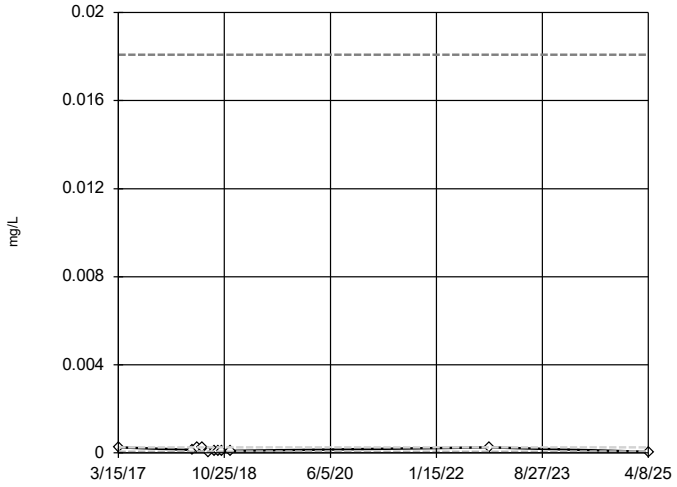
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01808, low cutoff = 8.3e-7, based on IQR multiplier of 3.

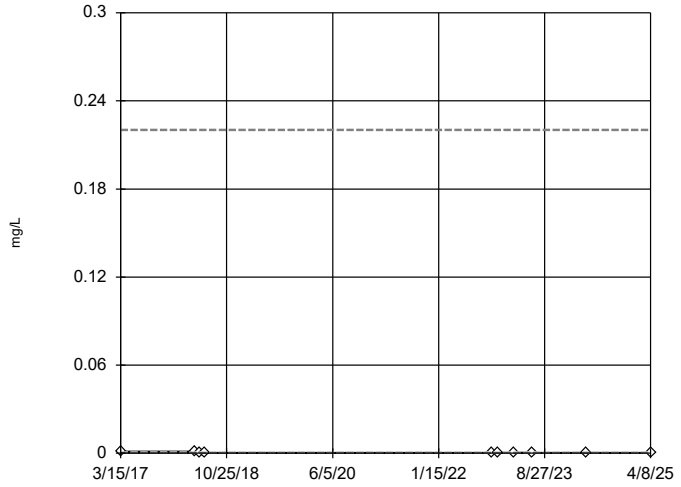
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2203, low cutoff = 1.4e-7, based on IQR multiplier of 3.

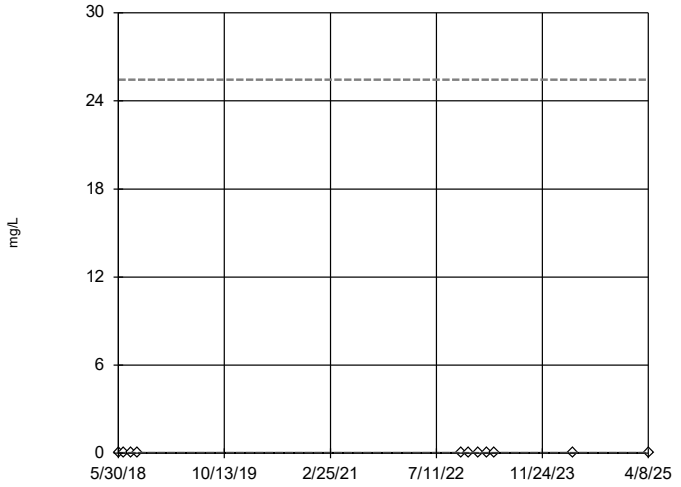
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 25.44, low cutoff = 1.3e-9, based on IQR multiplier of 3.

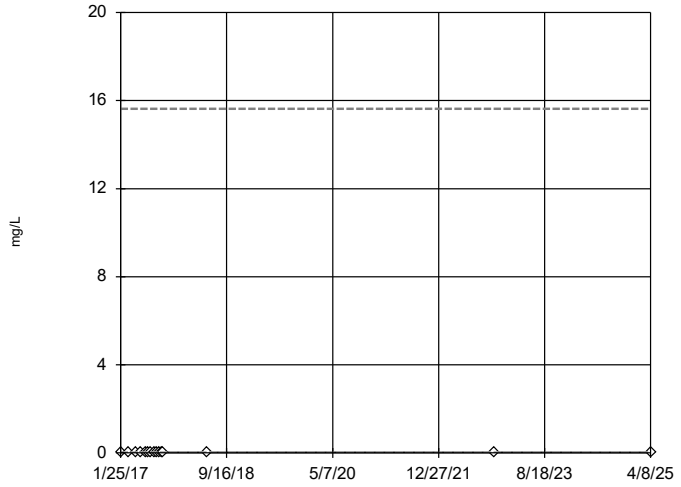
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 15.63, low cutoff = 2.6e-9, based on IQR multiplier of 3.

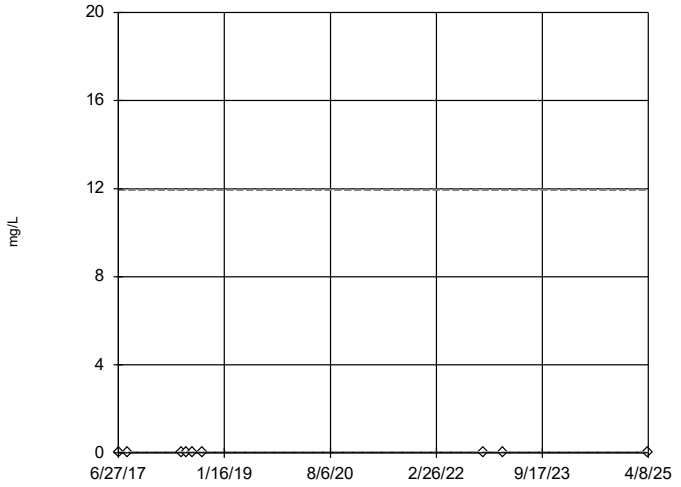
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 11.96, low cutoff = 1.6e-8, based on IQR multiplier of 3.

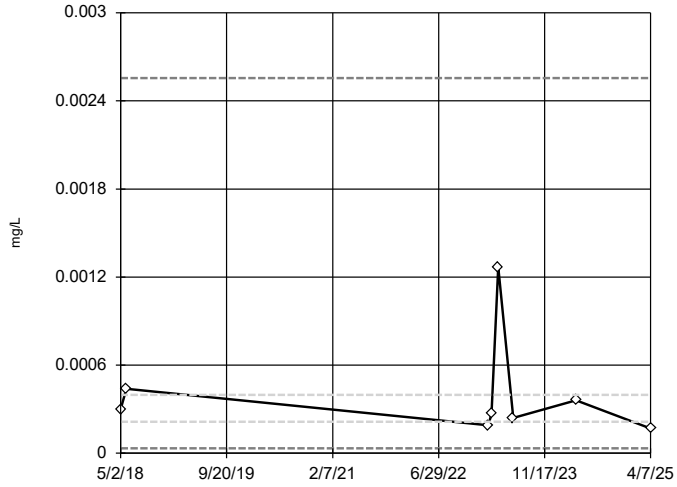
Constituent: Beryllium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.002556, low cutoff = 0.00003333, based on IQR multiplier of 3.

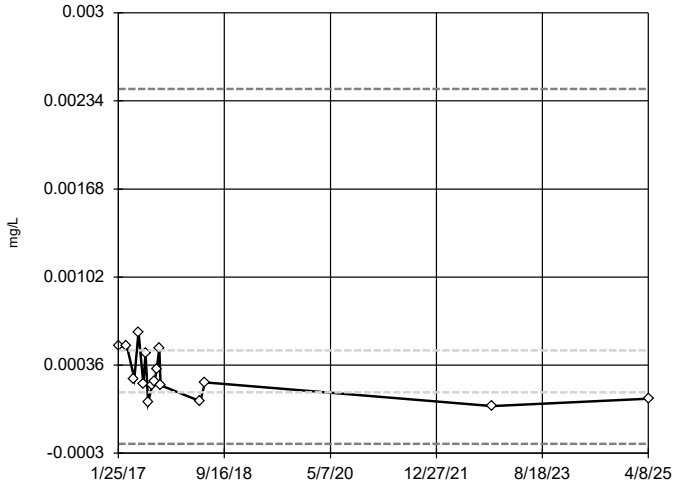
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.002431, low cutoff = -0.0002298, based on IQR multiplier of 3.

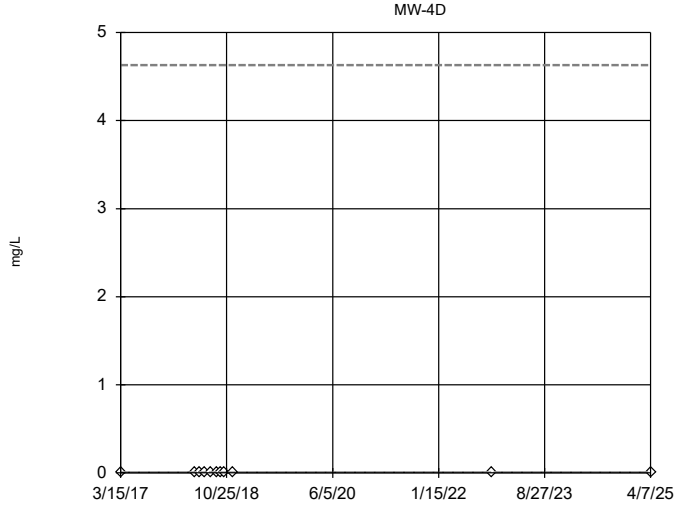
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 4.63, low cutoff = 1.3e-8, based on IQR multiplier of 3.

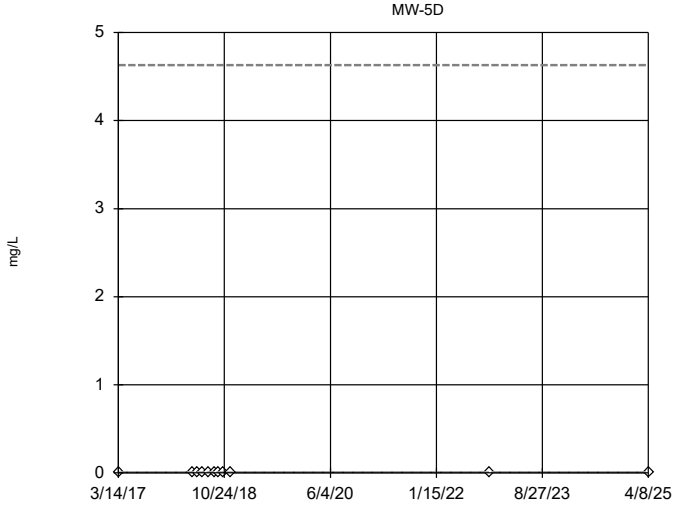
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 4.63, low cutoff = 1.3e-8, based on IQR multiplier of 3.

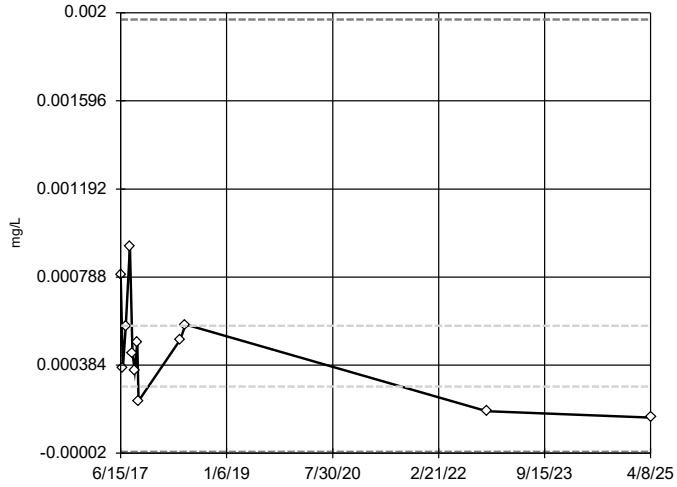
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.001969, low cutoff = -0.00001366, based on IQR multiplier of 3.

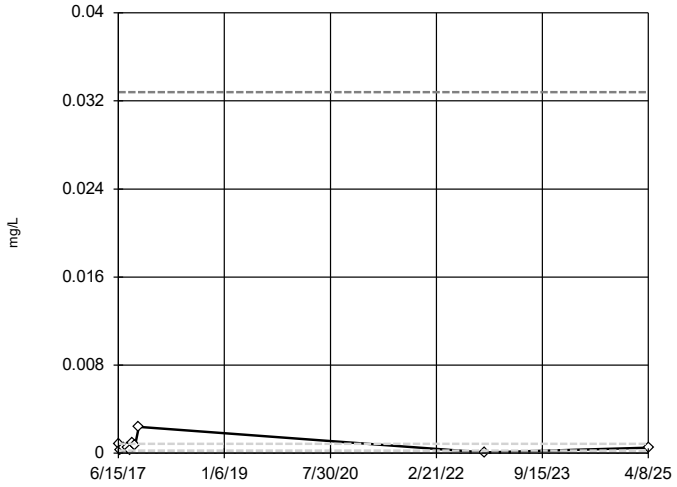
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.03279, low cutoff = 0.000006676, based on IQR multiplier of 3.

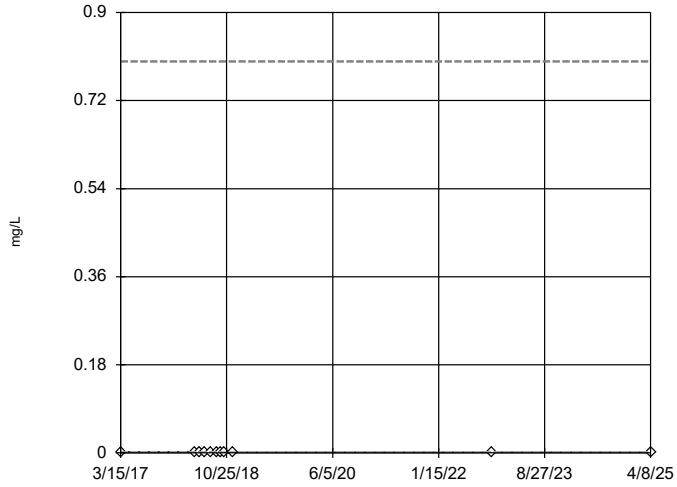
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.8, low cutoff = 8.0e-8, based on IQR multiplier of 3.

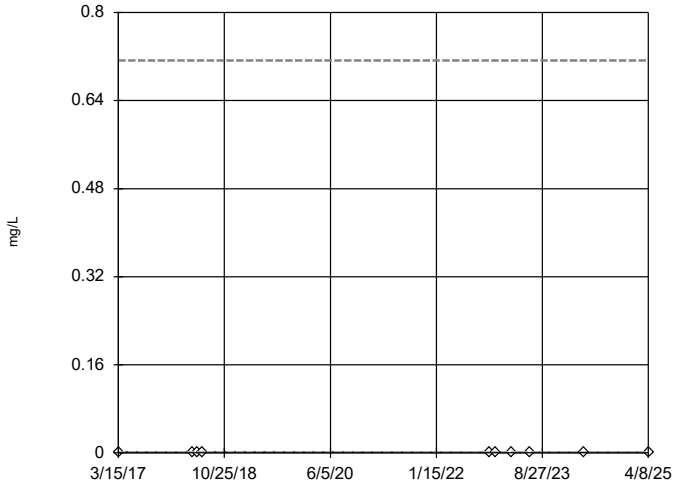
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.7125, low cutoff = 1.6e-7, based on IQR multiplier of 3.

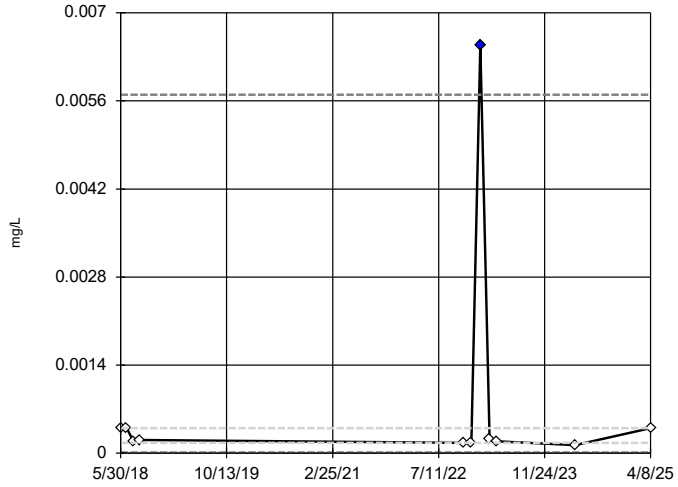
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 11

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.005699, low cutoff = 0.00001158, based on IQR multiplier of 3.

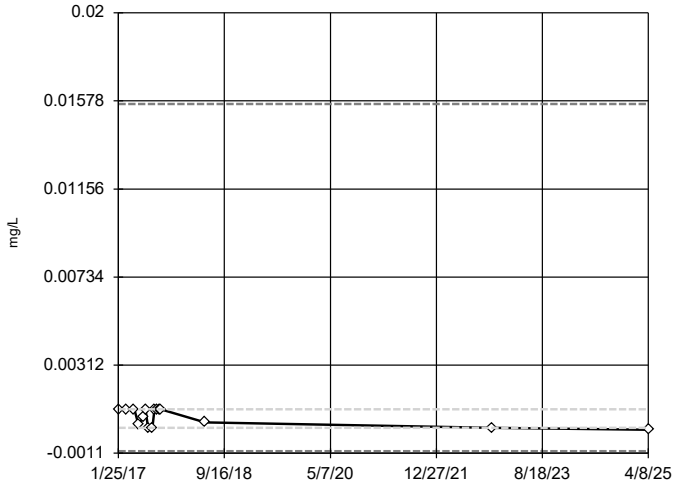
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01562, low cutoff = -0.001, based on IQR multiplier of 3.

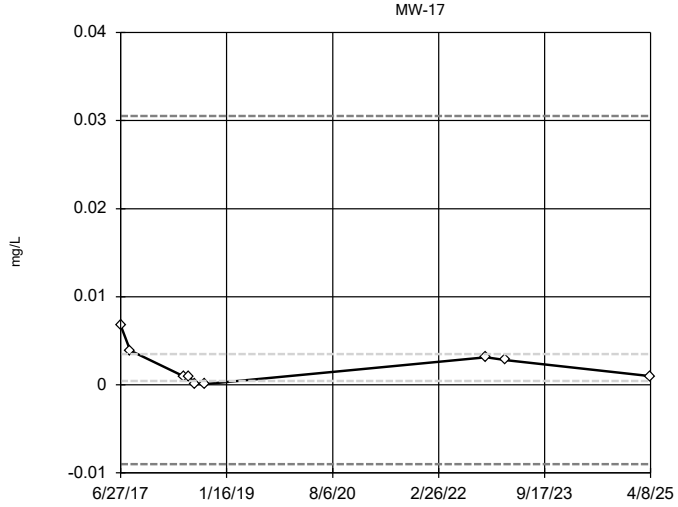
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.03052, low cutoff = -0.009002, based on IQR multiplier of 3.

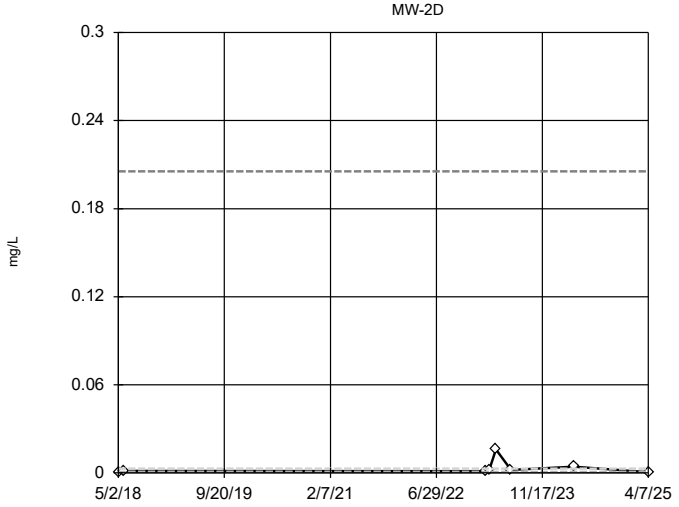
Constituent: Cadmium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2055, low cutoff = 0.00001075, based on IQR multiplier of 3.

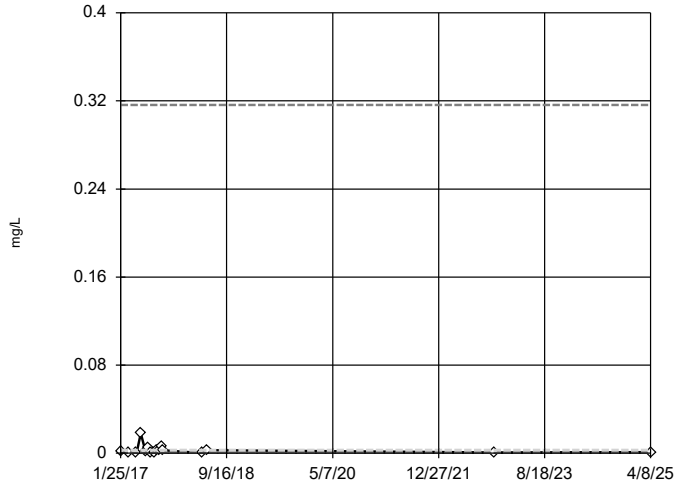
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.3162, low cutoff = 0.000005653, based on IQR multiplier of 3.

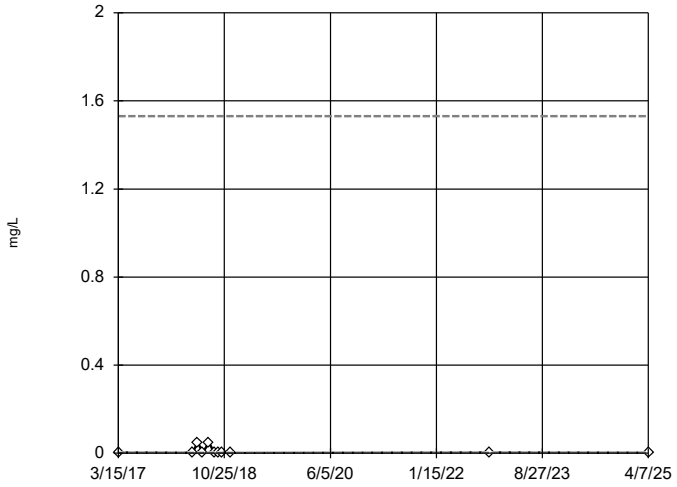
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.53, low cutoff = 0.00000144, based on IQR multiplier of 3.

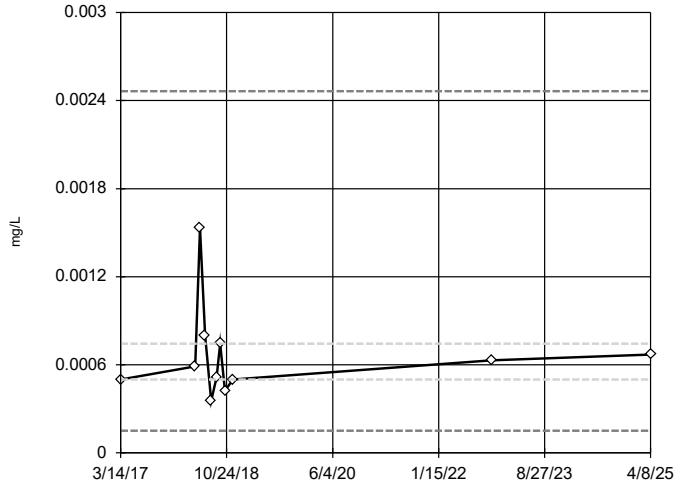
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.002464, low cutoff = 0.0001512, based on IQR multiplier of 3.

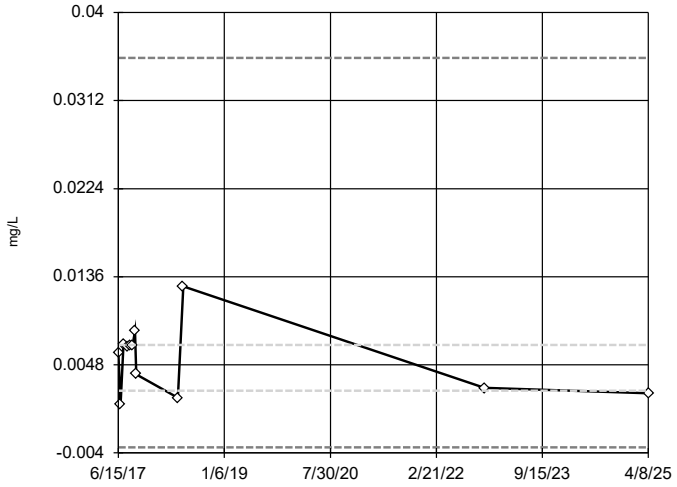
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.03546, low cutoff = -0.003449, based on IQR multiplier of 3.

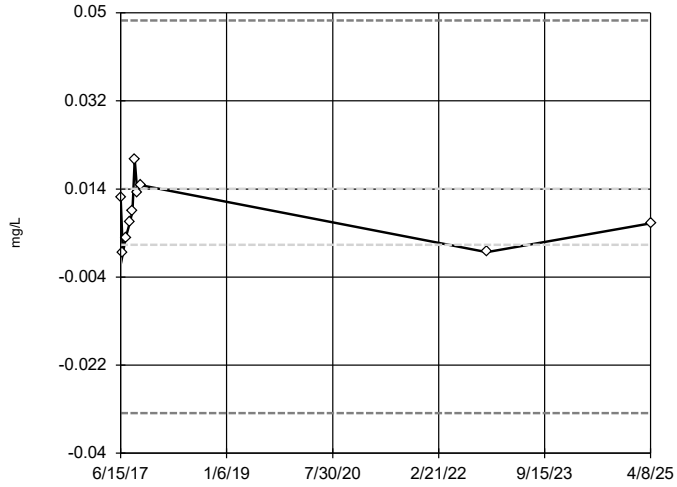
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.04845, low cutoff = -0.03178, based on IQR multiplier of 3.

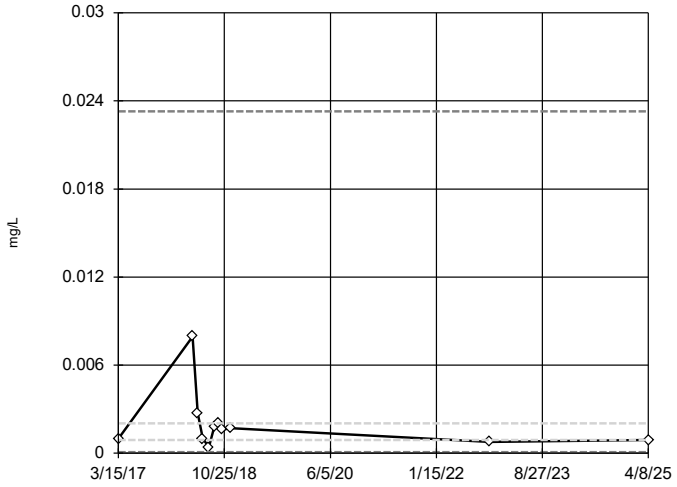
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02329, low cutoff = 0.00007843, based on IQR multiplier of 3.

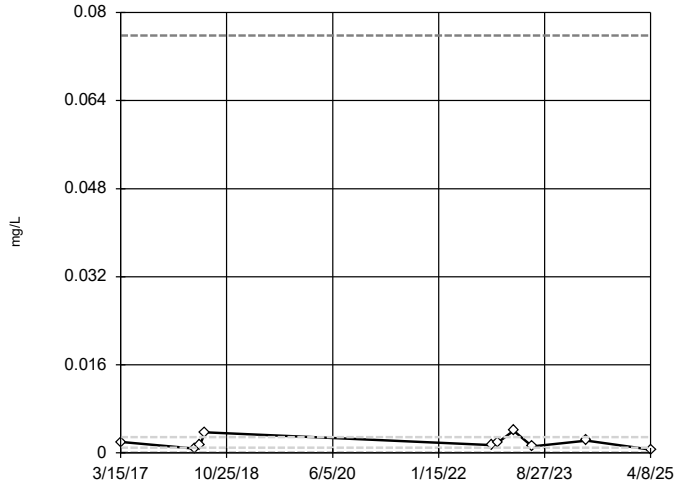
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.07584, low cutoff = 0.000037, based on IQR multiplier of 3.

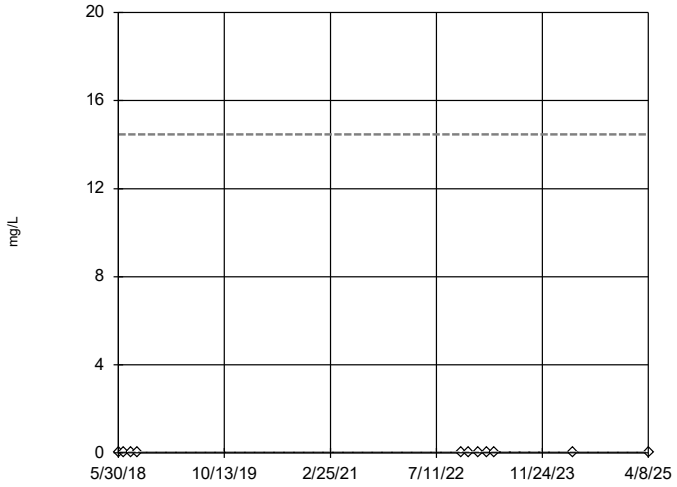
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 14.47, low cutoff = 0.000005184, based on IQR multiplier of 3.

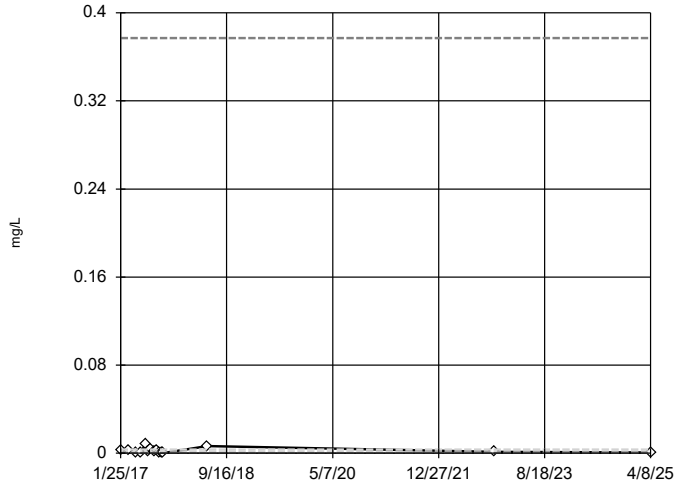
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.3772, low cutoff = 0.00000595, based on IQR multiplier of 3.

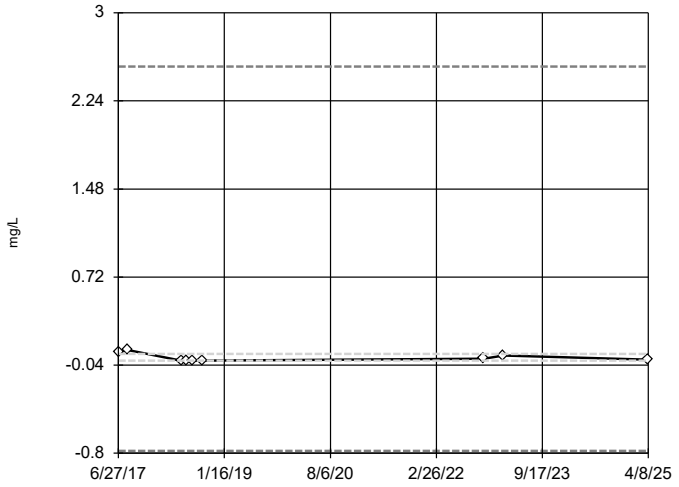
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.537, low cutoff = -0.7801, based on IQR multiplier of 3.

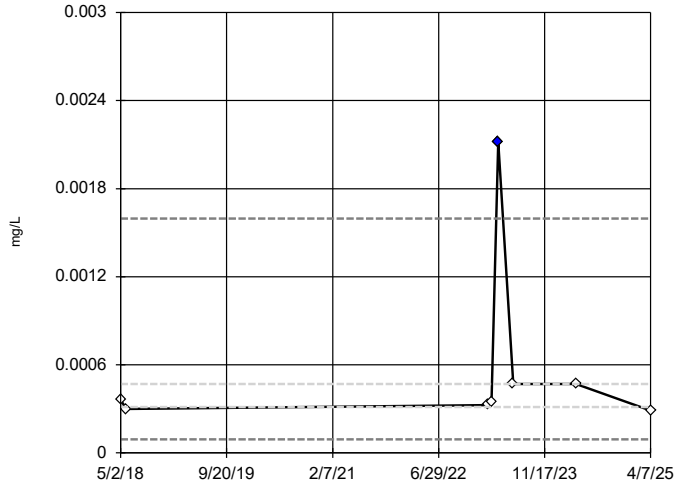
Constituent: Chromium Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-2D



n = 8

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.001595, low cutoff = 0.00009213, based on IQR multiplier of 3.

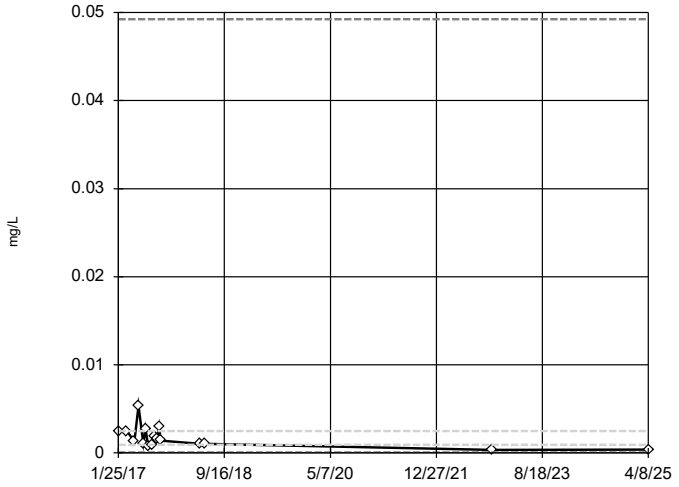
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.04925, low cutoff = 0.00004698, based on IQR multiplier of 3.

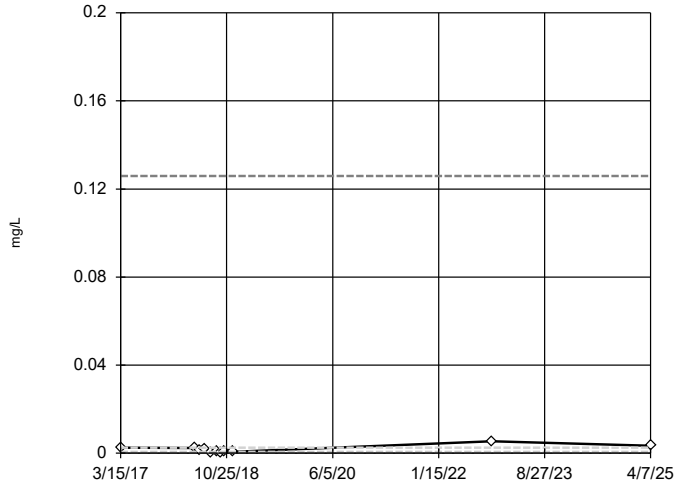
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1259, low cutoff = 0.00001344, based on IQR multiplier of 3.

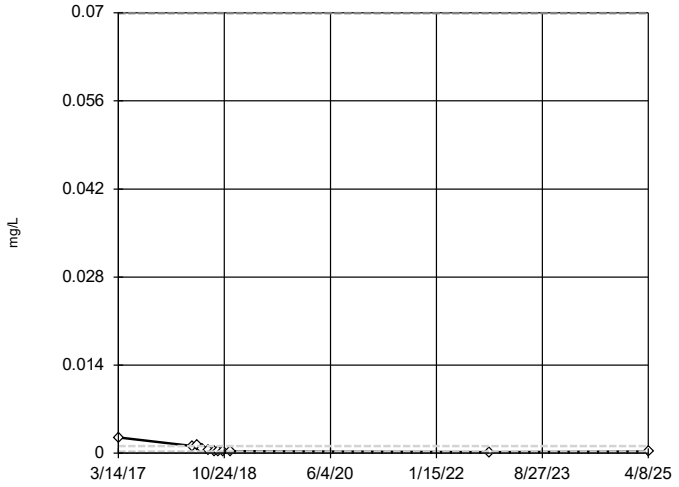
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.06997, low cutoff = 0.000004708, based on IQR multiplier of 3.

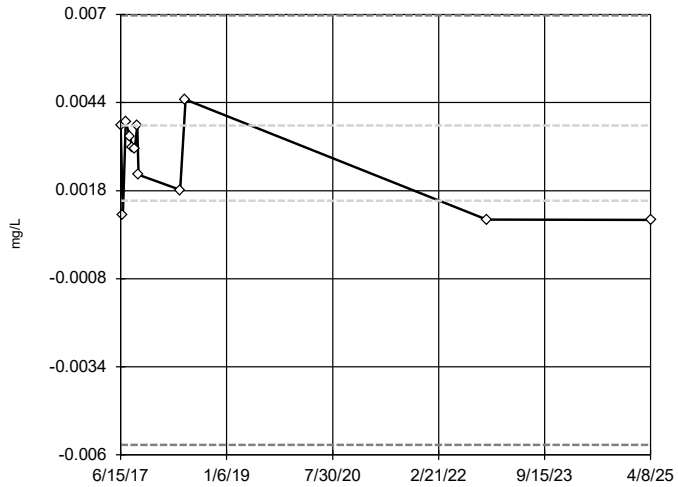
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.006972, low cutoff = -0.005702, based on IQR multiplier of 3.

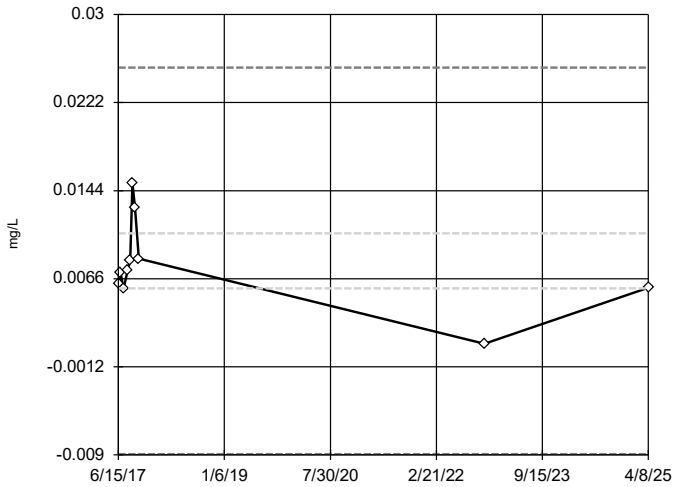
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.0253, low cutoff = -0.00893, based on IQR multiplier of 3.

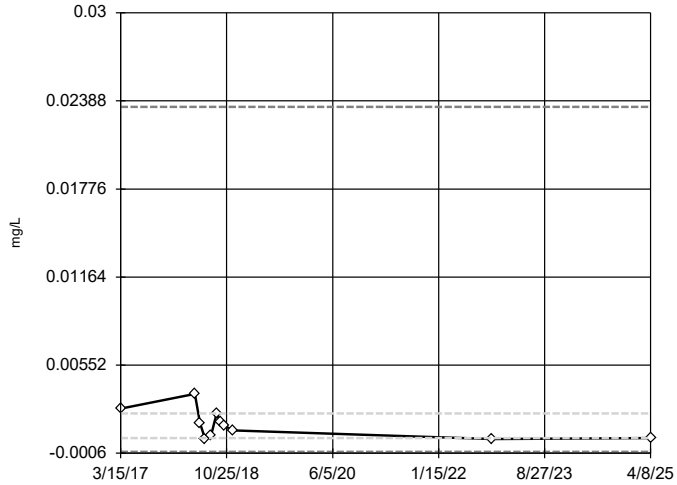
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02346, low cutoff = -0.0005047, based on IQR multiplier of 3.

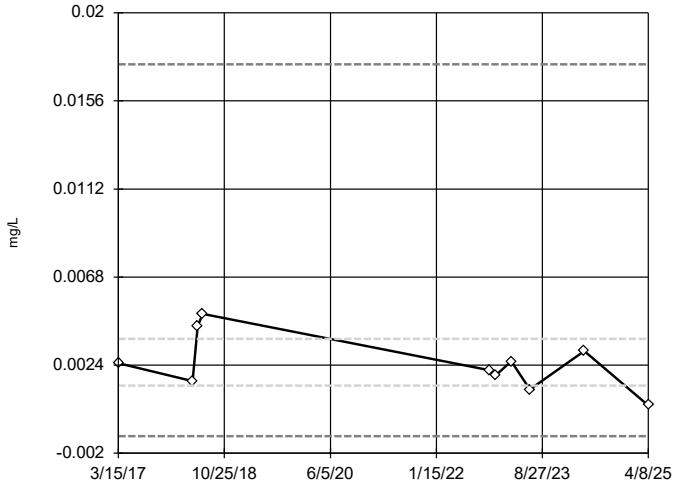
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01743, low cutoff = -0.001146, based on IQR multiplier of 3.

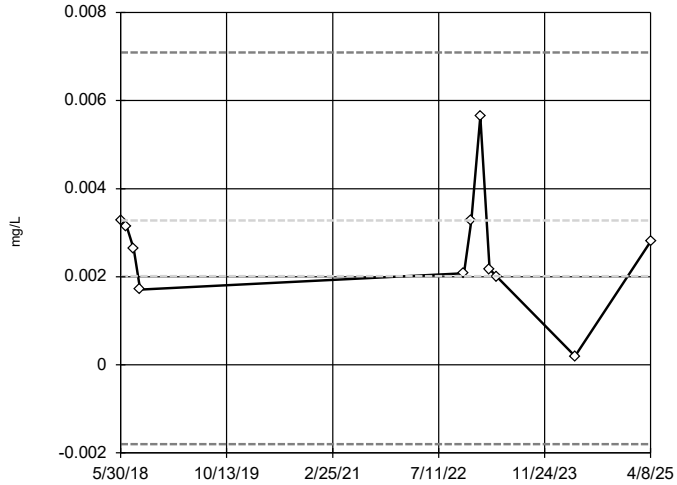
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.00709, low cutoff = -0.0018, based on IQR multiplier of 3.

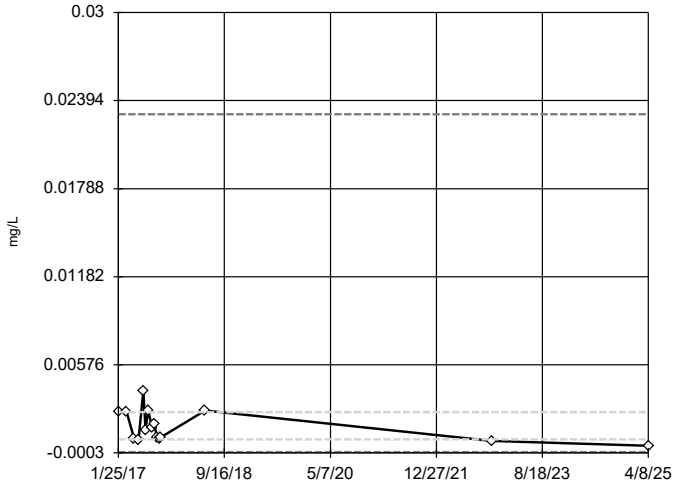
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02299, low cutoff = -0.0002436, based on IQR multiplier of 3.

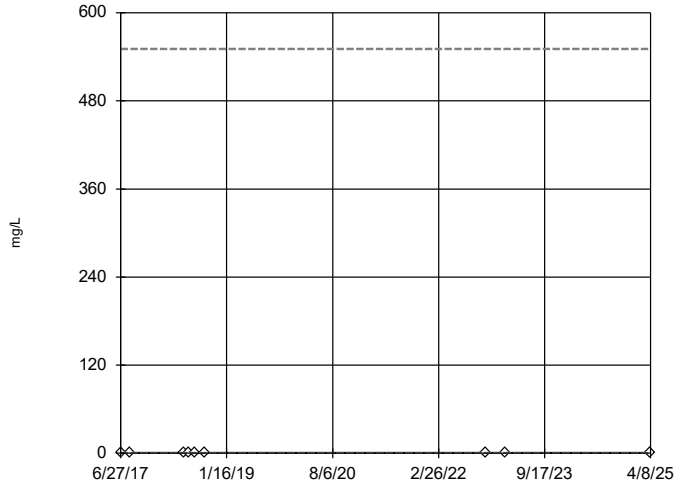
Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

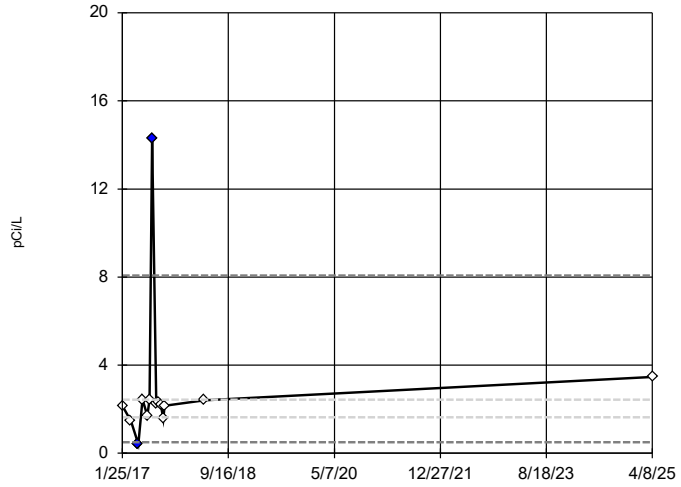
High cutoff = 550.9, low cutoff = 6.6e-8, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 6/17/2025 12:04 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 14

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

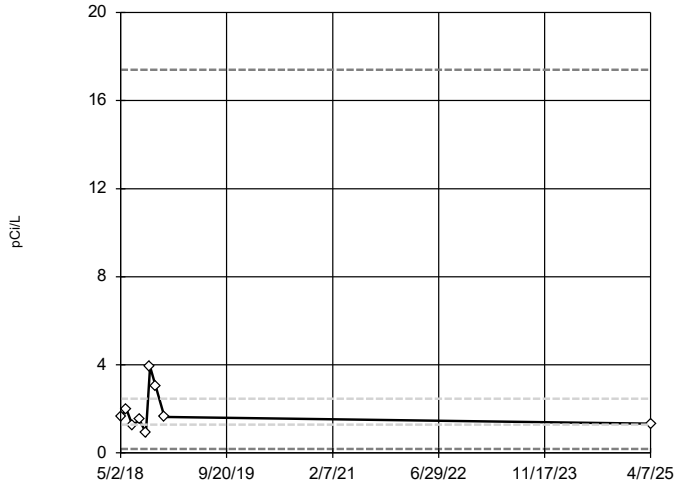
High cutoff = 8.077, low cutoff = 0.4931, based on IQR multiplier of 3.

Constituent: Combined Radium 226 + 228 Analysis Run 6/17/2025 12:04 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 9

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

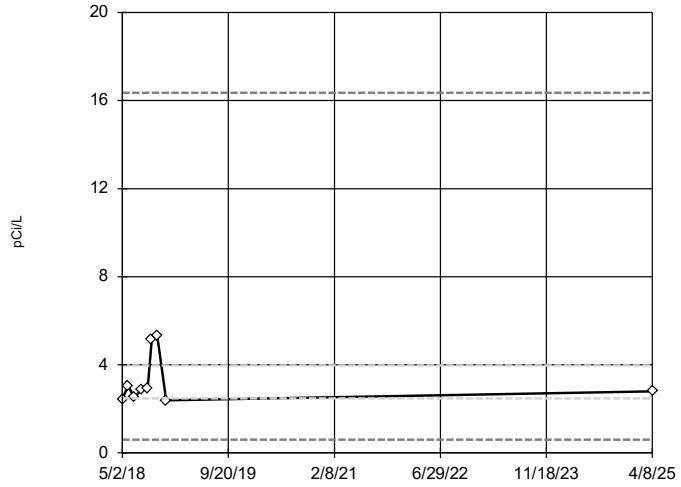
High cutoff = 17.4, low cutoff = 0.1824, based on IQR multiplier of 3.

Constituent: Combined Radium 226 + 228 Analysis Run 6/17/2025 12:04 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 9

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

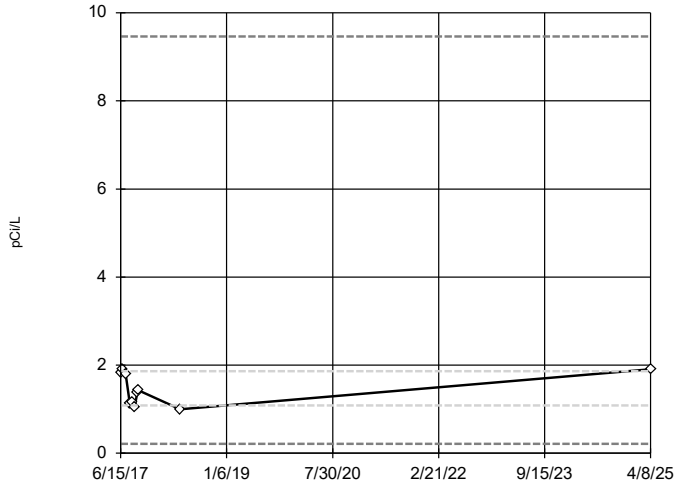
High cutoff = 16.36, low cutoff = 0.6027, based on IQR multiplier of 3.

Constituent: Combined Radium 226 + 228 Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-6D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 9.465, low cutoff = 0.214, based on IQR multiplier of 3.

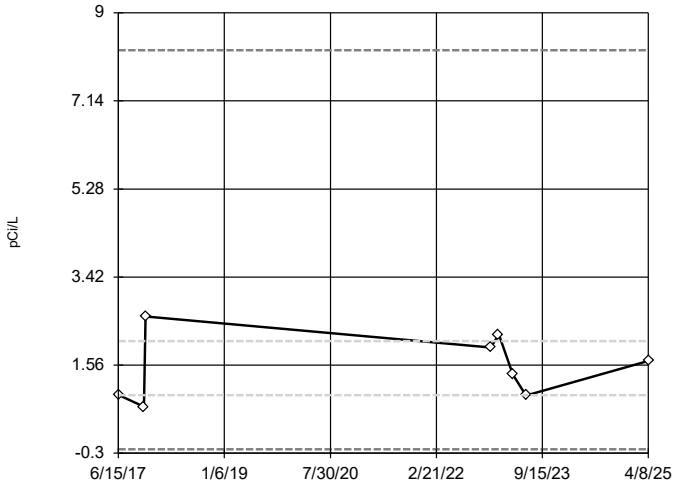
Constituent: Combined Radium 226 + 228 Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 8

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.212, low cutoff = -0.2169, based on IQR multiplier of 3.

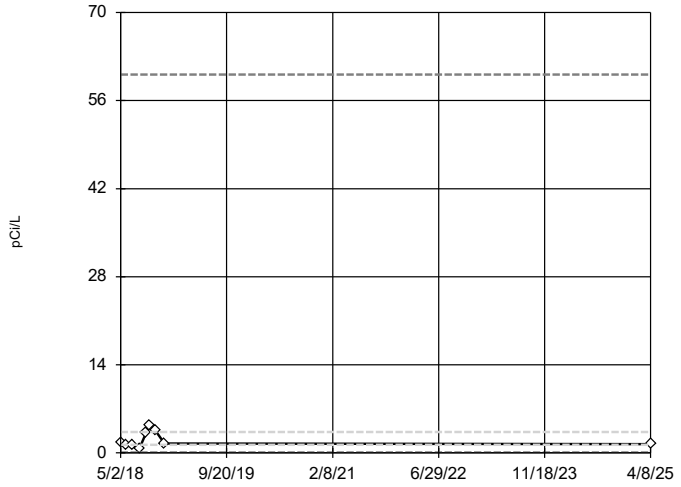
Constituent: Combined Radium 226 + 228 Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-12D



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 60.15, low cutoff = 0.07041, based on IQR multiplier of 3.

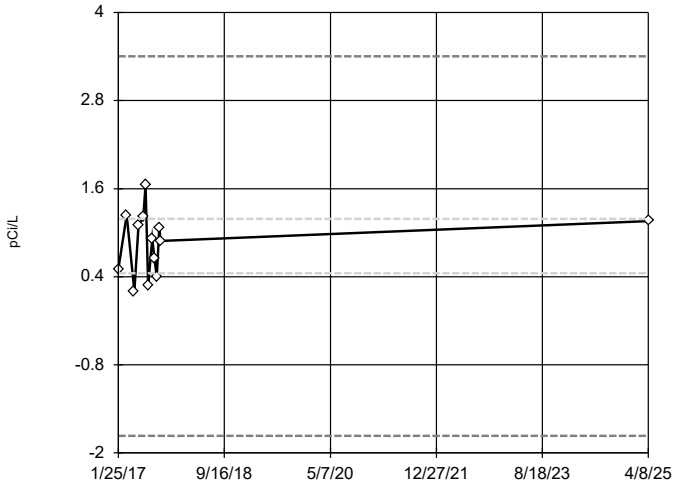
Constituent: Combined Radium 226 + 228 Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-15



n = 13

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 3.403, low cutoff = -1.767, based on IQR multiplier of 3.

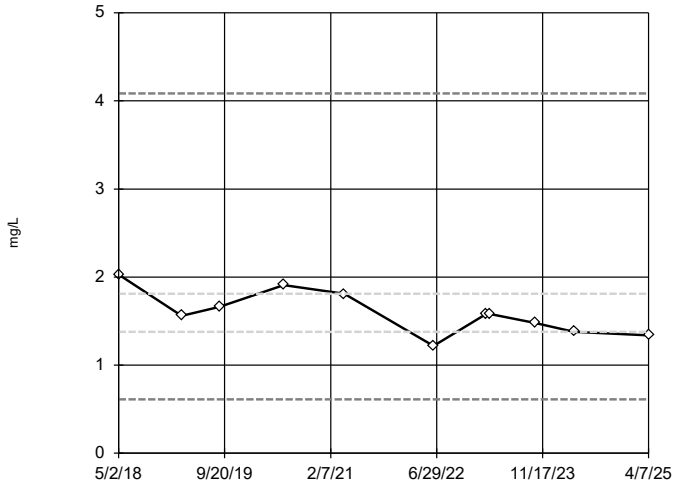
Constituent: Combined Radium 226 + 228 Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 4.084, low cutoff = 0.6116, based on IQR multiplier of 3.

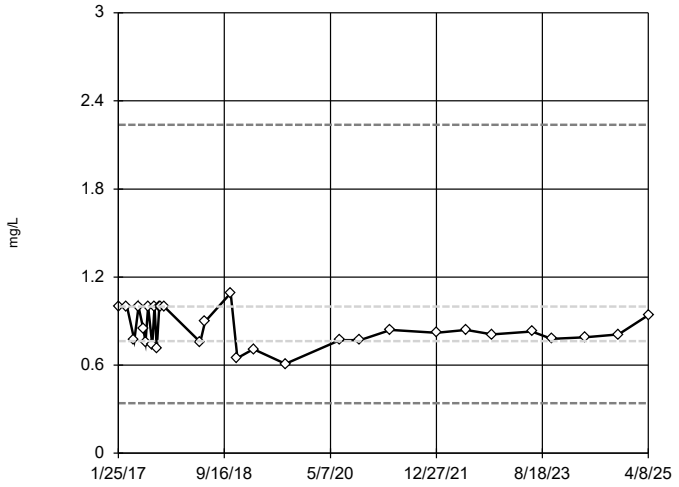
Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 30

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.238, low cutoff = 0.3416, based on IQR multiplier of 3.

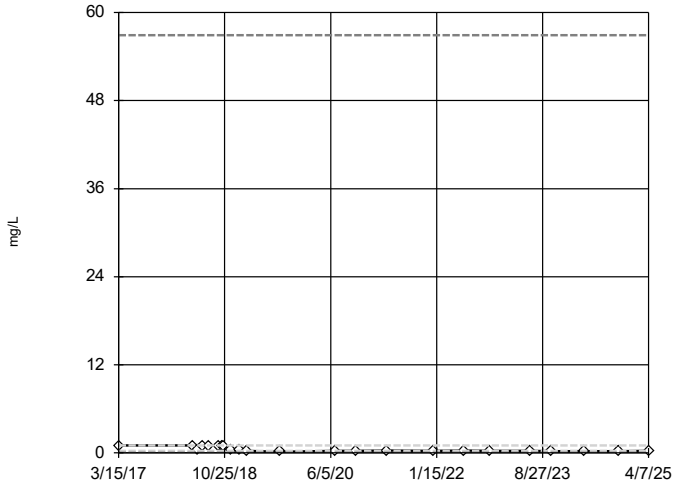
Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 23

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 56.9, low cutoff = 0.00457, based on IQR multiplier of 3.

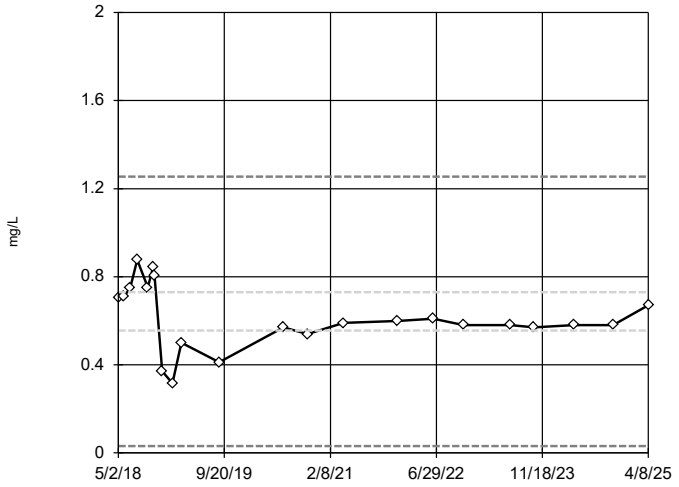
Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 22

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 1.254, low cutoff = 0.03045, based on IQR multiplier of 3.

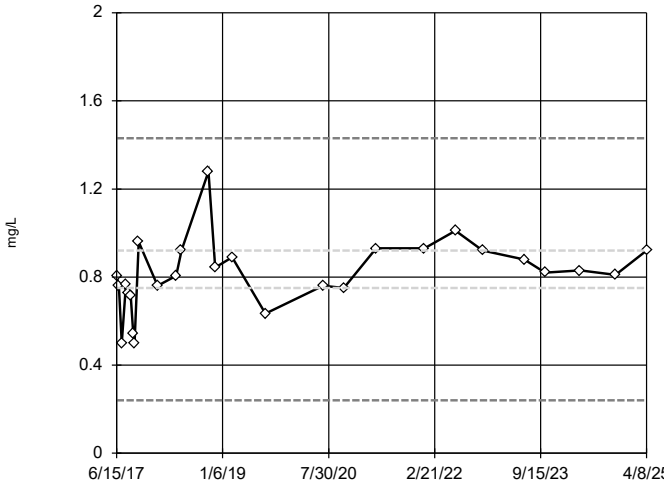
Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-6D



n = 27

No outliers found.
Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

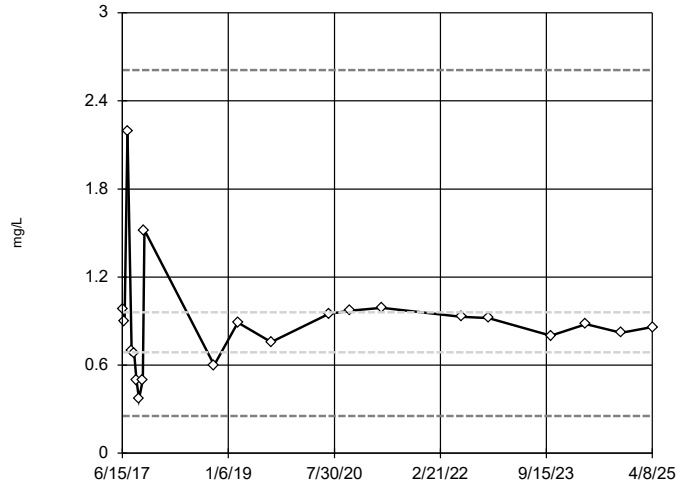
High cutoff = 1.43, low cutoff = 0.24, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 21

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

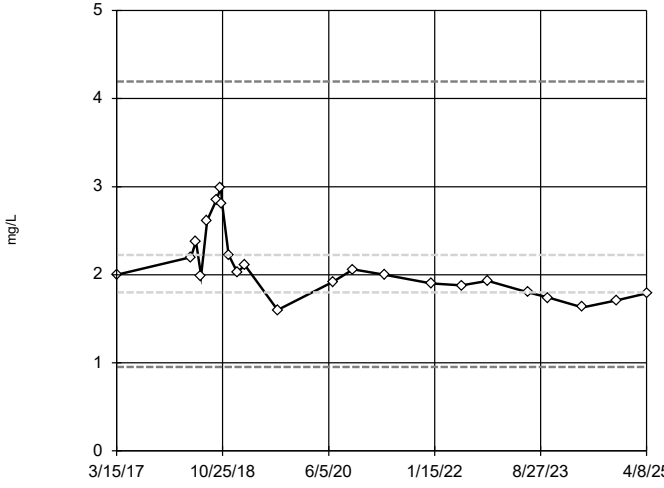
High cutoff = 2.61, low cutoff = 0.253, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-12D



n = 23

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

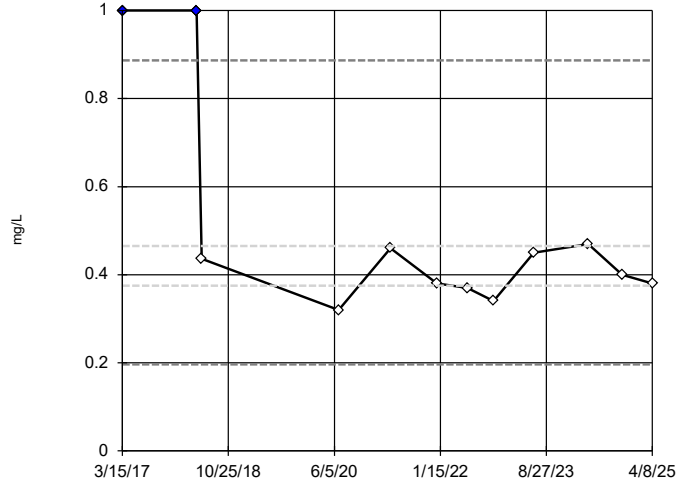
High cutoff = 4.193, low cutoff = 0.9546, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers
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Tukey's Outlier Screening

MW-13D



n = 12

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

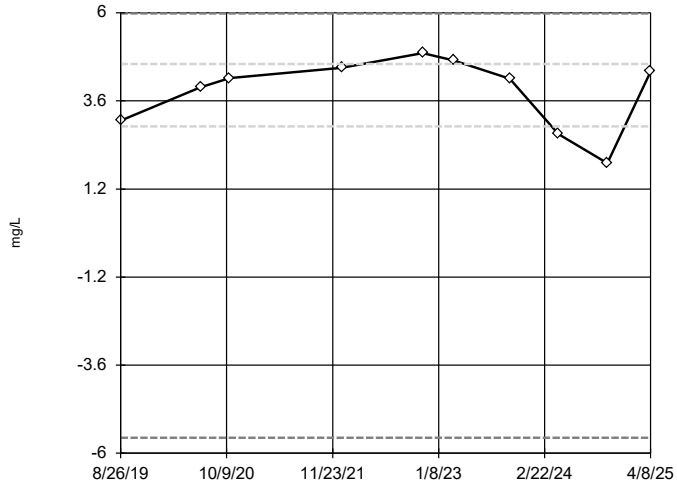
High cutoff = 0.8866, low cutoff = 0.1966, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 10

No outliers found. Tukey's method selected by user.

Data were x^5 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 5.981, low cutoff = -5.574, based on IQR multiplier of 3.

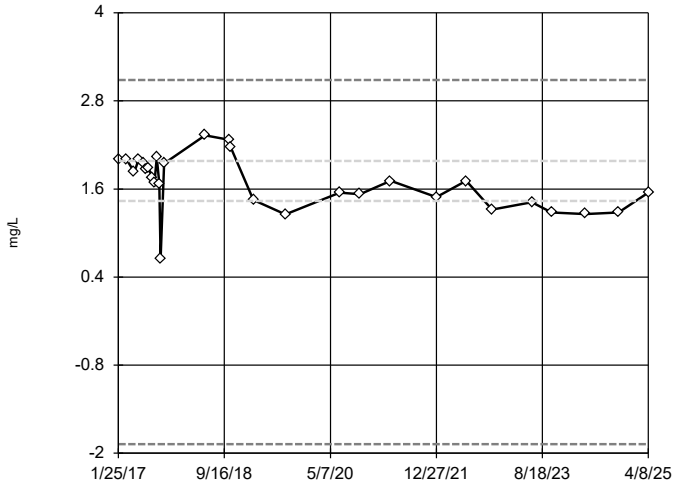
Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-15



n = 29

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 3.083, low cutoff = -1.877, based on IQR multiplier of 3.

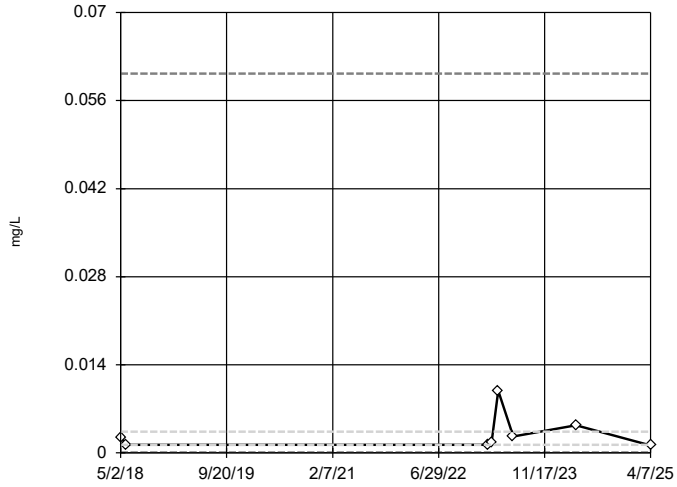
Constituent: Fluoride Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.06027, low cutoff = 0.00007266, based on IQR multiplier of 3.

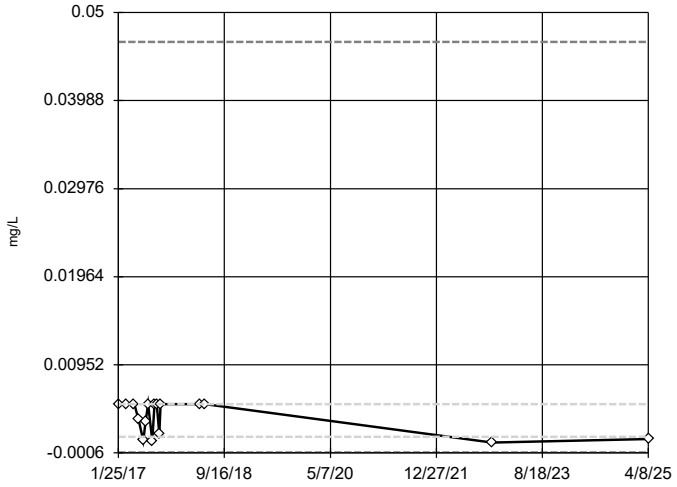
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.04662, low cutoff = -0.0005289, based on IQR multiplier of 3.

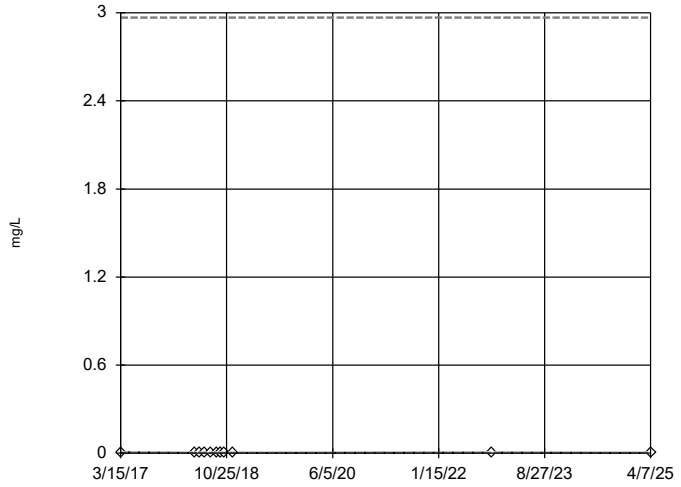
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.967, low cutoff = 0.000001003, based on IQR multiplier of 3.

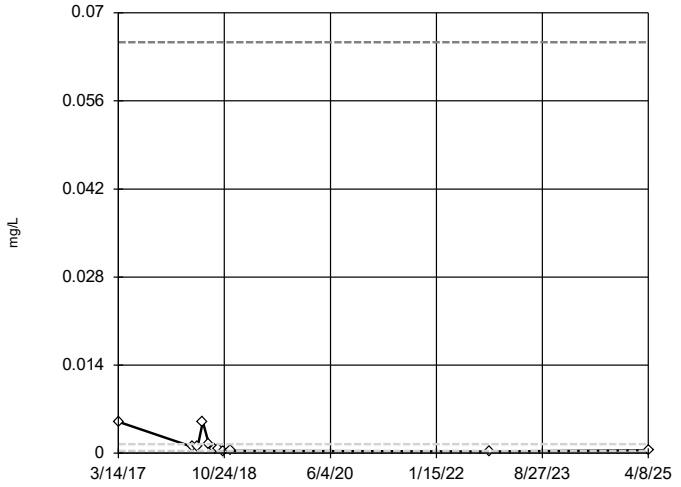
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.06534, low cutoff = 0.000008755, based on IQR multiplier of 3.

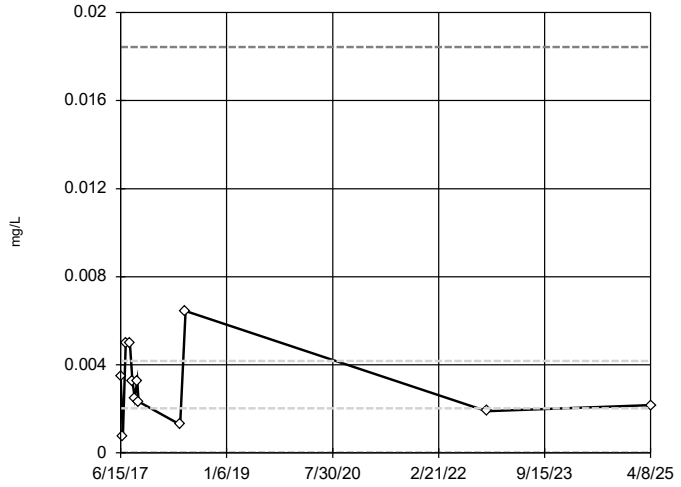
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01844, low cutoff = 0.00001302, based on IQR multiplier of 3.

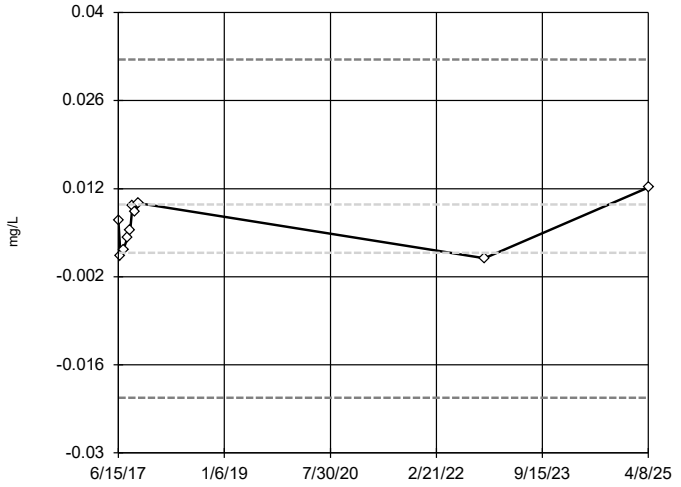
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.03252, low cutoff = -0.02124, based on IQR multiplier of 3.

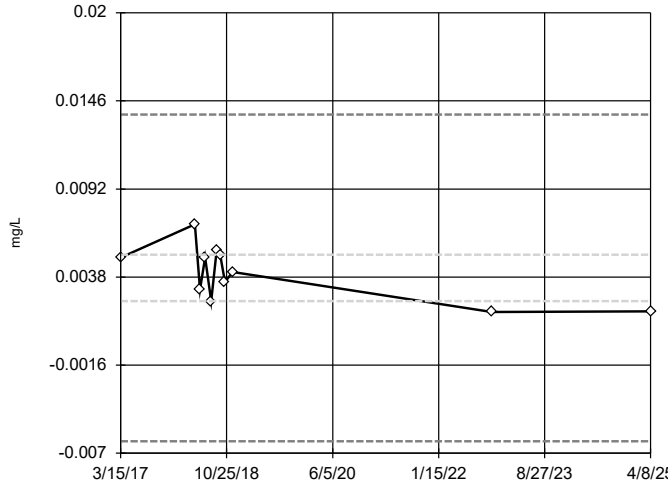
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.01376, low cutoff = -0.00626, based on IQR multiplier of 3.

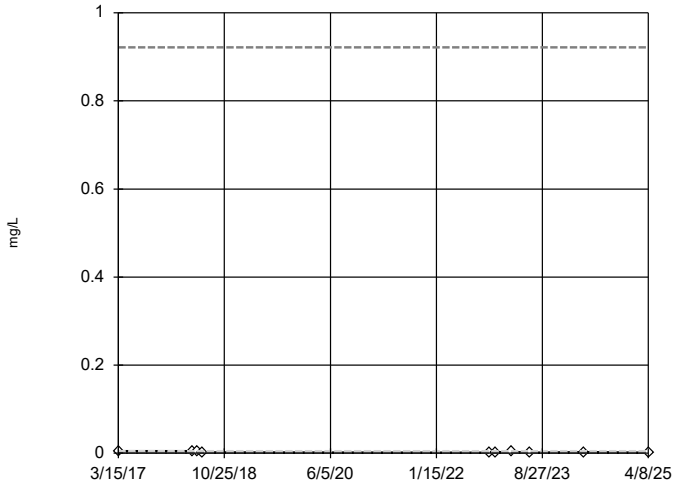
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.9216, low cutoff = 0.000004767, based on IQR multiplier of 3.

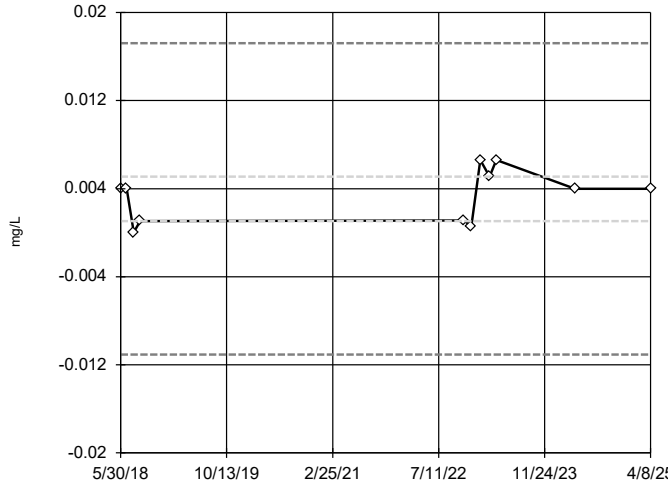
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.01722, low cutoff = -0.01106, based on IQR multiplier of 3.

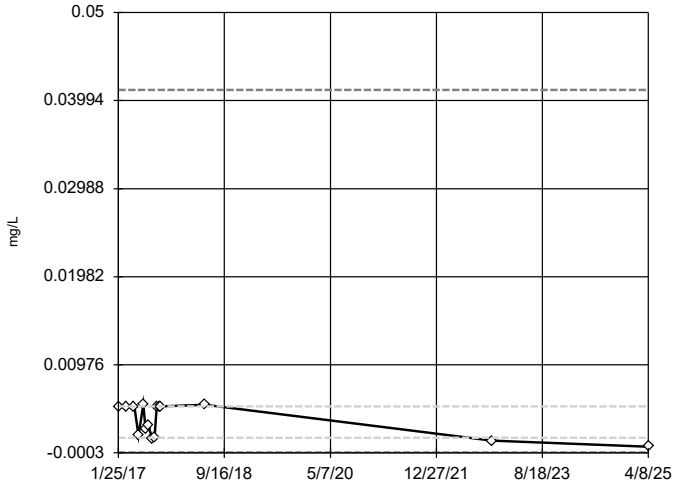
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.04114, low cutoff = -0.0002303, based on IQR multiplier of 3.

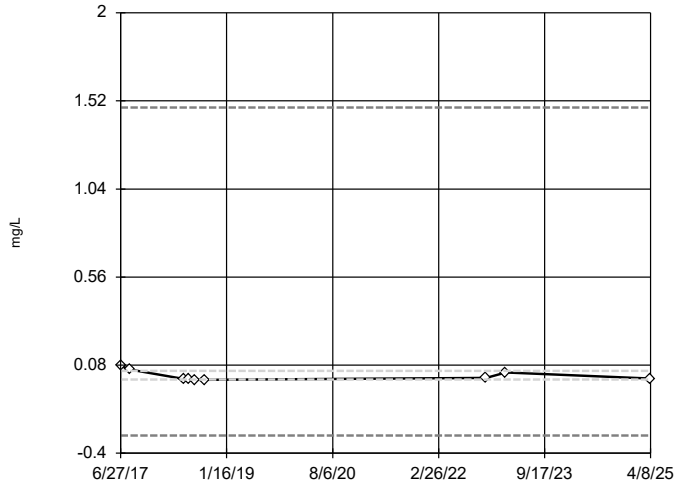
Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

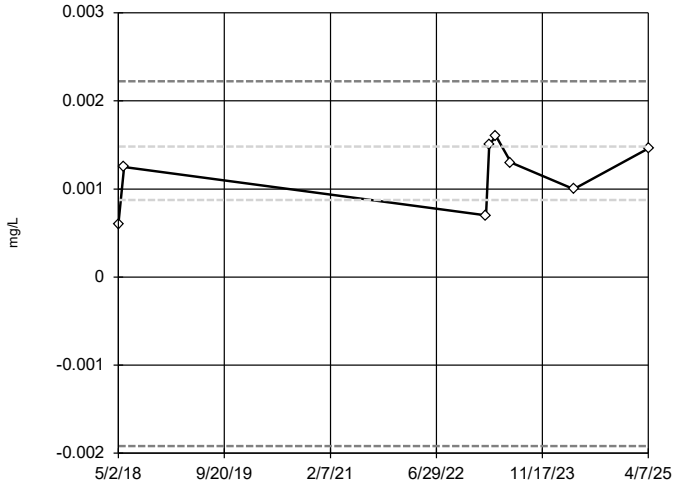
High cutoff = 1.484, low cutoff = -0.3029, based on IQR multiplier of 3.

Constituent: Lead Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

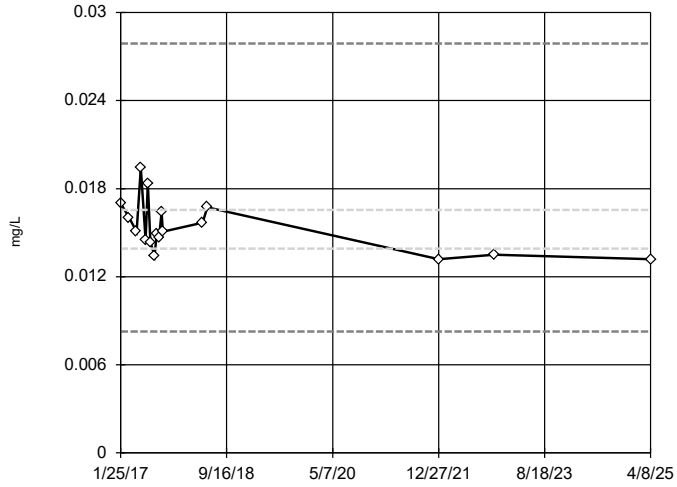
High cutoff = 0.002221, low cutoff = -0.001917, based on IQR multiplier of 3.

Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 17

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

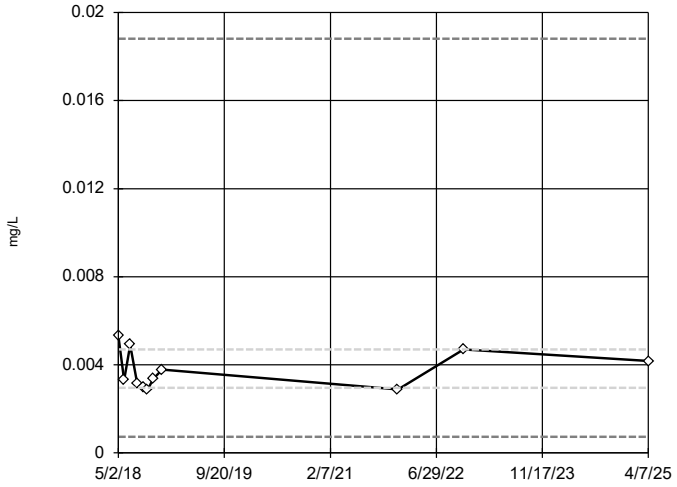
High cutoff = 0.02789, low cutoff = 0.008265, based on IQR multiplier of 3.

Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

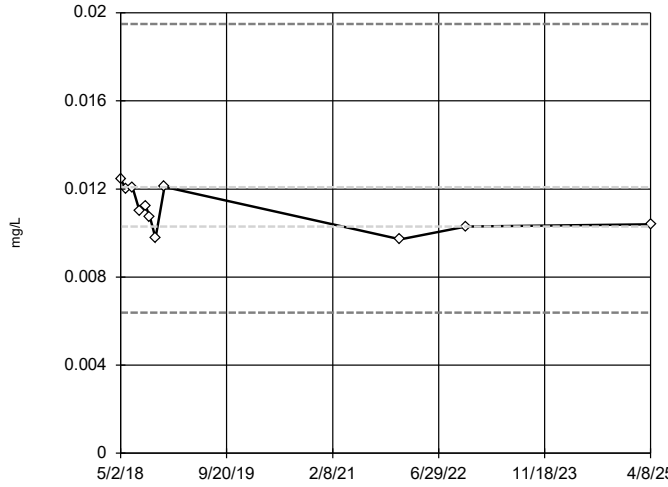
High cutoff = 0.01882, low cutoff = 0.0007394, based on IQR multiplier of 3.

Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01949, low cutoff = 0.006385, based on IQR multiplier of 3.

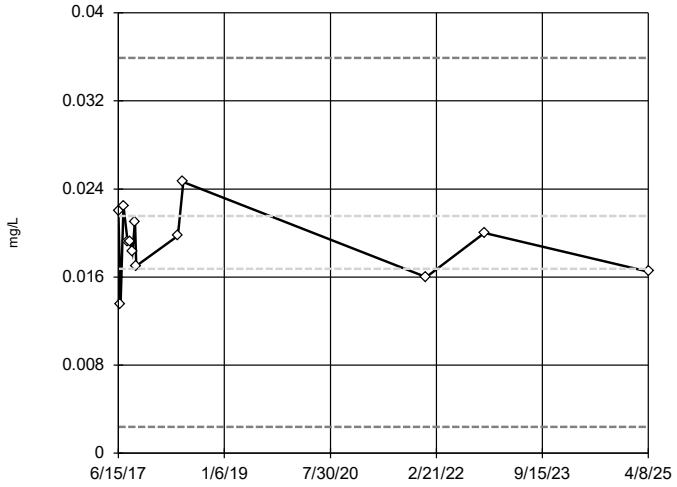
Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-6D



n = 13

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.0359, low cutoff = 0.0024, based on IQR multiplier of 3.

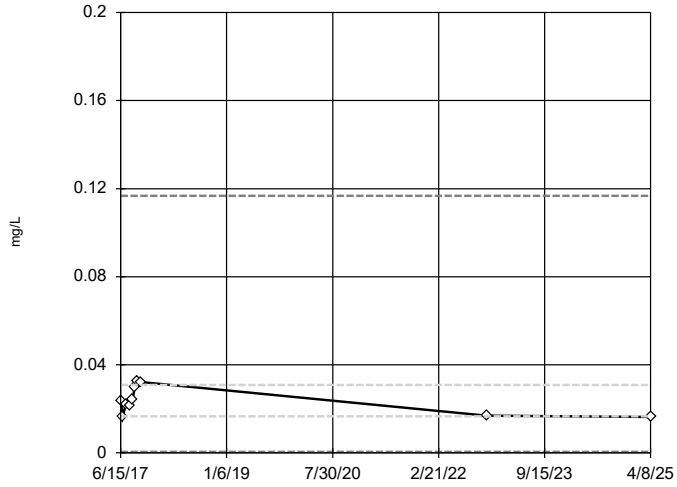
Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1168, low cutoff = 0.0005232, based on IQR multiplier of 3.

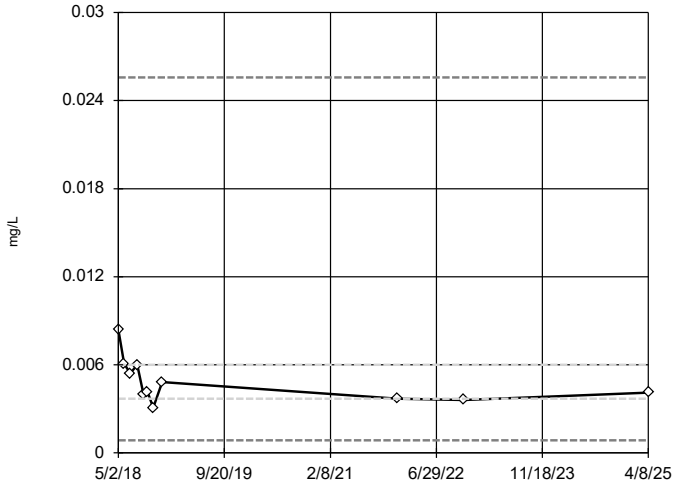
Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02559, low cutoff = 0.0008677, based on IQR multiplier of 3.

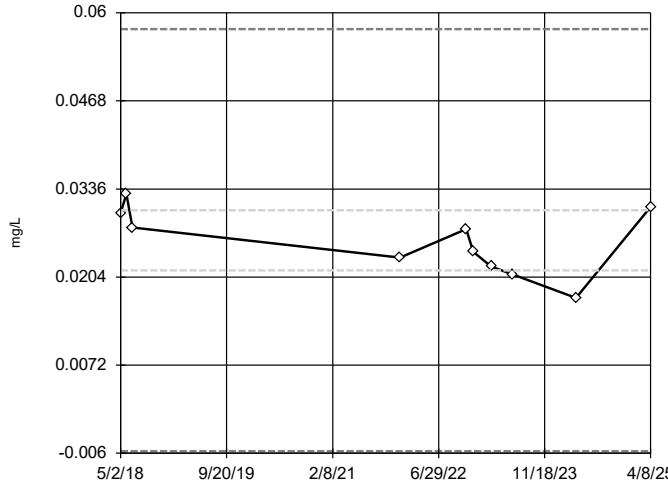
Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.05754, low cutoff = -0.005705, based on IQR multiplier of 3.

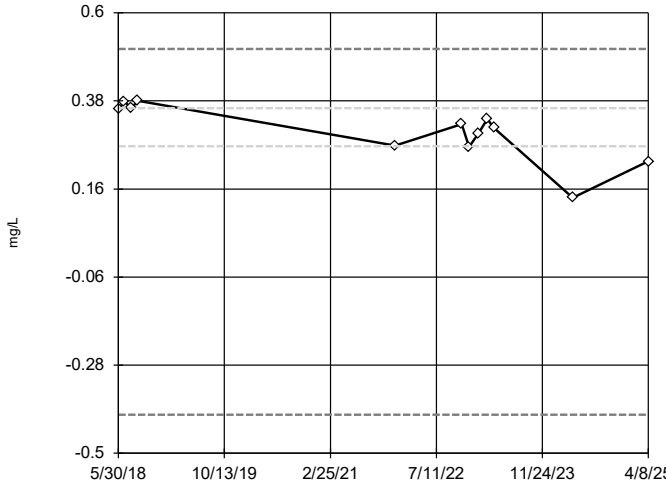
Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-14



n = 12

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.5094, low cutoff = -0.4041, based on IQR multiplier of 3.

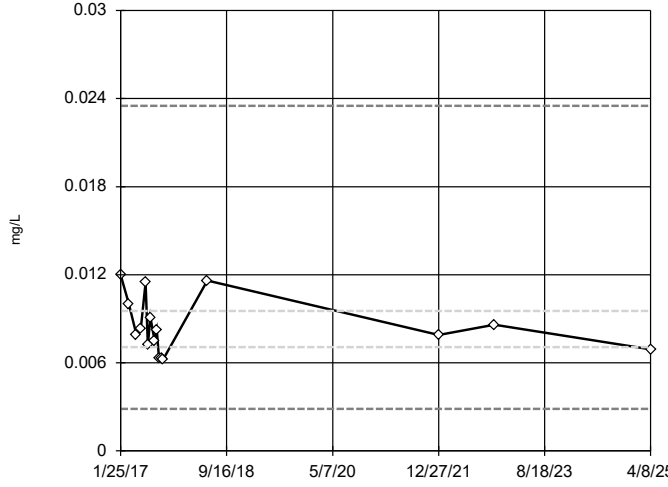
Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-15



n = 16

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.0235, low cutoff = 0.002867, based on IQR multiplier of 3.

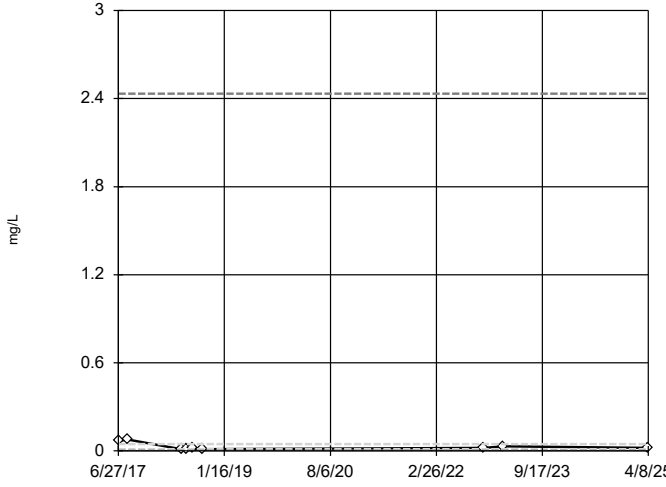
Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.434, low cutoff = 0.0002383, based on IQR multiplier of 3.

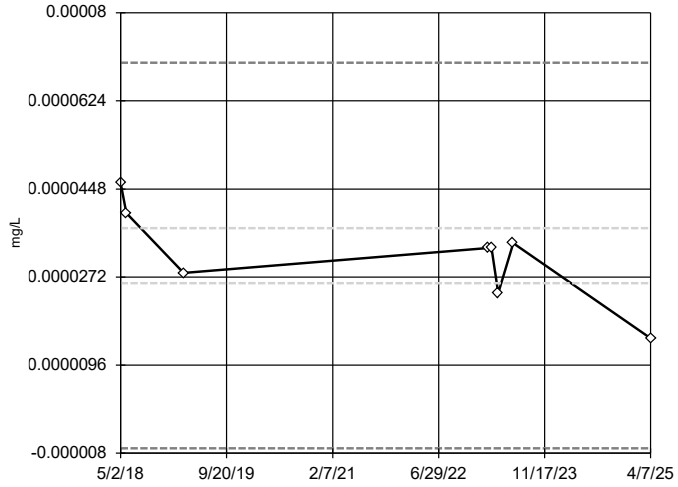
Constituent: Lithium Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.00007, low cutoff = -0.000007, based on IQR multiplier of 3.

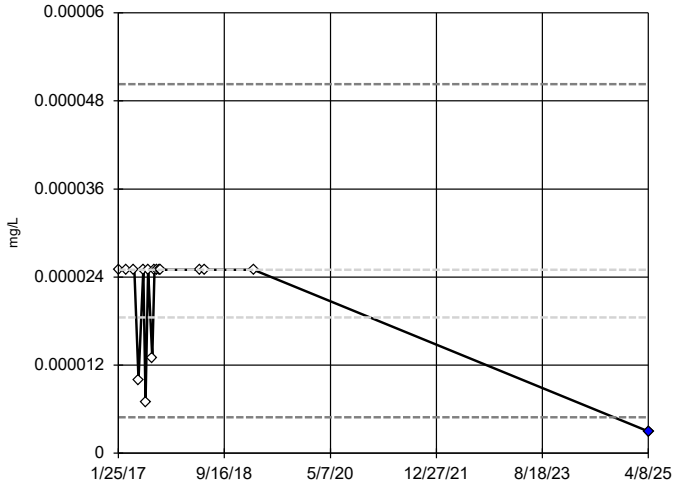
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

Outlier is drawn as solid. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.00005029, low cutoff = 0.000004889, based on IQR multiplier of 3.

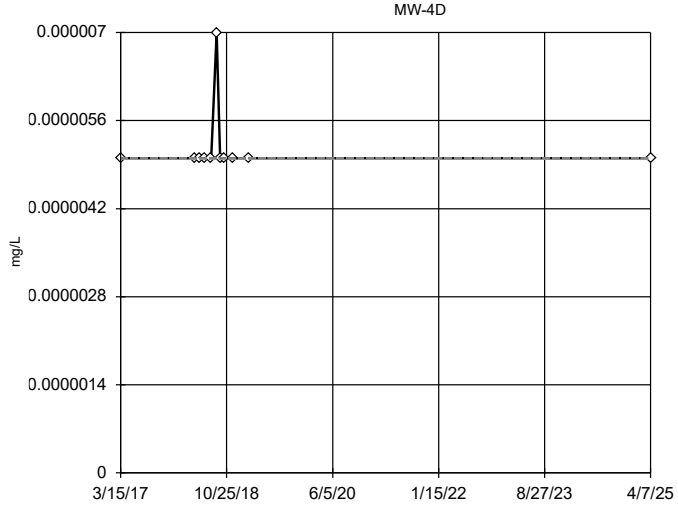
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

The results were invalidated, because the lower and upper quartiles are equal.

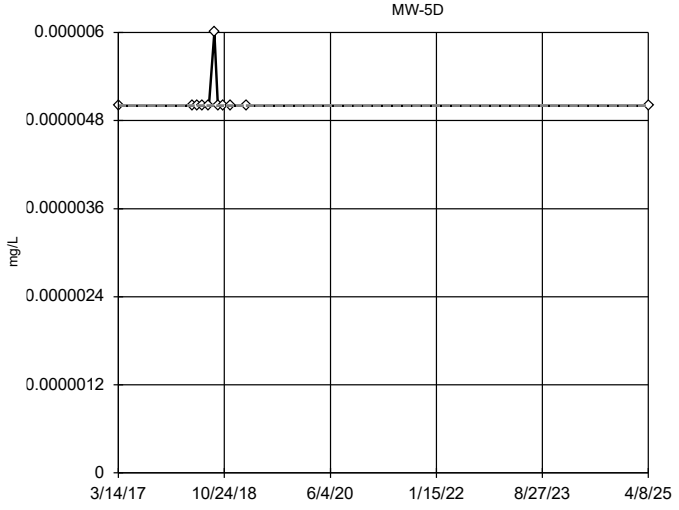
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

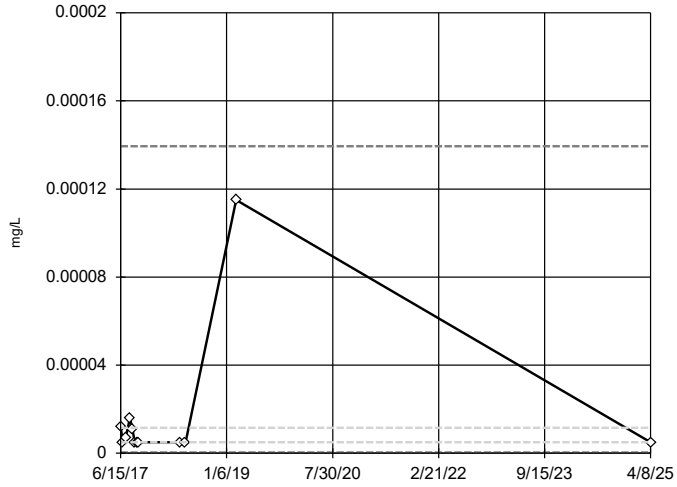
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.0001394, low cutoff = 4.1e-7, based on IQR multiplier of 3.

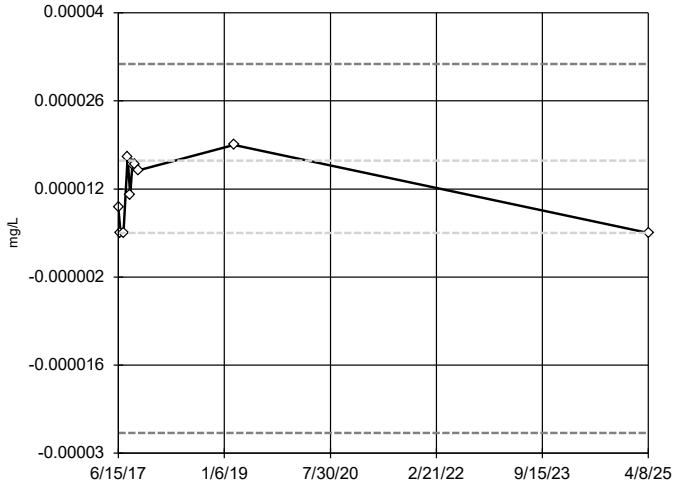
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.00003186, low cutoff = -0.00002679, based on IQR multiplier of 3.

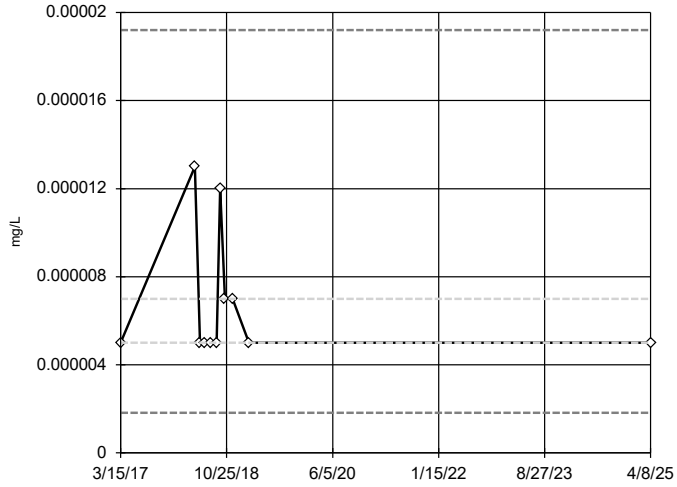
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.00001921, low cutoff = 0.000001822, based on IQR multiplier of 3.

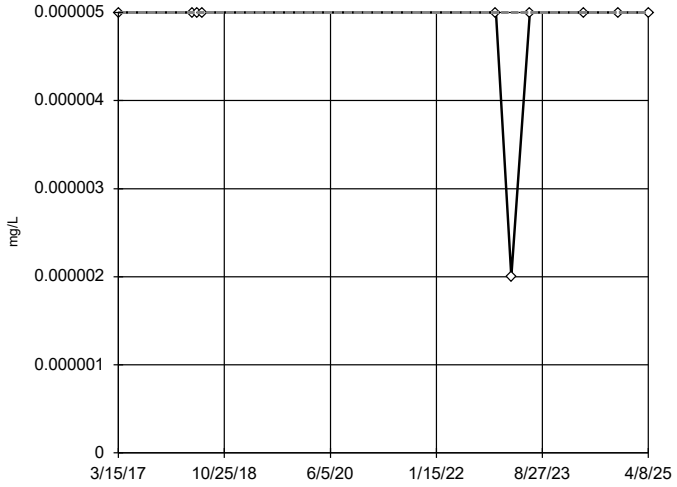
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

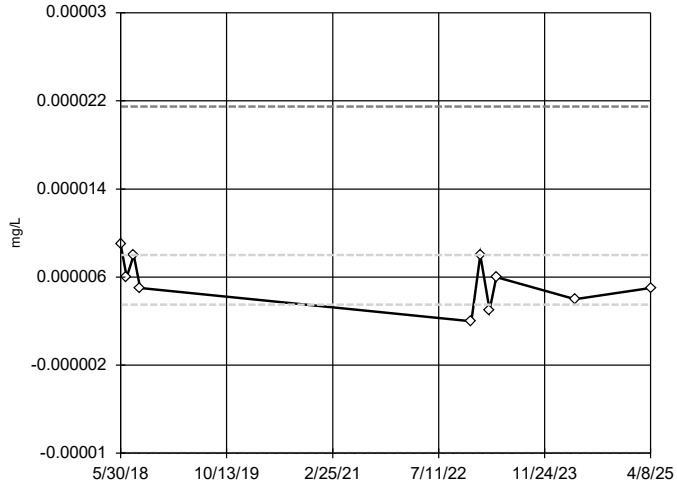
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-14



n = 10

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.0000215, low cutoff = -0.00001, based on IQR multiplier of 3.

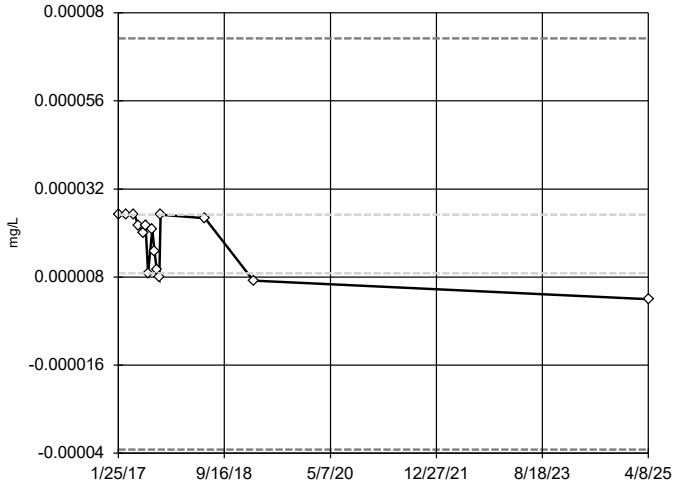
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.000073, low cutoff = -0.000039, based on IQR multiplier of 3.

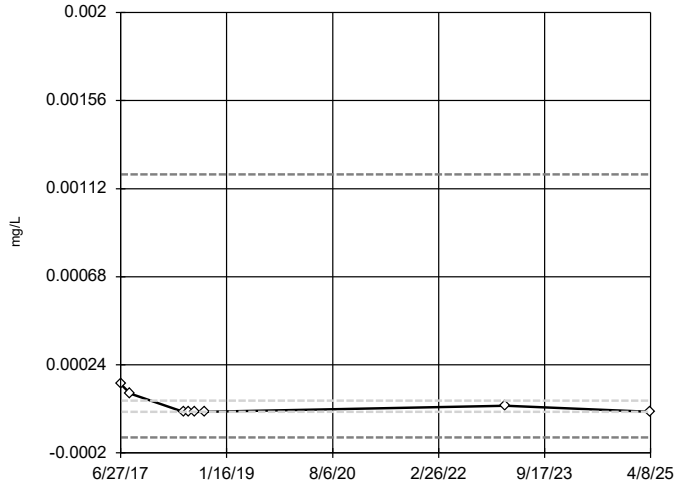
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-17



n = 8

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.001192, low cutoff = -0.0001219, based on IQR multiplier of 3.

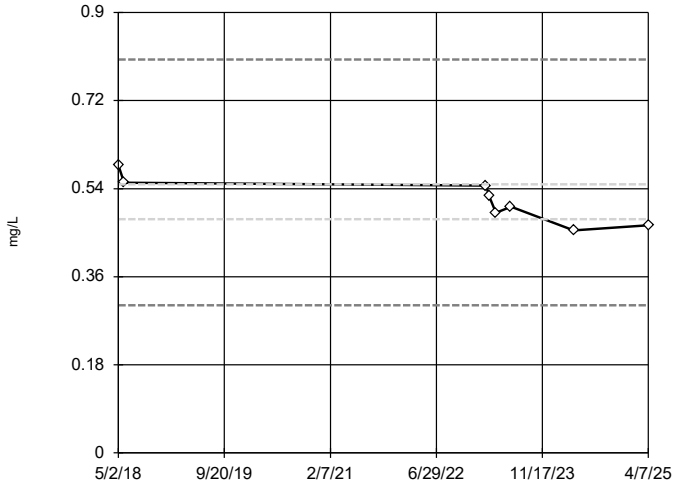
Constituent: Mercury Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.8039, low cutoff = 0.3019, based on IQR multiplier of 3.

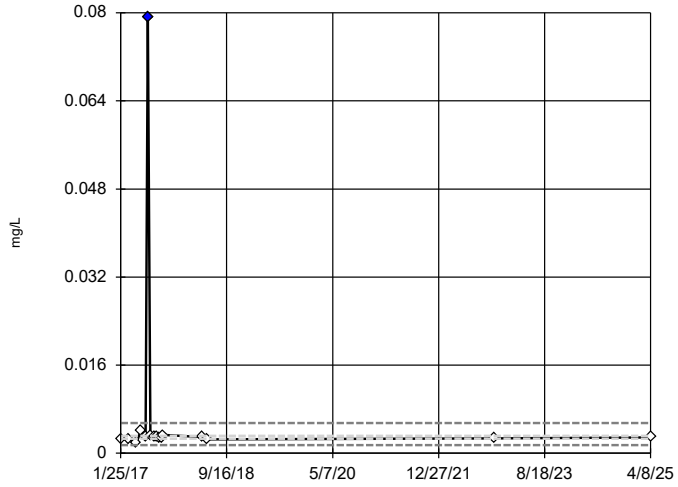
Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-3D



n = 16

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.005506, low cutoff = 0.001495, based on IQR multiplier of 3.

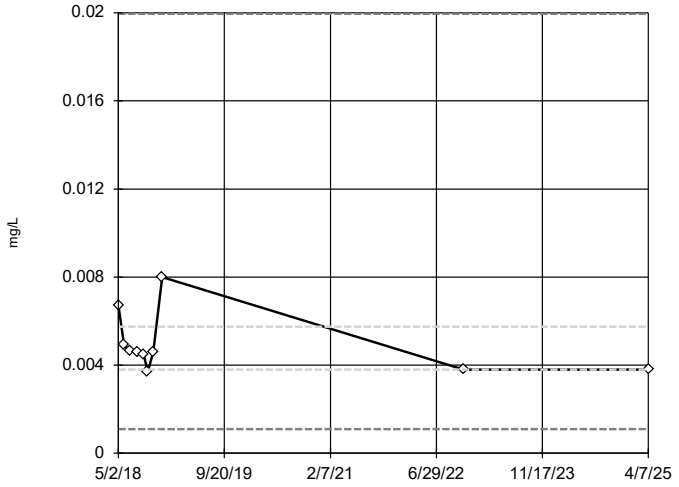
Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-4D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01996, low cutoff = 0.001095, based on IQR multiplier of 3.

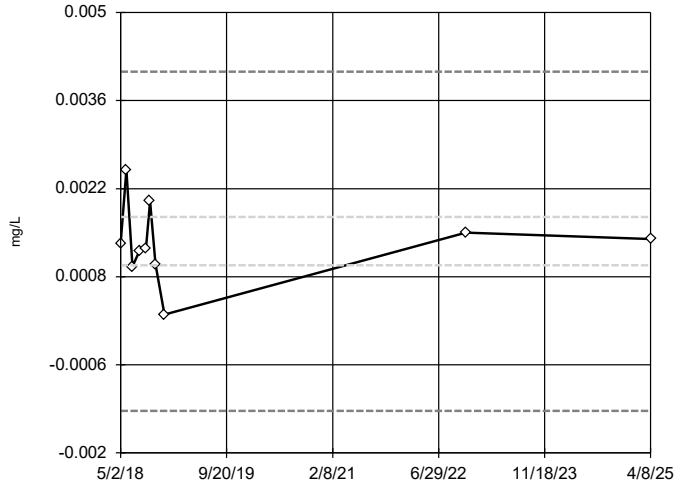
Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-5D



n = 10

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.00406, low cutoff = -0.00133, based on IQR multiplier of 3.

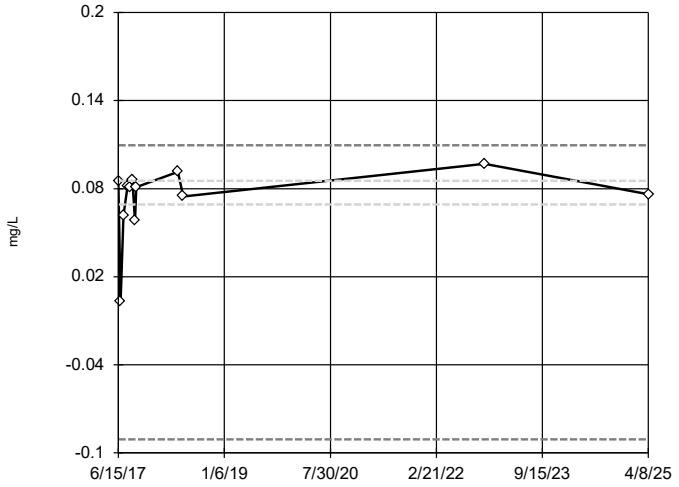
Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1095, low cutoff = -0.09072, based on IQR multiplier of 3.

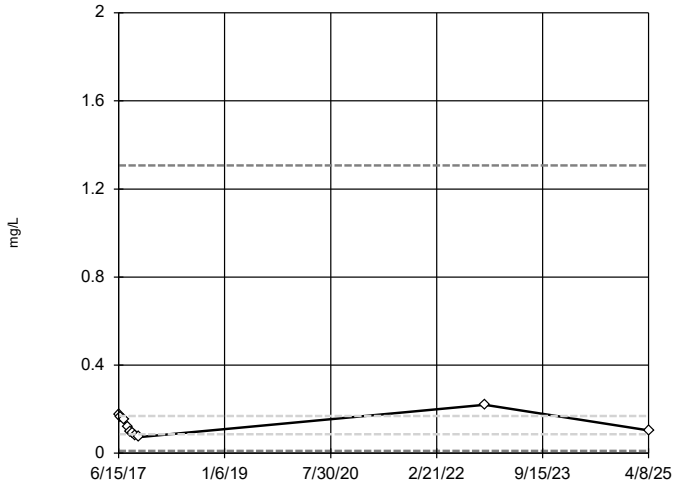
Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.307, low cutoff = 0.01112, based on IQR multiplier of 3.

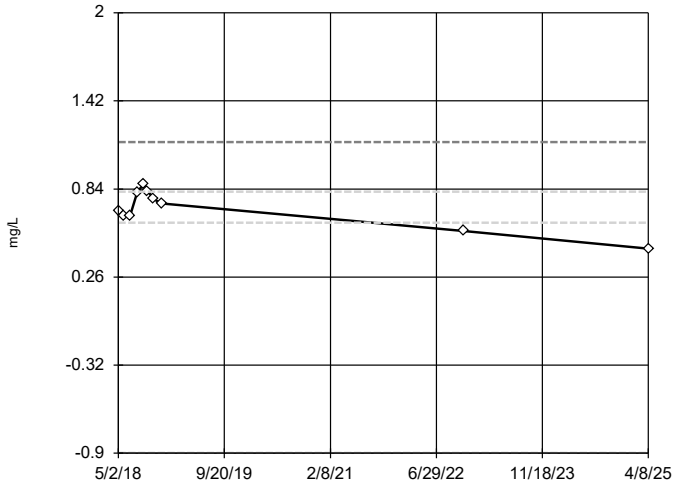
Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-12D



n = 10

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.15, low cutoff = -0.8983, based on IQR multiplier of 3.

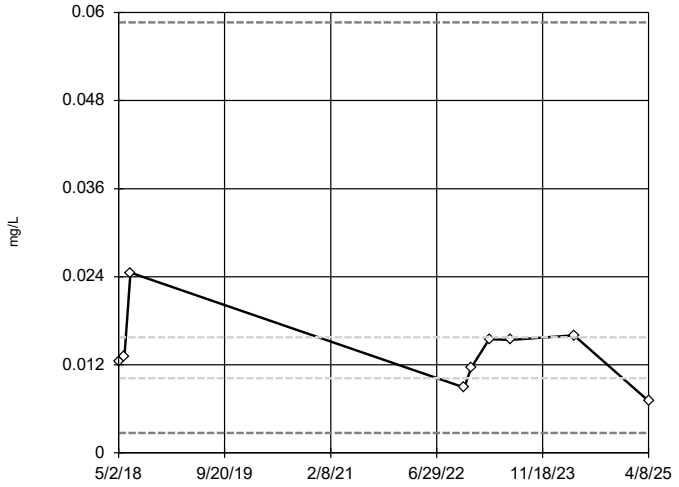
Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-13D



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.05863, low cutoff = 0.002729, based on IQR multiplier of 3.

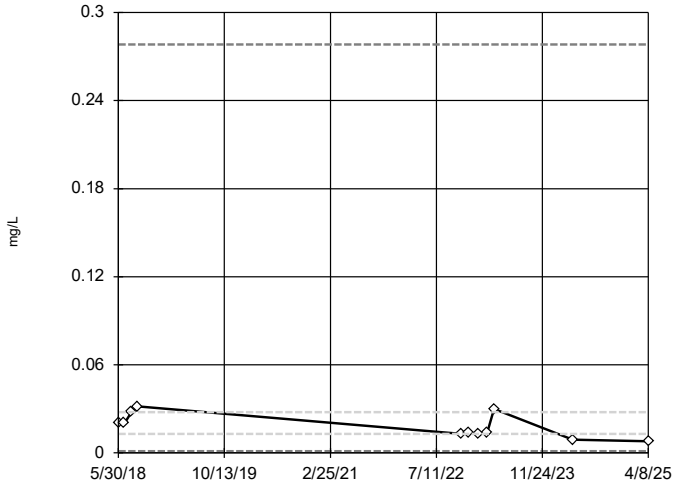
Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2782, low cutoff = 0.001289, based on IQR multiplier of 3.

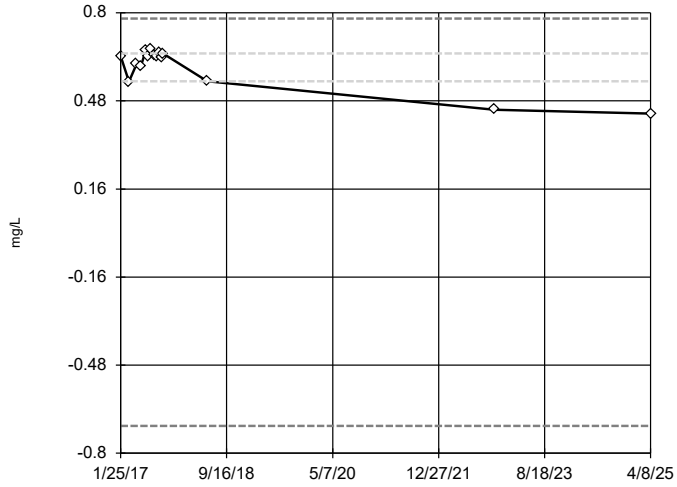
Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

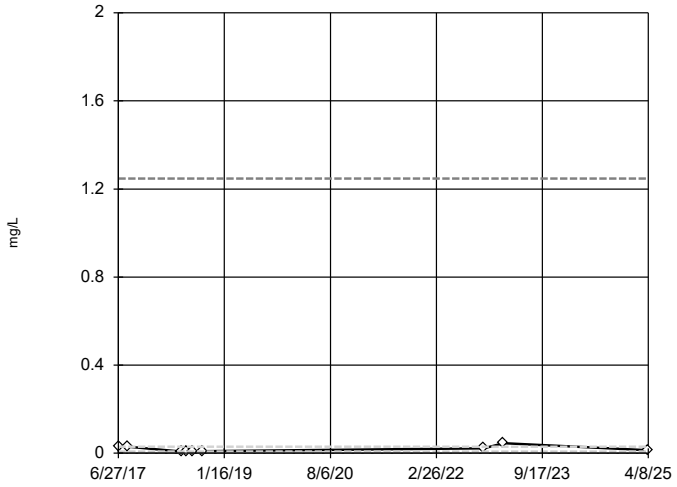
High cutoff = 0.7789, low cutoff = -0.7009, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers
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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

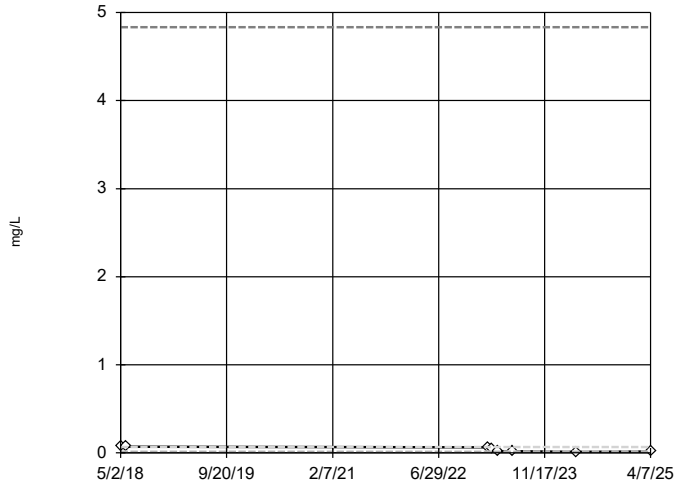
High cutoff = 1.247, low cutoff = 0.0002024, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

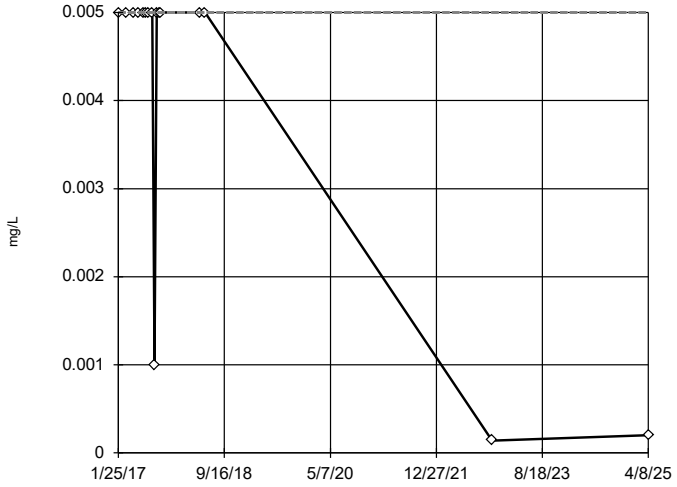
High cutoff = 4.834, low cutoff = 0.0002286, based on IQR multiplier of 3.

Constituent: Selenium Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

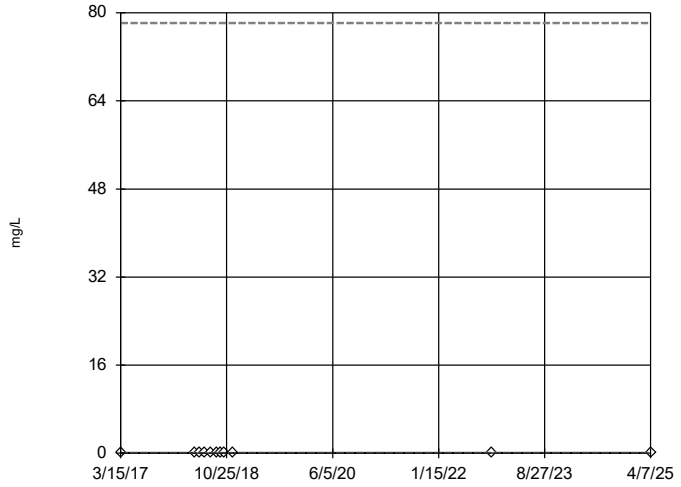
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Selenium Analysis Run 6/17/2025 12:05 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 78.12, low cutoff = 1.3e-8, based on IQR multiplier of 3.

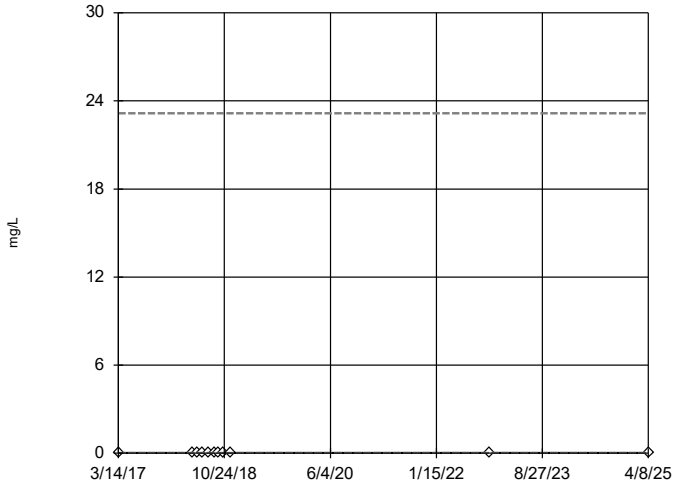
Constituent: Selenium Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 23.15, low cutoff = 6.5e-8, based on IQR multiplier of 3.

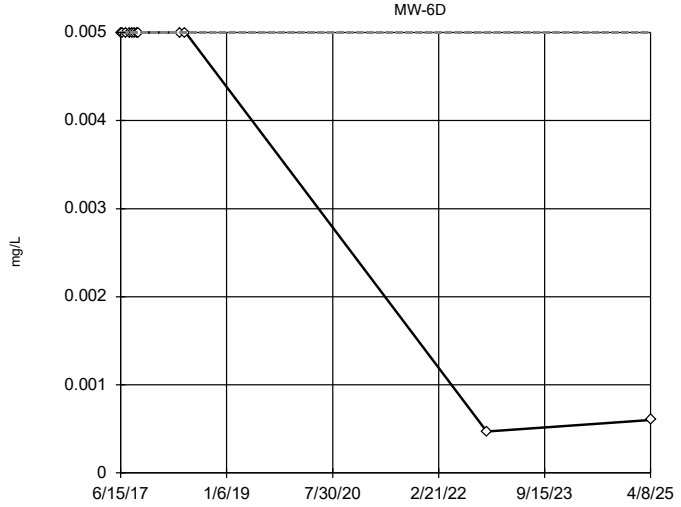
Constituent: Selenium Analysis Run 6/17/2025 12:05 PM View: Outliers

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

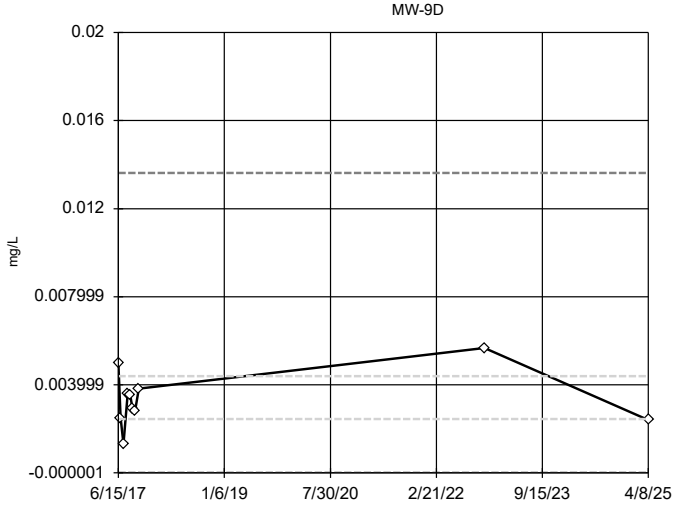
Constituent: Selenium Analysis Run 6/17/2025 12:06 PM View: Outliers

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01362, low cutoff = -8.4e-7, based on IQR multiplier of 3.

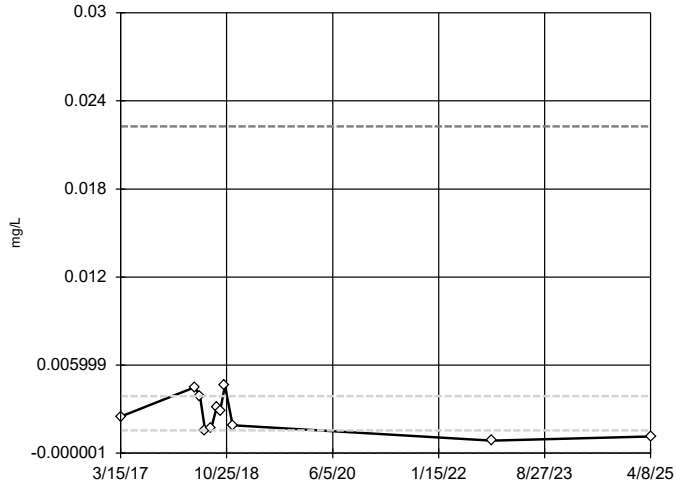
Constituent: Selenium Analysis Run 6/17/2025 12:06 PM View: Outliers

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Tukey's Outlier Screening

MW-12D



n = 11

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02227, low cutoff = -6.1e-7, based on IQR multiplier of 3.

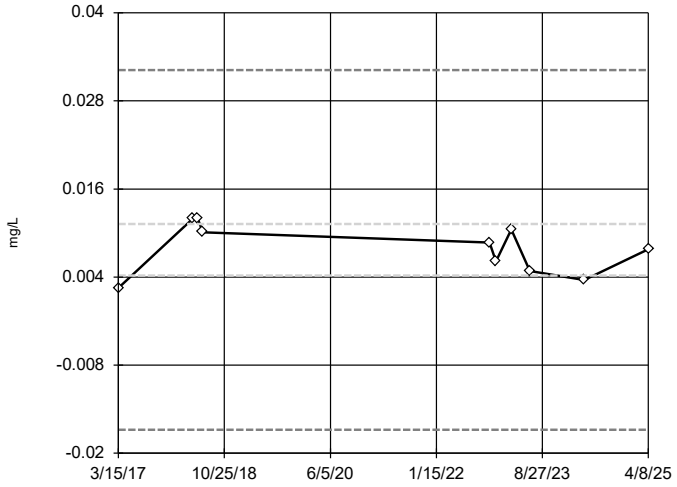
Constituent: Selenium Analysis Run 6/17/2025 12:06 PM View: Outliers

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.03222, low cutoff = -0.01679, based on IQR multiplier of 3.

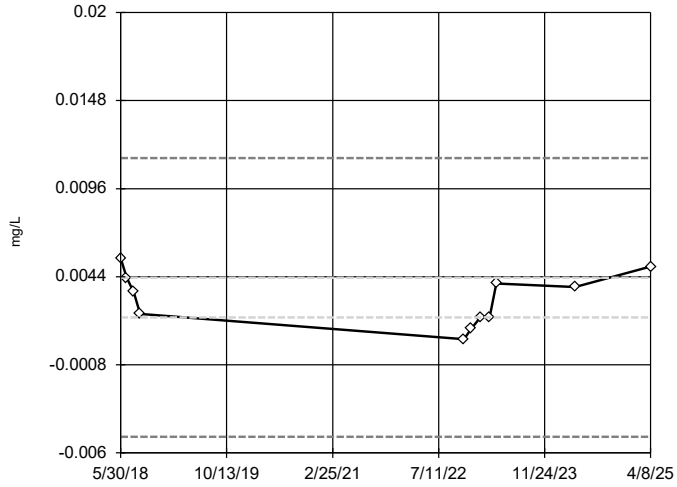
Constituent: Selenium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.0114, low cutoff = -0.00505, based on IQR multiplier of 3.

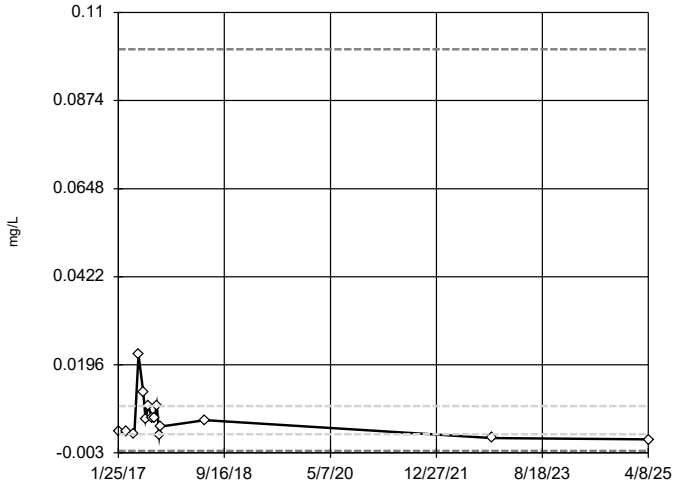
Constituent: Selenium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1006, low cutoff = -0.002447, based on IQR multiplier of 3.

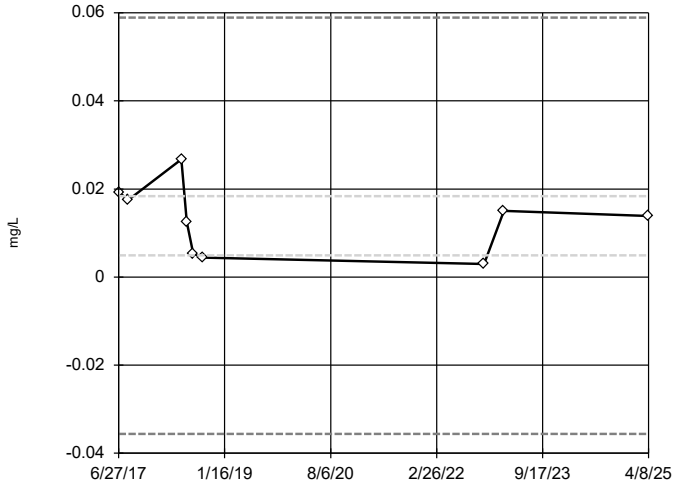
Constituent: Selenium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.05892, low cutoff = -0.03562, based on IQR multiplier of 3.

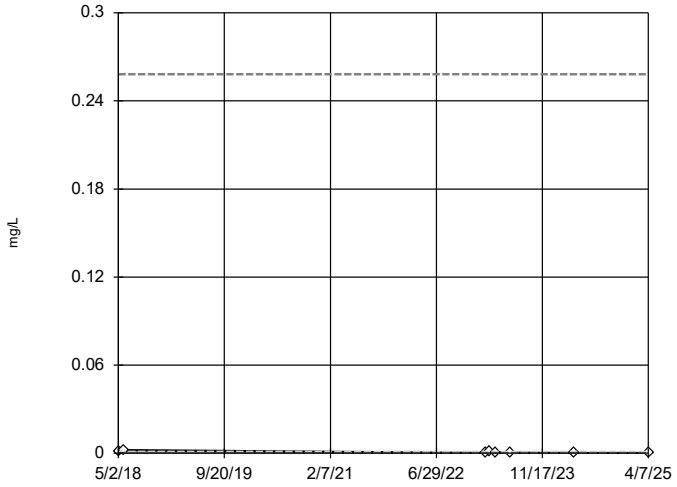
Constituent: Selenium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2583, low cutoff = 6.8e-7, based on IQR multiplier of 3.

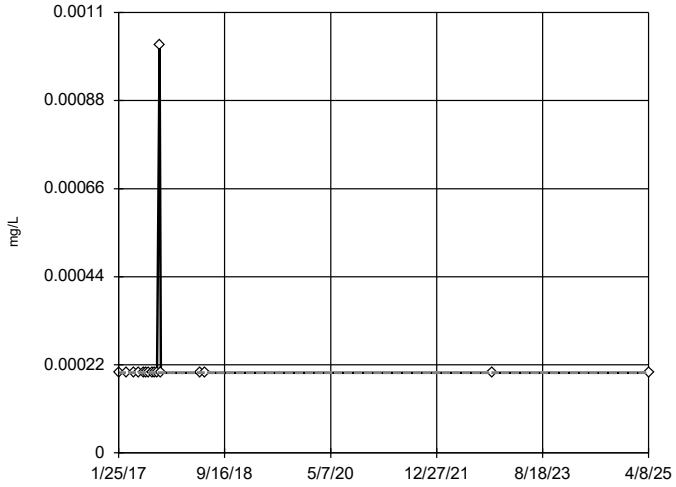
Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-3D



n = 16

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

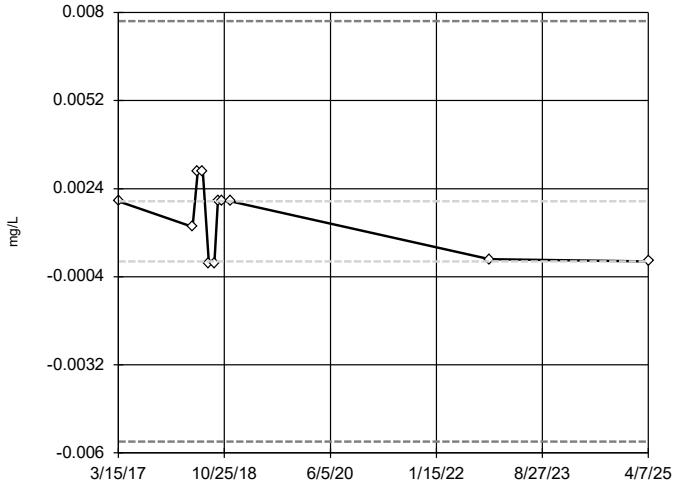
Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-4D



n = 11

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 0.00773, low cutoff = -0.00564, based on IQR multiplier of 3.

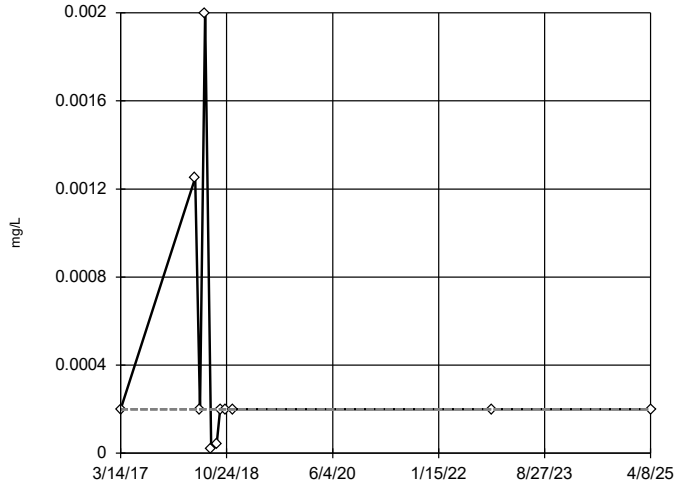
Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-5D



n = 11

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

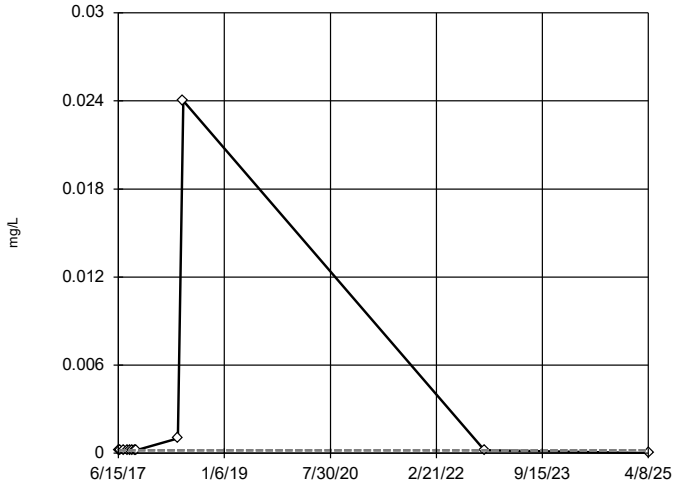
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-6D



n = 12

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

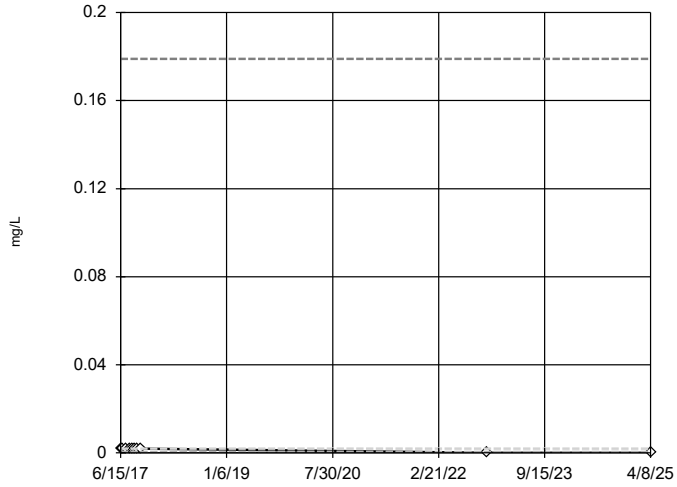
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-9D



n = 10

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

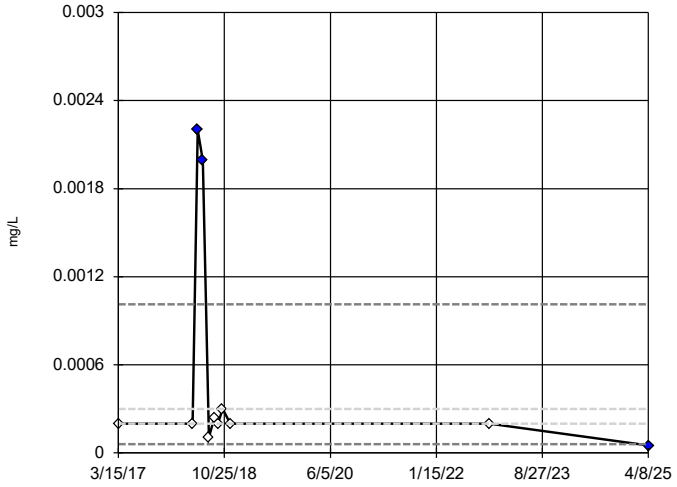
High cutoff = 0.1789, low cutoff = 0.000005, based on IQR multiplier of 3.

Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-12D



n = 11

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

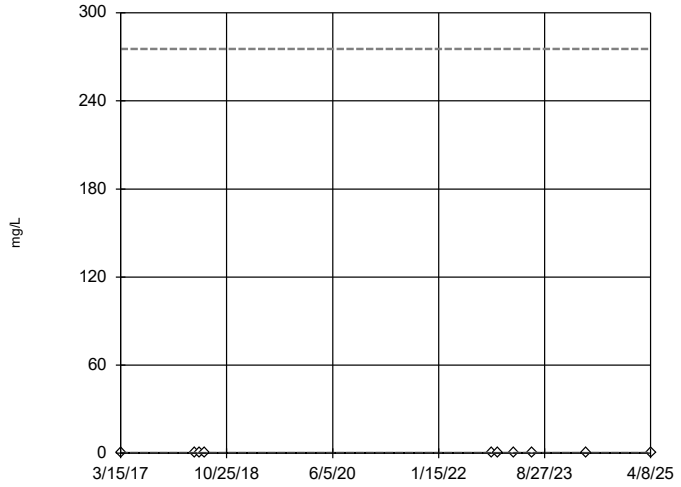
High cutoff = 0.001013, low cutoff = 0.00005926, based on IQR multiplier of 3.

Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-13D



n = 10

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 275.4, low cutoff = 2.8e-10, based on IQR multiplier of 3.

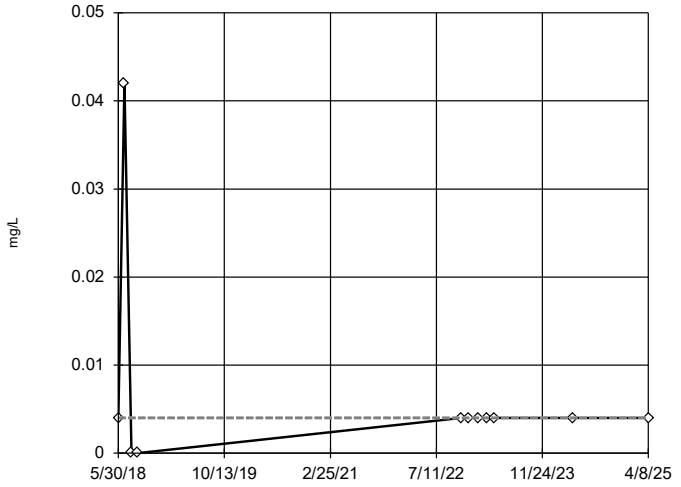
Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-14



n = 11

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

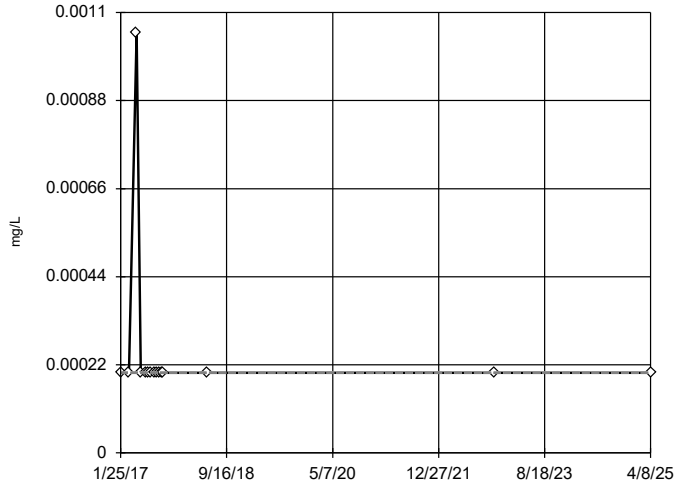
Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-15



n = 15

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

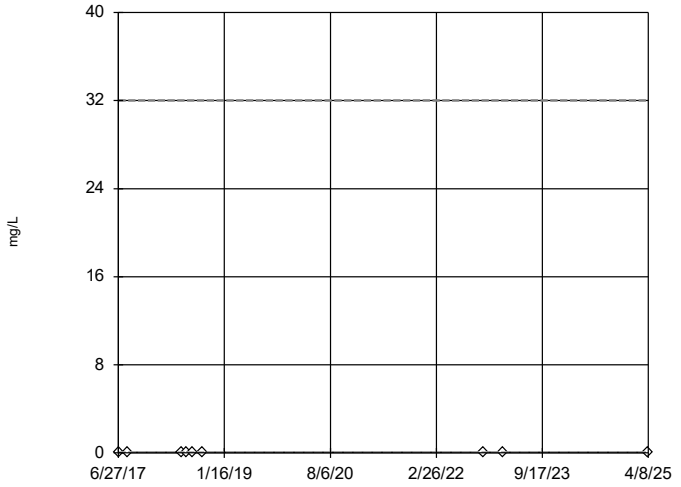
Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-17



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 32, low cutoff = 2.5e-8, based on IQR multiplier of 3.

Constituent: Thallium Analysis Run 6/17/2025 12:06 PM View: Outliers

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

FIGURE D

UTLs

Upper Tolerance Limits Summary Table

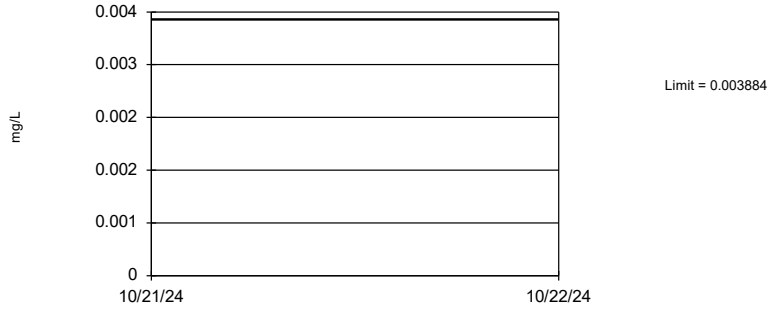
Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/18/2025, 2:30 PM

Constituent	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.003884	58	-8.101	1.259	29.31	Kaplan-Meier	ln(x)	0.05	Inter
Arsenic (mg/L)	0.0599	57	n/a	n/a	5.263	n/a	n/a	0.05373	NP Inter(normality)
Barium (mg/L)	2.77	46	n/a	n/a	0	n/a	n/a	0.09447	NP Inter(normality)
Beryllium (mg/L)	0.00212	57	n/a	n/a	17.54	n/a	n/a	0.05373	NP Inter(normality)
Cadmium (mg/L)	0.000168	34	-10.33	0.7505	17.65	Kaplan-Meier	ln(x)	0.05	Inter
Chromium (mg/L)	0.00339	46	-7.303	0.7743	10.87	None	ln(x)	0.05	Inter
Cobalt (mg/L)	0.01786	57	n/a	n/a	8.772	n/a	n/a	0.05373	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	19.05	57	2.801	0.7708	0	None	sqrt(x)	0.05	Inter
Fluoride (mg/L)	4.39	60	n/a	n/a	1.667	n/a	n/a	0.04607	NP Inter(normality)
Lead (mg/L)	0.008571	57	-7.232	1.219	22.81	Kaplan-Meier	ln(x)	0.05	Inter
Lithium (mg/L)	0.163	46	n/a	n/a	0	n/a	n/a	0.09447	NP Inter(normality)
Mercury (mg/L)	0.00003	57	n/a	n/a	77.19	n/a	n/a	0.05373	NP Inter(NDs)
Molybdenum (mg/L)	0.01	58	n/a	n/a	29.31	n/a	n/a	0.05105	NP Inter(normality)
Selenium (mg/L)	0.00499	46	n/a	n/a	26.09	n/a	n/a	0.09447	NP Inter(normality)
Thallium (mg/L)	0.00162	34	n/a	n/a	76.47	n/a	n/a	0.1748	NP Inter(NDs)

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Tolerance Limit

Interwell Parametric



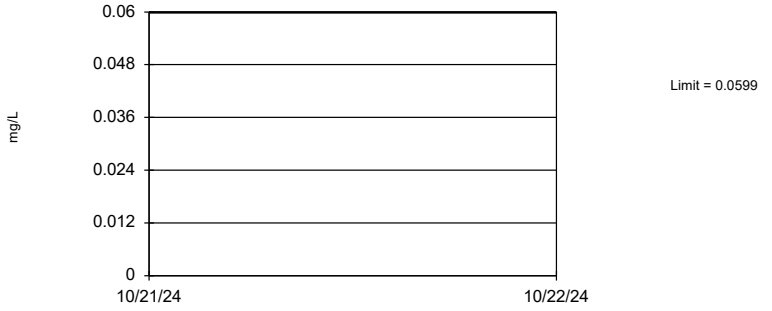
95% coverage. Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-8.101, Std. Dev.=1.259, n=58, 29.31% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9551, critical = 0.944. Report alpha = 0.05.

Constituent: Antimony Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



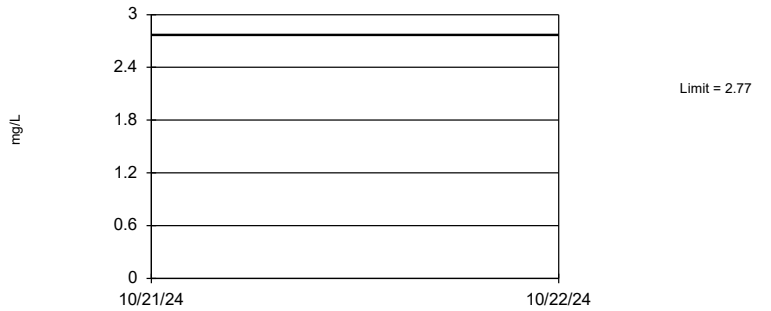
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 57 background values. 5.263% NDs. 92.38% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05373.

Constituent: Arsenic Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



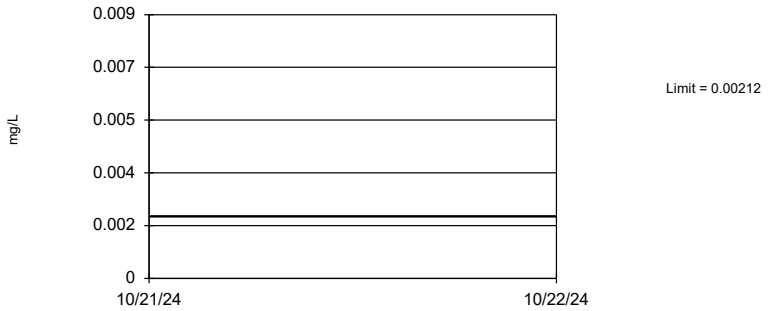
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 46 background values. 90.43% coverage at alpha=0.01; 93.55% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.09447.

Constituent: Barium Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



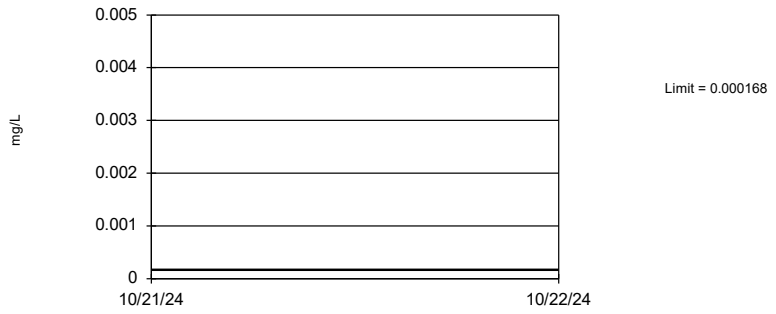
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 57 background values. 17.54% NDs. 92.38% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05373.

Constituent: Beryllium Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Parametric



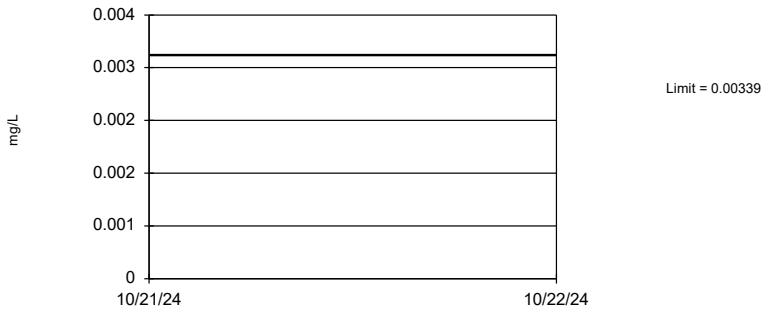
95% coverage. Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-10.33, Std. Dev.=0.7505, n=34, 17.65% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9488, critical = 0.908. Report alpha = 0.05.

Constituent: Cadmium Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Parametric



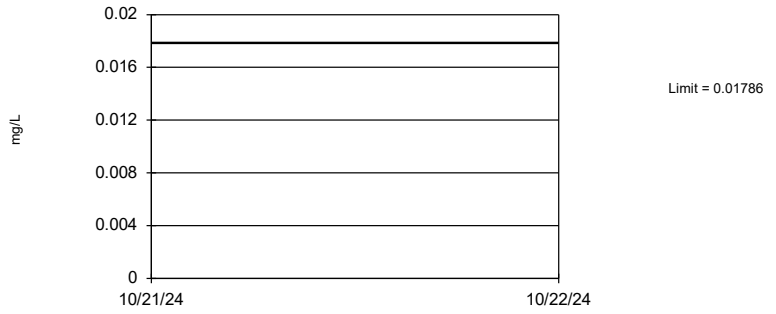
95% coverage. Background Data Summary (based on natural log transformation): Mean=-7.303, Std. Dev.=0.7743, n=46, 10.87% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9536, critical = 0.927. Report alpha = 0.05.

Constituent: Chromium Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



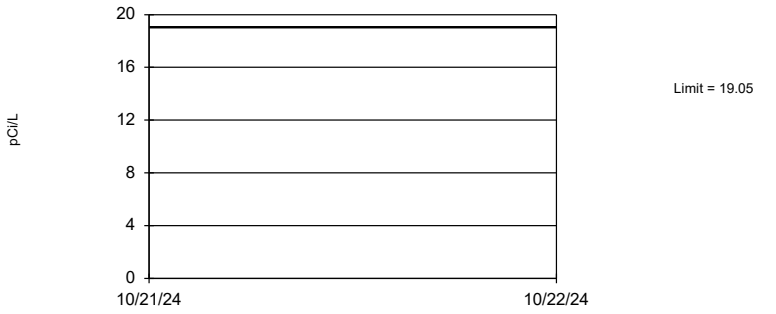
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 57 background values. 8.772% NDs. 92.38% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05373.

Constituent: Cobalt Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Parametric



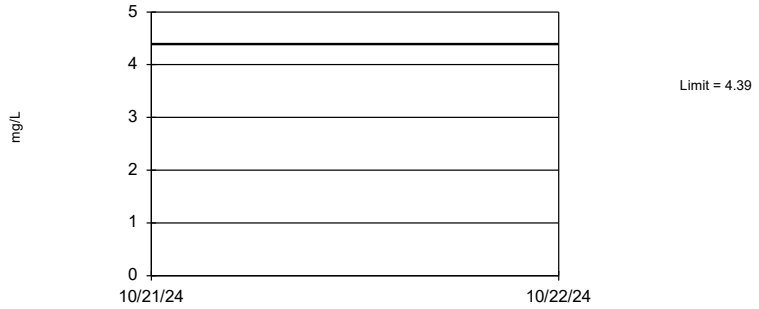
95% coverage. Background Data Summary (based on square root transformation): Mean=2.801, Std. Dev.=0.7708, n=57. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.947, critical = 0.944. Report alpha = 0.05.

Constituent: Combined Radium 226 + 228 Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



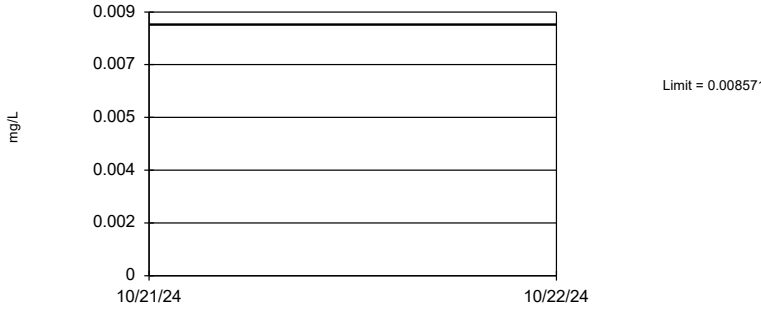
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. 1.667% NDs. 92.77% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 99.02% coverage at alpha=0.5. Report alpha = 0.04607.

Constituent: Fluoride Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Parametric



95% coverage. Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-7.232, Std. Dev.=1.219, n=57, 22.81% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9454, critical = 0.944. Report alpha = 0.05.

Constituent: Lead Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 46 background values. 90.43% coverage at alpha=0.01; 93.55% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.09447.

Constituent: Lithium Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 57 background values. 77.19% NDs. 92.38% coverage at alpha=0.01; 94.73% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05373.

Constituent: Mercury Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 58 background values. 29.31% NDs. 92.38% coverage at alpha=0.01; 95.12% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.05105.

Constituent: Molybdenum Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



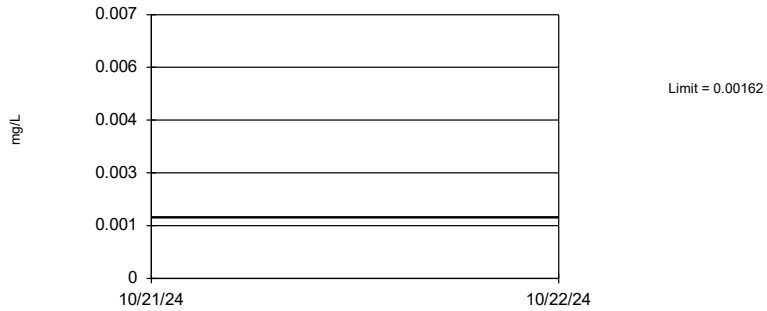
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 46 background values. 26.09% NDs. 90.43% coverage at alpha=0.01; 93.55% coverage at alpha=0.05; 98.63% coverage at alpha=0.5. Report alpha = 0.09447.

Constituent: Selenium Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 50%. Limit is highest of 34 background values. 76.47% NDs. 87.3% coverage at alpha=0.01; 91.6% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1748.

Constituent: Thallium Analysis Run 6/18/2025 2:29 PM View: Upper Tolerance Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

FIGURE E

GWPS

NORTHEASTERN LF GWPS				
Constituent Name	**MCL**	**CCR- Rule Specified Level**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006		0.0039	0.006
Arsenic, Total (mg/L)	0.01		0.06	0.06
Barium, Total (mg/L)	2		2.77	2.77
Beryllium, Total (mg/L)	0.004		0.0021	0.004
Cadmium, Total (mg/L)	0.005		0.00017	0.005
Chromium, Total (mg/L)	0.1		0.0034	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.018	0.018
Combined Radium, Total (pCi/L)	5		19.05	19.05
Fluoride, Total (mg/L)	4		4.39	4.39
Lead, Total (mg/L)	n/a	0.015	0.0086	0.015
Lithium, Total (mg/L)	n/a	0.04	0.16	0.16
Mercury, Total (mg/L)	0.002		0.00003	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.005	0.05
Thallium, Total (mg/L)	0.002		0.0016	0.002

**Grey cell indicates Background Limit is higher than MCL*

**GWPS = Groundwater Protection Standard*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residuals*

FIGURE F
Confidence Intervals

Confidence Intervals Summary Table - Significant Results

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/17/2025, 5:01 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Lithium (mg/L)	**MW-14**	**0.3595**	**0.2483**	**0.16**	**Yes**	**12**	**0.3039**	**0.07088**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**MW-2D**	**0.5638**	**0.4672**	**0.1**	**Yes**	**8**	**0.5155**	**0.0456**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**MW-12D**	**0.8231**	**0.5913**	**0.1**	**Yes**	**10**	**0.7072**	**0.1299**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	**MW-15**	**0.656**	**0.55**	**0.1**	**Yes**	**15**	**0.6036**	**0.07517**	**0**	**None**	**No**	**0.01**	**NP (normality)**

Confidence Intervals Summary Table - All Results

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/17/2025, 5:01 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	MW-2D	0.00212	0.00038	0.006	No	8	0.0008863	0.0007133	0	None	No	0.004	NP (normality)
Antimony (mg/L)	MW-3D	0.005	0.00144	0.006	No	16	0.00395	0.001917	75	None	No	0.01	NP (NDs)
Antimony (mg/L)	MW-4D	0.0003664	0.00004896	0.006	No	11	0.0006101	0.001157	36.36	Kaplan-Meier	ln(x)	0.01	Param.
Antimony (mg/L)	MW-5D	0.0005352	0.00006114	0.006	No	11	0.0006868	0.001018	27.27	Kaplan-Meier	ln(x)	0.01	Param.
Antimony (mg/L)	MW-6D	0.005	0.00013	0.006	No	12	0.002939	0.002189	50	None	No	0.01	NP (normality)
Antimony (mg/L)	MW-9D	0.005	0.00031	0.006	No	10	0.004059	0.001984	80	None	No	0.011	NP (NDs)
Antimony (mg/L)	MW-12D	0.005	0.00007	0.006	No	11	0.001958	0.002414	36.36	None	No	0.006	NP (normality)
Antimony (mg/L)	MW-13D	0.005	0.00021	0.006	No	10	0.002178	0.00243	40	None	No	0.011	NP (normality)
Antimony (mg/L)	MW-14	0.001563	0.0007658	0.006	No	11	0.001327	0.0005719	18.18	Kaplan-Meier	No	0.01	Param.
Antimony (mg/L)	MW-15	0.005	0.00099	0.006	No	15	0.003139	0.002104	53.33	None	No	0.01	NP (NDs)
Antimony (mg/L)	MW-17	0.001431	0.0002085	0.006	No	9	0.001807	0.001963	22.22	Kaplan-Meier	x^(1/3)	0.01	Param.
Arsenic (mg/L)	MW-2D	0.03458	0.01964	0.06	No	8	0.02711	0.007047	0	None	No	0.01	Param.
Arsenic (mg/L)	MW-3D	0.004289	0.001527	0.06	No	16	0.004349	0.002558	43.75	Kaplan-Meier	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MW-4D	0.002679	0.001352	0.06	No	11	0.002878	0.00161	18.18	Kaplan-Meier	ln(x)	0.01	Param.
Arsenic (mg/L)	MW-5D	0.005	0.00072	0.06	No	11	0.002098	0.001876	27.27	None	No	0.006	NP (normality)
Arsenic (mg/L)	MW-6D	0.005	0.00119	0.06	No	12	0.002541	0.001527	25	None	No	0.01	NP (normality)
Arsenic (mg/L)	MW-9D	0.005	0.0031	0.06	No	10	0.004371	0.00145	80	None	No	0.011	NP (NDs)
Arsenic (mg/L)	MW-12D	0.004307	0.001577	0.06	No	11	0.003409	0.001766	18.18	Kaplan-Meier	No	0.01	Param.
Arsenic (mg/L)	MW-13D	0.001862	0.0008166	0.06	No	10	0.002447	0.001846	30	Kaplan-Meier	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MW-14	0.002284	0.0006827	0.06	No	11	0.001799	0.00099	18.18	Kaplan-Meier	No	0.01	Param.
Arsenic (mg/L)	MW-15	0.005814	0.002686	0.06	No	15	0.004484	0.002963	13.33	None	x^(1/3)	0.01	Param.
Arsenic (mg/L)	MW-17	0.01203	0.0003912	0.06	No	9	0.007109	0.007455	22.22	Kaplan-Meier	sqrt(x)	0.01	Param.
Barium (mg/L)	MW-2D	0.03557	0.01055	2.77	No	8	0.02306	0.0118	0	None	No	0.01	Param.
Barium (mg/L)	MW-3D	0.281	0.1	2.77	No	16	0.2285	0.2372	0	None	No	0.01	NP (normality)
Barium (mg/L)	MW-4D	0.188	0.1507	2.77	No	11	0.1695	0.02282	0	None	sqrt(x)	0.01	Param.
Barium (mg/L)	MW-5D	0.1313	0.1064	2.77	No	11	0.1188	0.01495	0	None	No	0.01	Param.
Barium (mg/L)	MW-6D	0.1304	0.07829	2.77	No	12	0.1043	0.03319	0	None	No	0.01	Param.
Barium (mg/L)	MW-9D	0.3195	0.07831	2.77	No	10	0.1989	0.1351	0	None	No	0.01	Param.
Barium (mg/L)	MW-12D	0.08218	0.03562	2.77	No	11	0.0589	0.02794	0	None	No	0.01	Param.
Barium (mg/L)	MW-13D	0.1064	0.04717	2.77	No	10	0.07677	0.03318	0	None	No	0.01	Param.
Barium (mg/L)	MW-14	0.854	0.153	2.77	No	11	0.3765	0.2795	0	None	No	0.006	NP (normality)
Barium (mg/L)	MW-15	0.1391	0.06567	2.77	No	15	0.1059	0.06093	0	None	sqrt(x)	0.01	Param.
Barium (mg/L)	MW-17	0.975	0.0367	2.77	No	9	0.3102	0.3695	0	None	No	0.002	NP (normality)
Beryllium (mg/L)	MW-2D	0.00028	0.000027	0.004	No	8	0.00008087	0.00008229	62.5	None	No	0.004	NP (NDs)
Beryllium (mg/L)	MW-3D	0.0001865	0.00005202	0.004	No	16	0.0003869	0.0004231	25	Kaplan-Meier	ln(x)	0.01	Param.
Beryllium (mg/L)	MW-4D	0.0005	0.00002	0.004	No	11	0.0002584	0.000234	45.45	None	No	0.006	NP (normality)
Beryllium (mg/L)	MW-5D	0.0005	0.000047	0.004	No	11	0.0002648	0.0002258	45.45	None	No	0.006	NP (normality)
Beryllium (mg/L)	MW-6D	0.0003032	0.0001141	0.004	No	12	0.0002087	0.0001205	8.333	None	No	0.01	Param.
Beryllium (mg/L)	MW-9D	0.0003723	0.0001464	0.004	No	10	0.00028	0.0001158	20	Kaplan-Meier	No	0.01	Param.
Beryllium (mg/L)	MW-12D	0.0001	0.00005528	0.004	No	11	0.0001445	0.00008683	36.36	Kaplan-Meier	ln(x)	0.01	Param.
Beryllium (mg/L)	MW-13D	0.0001606	0.00004904	0.004	No	10	0.0002914	0.0003779	20	Kaplan-Meier	ln(x)	0.01	Param.
Beryllium (mg/L)	MW-14	0.001	0.000029	0.004	No	11	0.000445	0.0004503	36.36	None	No	0.006	NP (normality)
Beryllium (mg/L)	MW-15	0.001	0.00003	0.004	No	15	0.0004625	0.0004964	33.33	None	No	0.01	NP (normality)
Beryllium (mg/L)	MW-17	0.001621	0.000002944	0.004	No	9	0.0008706	0.001117	33.33	Kaplan-Meier	sqrt(x)	0.01	Param.
Cadmium (mg/L)	MW-2D	0.0006368	0.0001662	0.005	No	8	0.0004049	0.0003605	0	None	ln(x)	0.01	Param.
Cadmium (mg/L)	MW-3D	0.0003997	0.0001731	0.005	No	16	0.0002864	0.0001741	12.5	None	No	0.01	Param.
Cadmium (mg/L)	MW-4D	0.0003243	0.00005149	0.005	No	11	0.0004495	0.0004403	27.27	Kaplan-Meier	ln(x)	0.01	Param.
Cadmium (mg/L)	MW-5D	0.0001682	0.00004484	0.005	No	11	0.0003603	0.0004214	27.27	Kaplan-Meier	ln(x)	0.01	Param.
Cadmium (mg/L)	MW-6D	0.0006493	0.0002769	0.005	No	12	0.0004631	0.0002373	8.333	None	No	0.01	Param.
Cadmium (mg/L)	MW-9D	0.00115	0.0002154	0.005	No	10	0.000695	0.0006519	10	None	sqrt(x)	0.01	Param.
Cadmium (mg/L)	MW-12D	0.000391	0.00008942	0.005	No	11	0.0004032	0.0003583	18.18	Kaplan-Meier	sqrt(x)	0.01	Param.
Cadmium (mg/L)	MW-13D	0.001	0.000109	0.005	No	10	0.0004032	0.0004153	30	None	No	0.011	NP (normality)
Cadmium (mg/L)	MW-14	0.0004	0.000163	0.005	No	11	0.0008135	0.001886	27.27	None	No	0.006	NP (normality)
Cadmium (mg/L)	MW-15	0.001	0.00009	0.005	No	15	0.0006412	0.0004215	53.33	None	No	0.01	NP (NDs)
Cadmium (mg/L)	MW-17	0.004149	0	0.005	No	9	0.002196	0.002188	22.22	Kaplan-Meier	No	0.01	Param.

Confidence Intervals Summary Table - All Results

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/17/2025, 5:01 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Chromium (mg/L)	MW-2D	0.006081	0.0005112	0.1	No	8	0.003464	0.005173	12.5	None	ln(x)	0.01	Param.
Chromium (mg/L)	MW-3D	0.003869	0.0007222	0.1	No	16	0.002952	0.004379	6.25	None	x^(1/3)	0.01	Param.
Chromium (mg/L)	MW-4D	0.002346	0.0005095	0.1	No	11	0.01038	0.01962	18.18	Kaplan-Meier	ln(x)	0.01	Param.
Chromium (mg/L)	MW-5D	0.0008675	0.0004333	0.1	No	11	0.0006601	0.0003178	9.091	None	x^(1/3)	0.01	Param.
Chromium (mg/L)	MW-6D	0.008018	0.00271	0.1	No	12	0.005364	0.003382	0	None	No	0.01	Param.
Chromium (mg/L)	MW-9D	0.01456	0.003502	0.1	No	10	0.00903	0.006196	0	None	No	0.01	Param.
Chromium (mg/L)	MW-12D	0.002895	0.0006613	0.1	No	11	0.001994	0.002084	18.18	Kaplan-Meier	x^(1/3)	0.01	Param.
Chromium (mg/L)	MW-13D	0.00297	0.0009224	0.1	No	10	0.001946	0.001147	0	None	No	0.01	Param.
Chromium (mg/L)	MW-14	0.01697	0.0005189	0.1	No	11	0.01108	0.01206	36.36	Kaplan-Meier	sqrt(x)	0.01	Param.
Chromium (mg/L)	MW-15	0.003558	0.0008011	0.1	No	15	0.002433	0.002434	6.667	None	sqrt(x)	0.01	Param.
Chromium (mg/L)	MW-17	0.09146	0.0002	0.1	No	9	0.02591	0.03536	44.44	None	No	0.002	NP (normality)
Cobalt (mg/L)	MW-2D	0.00212	0.000289	0.018	No	8	0.0005856	0.0006239	0	None	No	0.004	NP (normality)
Cobalt (mg/L)	MW-3D	0.002341	0.0009042	0.018	No	16	0.001724	0.001255	12.5	None	sqrt(x)	0.01	Param.
Cobalt (mg/L)	MW-4D	0.002871	0.0006924	0.018	No	11	0.001839	0.001518	9.091	None	sqrt(x)	0.01	Param.
Cobalt (mg/L)	MW-5D	0.001083	0.0002383	0.018	No	11	0.0007055	0.0007013	9.091	None	x^(1/3)	0.01	Param.
Cobalt (mg/L)	MW-6D	0.003667	0.001716	0.018	No	12	0.002692	0.001243	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-9D	0.01126	0.004236	0.018	No	10	0.007749	0.003937	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-12D	0.002237	0.0005751	0.018	No	11	0.001406	0.0009975	9.091	None	No	0.01	Param.
Cobalt (mg/L)	MW-13D	0.003717	0.001237	0.018	No	10	0.002477	0.00139	10	None	No	0.01	Param.
Cobalt (mg/L)	MW-14	0.003745	0.001518	0.018	No	11	0.002632	0.001336	0	None	No	0.01	Param.
Cobalt (mg/L)	MW-15	0.002256	0.0007798	0.018	No	15	0.001518	0.001089	13.33	None	No	0.01	Param.
Cobalt (mg/L)	MW-17	0.03152	0.0008144	0.018	No	9	0.01591	0.01912	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-3D	2.443	1.566	19.05	No	14	2.949	3.332	0	None	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MW-4D	2.756	1.076	19.05	No	9	1.911	0.963	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-5D	5.319	2.393	19.05	No	9	3.274	1.138	0	None	No	0.002	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MW-6D	1.788	1.125	19.05	No	10	1.456	0.3718	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-9D	2.255	0.8134	19.05	No	8	1.534	0.6801	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-12D	3.235	0.9779	19.05	No	9	2.099	1.268	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW-15	1.188	0.5459	19.05	No	13	0.8672	0.4321	0	None	No	0.01	Param.
Fluoride (mg/L)	MW-2D	1.8	1.391	4.39	No	11	1.595	0.2458	0	None	No	0.01	Param.
Fluoride (mg/L)	MW-3D	0.8342	0.7397	4.39	No	30	0.8513	0.1241	23.33	Kaplan-Meier	No	0.01	Param.
Fluoride (mg/L)	MW-4D	1	0.26	4.39	No	23	0.5037	0.3391	30.43	None	No	0.01	NP (normality)
Fluoride (mg/L)	MW-5D	0.6913	0.537	4.39	No	22	0.6142	0.1437	0	None	No	0.01	Param.
Fluoride (mg/L)	MW-6D	0.8912	0.7363	4.39	No	27	0.8138	0.1624	7.407	None	No	0.01	Param.
Fluoride (mg/L)	MW-9D	1.043	0.6816	4.39	No	21	0.8909	0.3803	9.524	None	x^(1/3)	0.01	Param.
Fluoride (mg/L)	MW-12D	2.296	1.889	4.39	No	23	2.093	0.389	0	None	No	0.01	Param.
Fluoride (mg/L)	MW-13D	1	0.34	4.39	No	12	0.5005	0.2379	16.67	None	No	0.01	NP (normality)
Fluoride (mg/L)	MW-14	4.726	2.985	4.39	No	10	3.856	0.9754	0	None	No	0.01	Param.
Fluoride (mg/L)	MW-15	1.854	1.516	4.39	No	29	1.685	0.3686	0	None	No	0.01	Param.
Lead (mg/L)	MW-2D	0.00511	0.001077	0.015	No	8	0.0031	0.002949	12.5	None	ln(x)	0.01	Param.
Lead (mg/L)	MW-3D	0.005	0.00083	0.015	No	16	0.003501	0.001887	56.25	None	No	0.01	NP (NDs)
Lead (mg/L)	MW-4D	0.001717	0.0004212	0.015	No	11	0.002176	0.001955	27.27	Kaplan-Meier	sqrt(x)	0.01	Param.
Lead (mg/L)	MW-5D	0.0009793	0.0004042	0.015	No	11	0.001499	0.001766	18.18	Kaplan-Meier	ln(x)	0.01	Param.
Lead (mg/L)	MW-6D	0.004418	0.001808	0.015	No	12	0.003113	0.001663	0	None	No	0.01	Param.
Lead (mg/L)	MW-9D	0.009502	0.002612	0.015	No	10	0.006057	0.003861	0	None	No	0.01	Param.
Lead (mg/L)	MW-12D	0.004971	0.002197	0.015	No	11	0.003998	0.001715	18.18	Kaplan-Meier	No	0.01	Param.
Lead (mg/L)	MW-13D	0.00238	0.0008568	0.015	No	10	0.00265	0.001816	30	Kaplan-Meier	sqrt(x)	0.01	Param.
Lead (mg/L)	MW-14	0.003411	0	0.015	No	11	0.003372	0.00234	36.36	Kaplan-Meier	No	0.01	Param.
Lead (mg/L)	MW-15	0.00518	0.00136	0.015	No	15	0.003449	0.001857	40	None	No	0.01	NP (normality)
Lead (mg/L)	MW-17	0.04112	0.00002381	0.015	No	9	0.02238	0.02816	22.22	Kaplan-Meier	sqrt(x)	0.01	Param.
Lithium (mg/L)	MW-2D	0.001572	0.0007806	0.16	No	8	0.001176	0.0003733	0	None	No	0.01	Param.
Lithium (mg/L)	MW-3D	0.0165	0.01427	0.16	No	17	0.01539	0.001781	0	None	No	0.01	Param.
Lithium (mg/L)	MW-4D	0.0045	0.003034	0.16	No	11	0.003767	0.0008796	0	None	No	0.01	Param.
Lithium (mg/L)	MW-5D	0.01187	0.01025	0.16	No	11	0.01106	0.0009741	0	None	No	0.01	Param.
Lithium (mg/L)	MW-6D	0.02143	0.01699	0.16	No	13	0.01921	0.002991	0	None	No	0.01	Param.

Confidence Intervals Summary Table - All Results

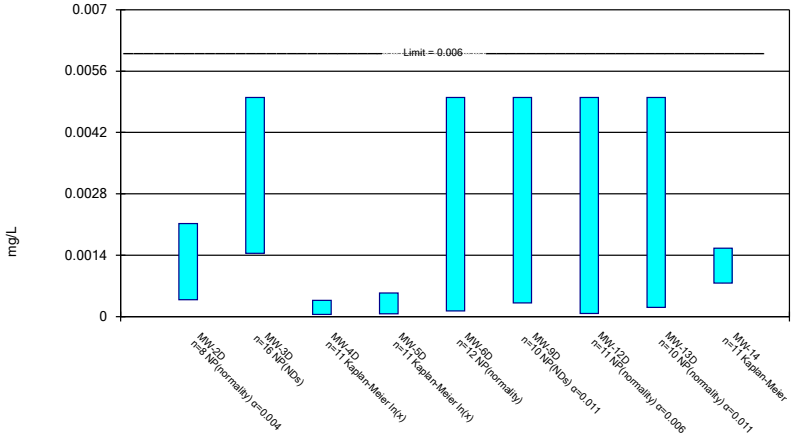
Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/17/2025, 5:01 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Lithium (mg/L)	MW-9D	0.02911	0.01804	0.16	No	10	0.02357	0.006206	0	None	No	0.01	Param.
Lithium (mg/L)	MW-12D	0.006127	0.003558	0.16	No	11	0.004843	0.001541	0	None	No	0.01	Param.
Lithium (mg/L)	MW-13D	0.0301	0.02125	0.16	No	10	0.02568	0.004955	0	None	No	0.01	Param.
Lithium (mg/L)	**MW-14**	**0.3595**	**0.2483**	**0.16**	**Yes**	**12**	**0.3039**	**0.07088**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium (mg/L)	MW-15	0.009711	0.007239	0.16	No	16	0.008475	0.0019	0	None	No	0.01	Param.
Lithium (mg/L)	MW-17	0.04646	0.01165	0.16	No	9	0.02997	0.02485	0	None	ln(x)	0.01	Param.
Mercury (mg/L)	MW-2D	0.000041710	0.00002154	0.002	No	8	0.00003163	0.000009516	0	None	No	0.01	Param.
Mercury (mg/L)	MW-3D	0.000025	0.00001	0.002	No	16	0.00002081	0.000007731	75	None	No	0.01	NP (NDs)
Mercury (mg/L)	MW-4D	0.000005	0.000005	0.002	No	11	0.000005182	6.0e-7	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	MW-5D	0.000005	0.000005	0.002	No	11	0.000005091	3.0e-7	90.91	None	No	0.006	NP (NDs)
Mercury (mg/L)	MW-6D	0.000016	0.000005	0.002	No	12	0.00001633	0.00003129	58.33	None	No	0.01	NP (NDs)
Mercury (mg/L)	MW-9D	0.000015710	0.00000636	0.002	No	10	0.0000118	0.000005493	30	Kaplan-Meier	No	0.01	Param.
Mercury (mg/L)	MW-12D	0.000012	0.000005	0.002	No	11	0.000006727	0.00000297	63.64	Kaplan-Meier	No	0.006	NP (NDs)
Mercury (mg/L)	MW-13D	0.000005	0.000005	0.002	No	10	0.0000047	9.5e-7	90	Kaplan-Meier	No	0.011	NP (NDs)
Mercury (mg/L)	MW-14	0.000006756	0.000002466	0.002	No	10	0.0000056	0.000002271	20	Kaplan-Meier	No	0.01	Param.
Mercury (mg/L)	MW-15	0.000025	0.000008	0.002	No	15	0.00001733	0.000008024	26.67	None	No	0.01	NP (normality)
Mercury (mg/L)	MW-17	0.000144	0.000005	0.002	No	8	0.00003762	0.00005368	62.5	None	No	0.004	NP (NDs)
Molybdenum (mg/L)	**MW-2D**	**0.5638**	**0.4672**	**0.1**	**Yes**	**8**	**0.5155**	**0.0456**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	MW-3D	0.00321	0.00255	0.1	No	15	0.00288	0.0004868	13.33	None	No	0.01	Param.
Molybdenum (mg/L)	MW-4D	0.005971	0.003823	0.1	No	10	0.004925	0.001385	0	None	ln(x)	0.01	Param.
Molybdenum (mg/L)	MW-5D	0.001882	0.0007859	0.1	No	10	0.001334	0.0006143	10	None	No	0.01	Param.
Molybdenum (mg/L)	MW-6D	0.08874	0.0627	0.1	No	12	0.07309	0.02474	0	None	x^2	0.01	Param.
Molybdenum (mg/L)	MW-9D	0.1702	0.08482	0.1	No	10	0.1275	0.04786	0	None	No	0.01	Param.
Molybdenum (mg/L)	**MW-12D**	**0.8231**	**0.5913**	**0.1**	**Yes**	**10**	**0.7072**	**0.1299**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (mg/L)	MW-13D	0.01869	0.008979	0.1	No	9	0.01383	0.005029	0	None	No	0.01	Param.
Molybdenum (mg/L)	MW-14	0.02528	0.01132	0.1	No	11	0.0183	0.008377	0	None	No	0.01	Param.
Molybdenum (mg/L)	**MW-15**	**0.656**	**0.55**	**0.1**	**Yes**	**15**	**0.6036**	**0.07517**	**0**	**None**	**No**	**0.01**	**NP (normality)**
Molybdenum (mg/L)	MW-17	0.03126	0.008006	0.1	No	9	0.01954	0.01309	0	None	sqrt(x)	0.01	Param.
Selenium (mg/L)	MW-2D	0.07207	0.01148	0.05	No	8	0.04177	0.02858	0	None	No	0.01	Param.
Selenium (mg/L)	MW-3D	0.005	0.001	0.05	No	16	0.004146	0.001844	81.25	None	No	0.01	NP (NDs)
Selenium (mg/L)	MW-4D	0.005	0.0002	0.05	No	11	0.002084	0.002326	36.36	None	No	0.006	NP (normality)
Selenium (mg/L)	MW-5D	0.005	0.00026	0.05	No	11	0.001681	0.002155	27.27	None	No	0.006	NP (normality)
Selenium (mg/L)	MW-6D	0.005	0.0006	0.05	No	12	0.004256	0.001738	83.33	None	No	0.01	NP (NDs)
Selenium (mg/L)	MW-9D	0.004494	0.002218	0.05	No	10	0.003356	0.001275	10	None	No	0.01	Param.
Selenium (mg/L)	MW-12D	0.003695	0.001509	0.05	No	11	0.002602	0.001311	9.091	None	No	0.01	Param.
Selenium (mg/L)	MW-13D	0.01085	0.004752	0.05	No	10	0.007803	0.003419	10	None	No	0.01	Param.
Selenium (mg/L)	MW-14	0.004431	0.001827	0.05	No	11	0.003129	0.001563	9.091	None	No	0.01	Param.
Selenium (mg/L)	MW-15	0.00863	0.002196	0.05	No	15	0.00596	0.00568	13.33	None	sqrt(x)	0.01	Param.
Selenium (mg/L)	MW-17	0.02059	0.005561	0.05	No	9	0.01307	0.007782	0	None	No	0.01	Param.
Thallium (mg/L)	MW-2D	0.001306	0.0001056	0.002	No	8	0.0006688	0.0006594	12.5	None	sqrt(x)	0.01	Param.
Thallium (mg/L)	MW-3D	0.00102	0.0002	0.002	No	16	0.0002512	0.000205	93.75	None	No	0.01	NP (NDs)
Thallium (mg/L)	MW-4D	0.00294	0.00002	0.002	No	11	0.001396	0.001153	36.36	None	No	0.006	NP (normality)
Thallium (mg/L)	MW-5D	0.00125	0.00004	0.002	No	11	0.0004282	0.0006187	63.64	None	No	0.006	NP (NDs)
Thallium (mg/L)	MW-6D	0.0002	0.0002	0.002	No	11	0.0002582	0.0002584	81.82	None	No	0.006	NP (NDs)
Thallium (mg/L)	MW-9D	0.002	0.0001	0.002	No	10	0.001615	0.0008117	80	None	No	0.011	NP (NDs)
Thallium (mg/L)	MW-12D	0.00199	0.000106	0.002	No	11	0.0005352	0.0007753	36.36	None	No	0.006	NP (normality)
Thallium (mg/L)	MW-13D	0.002	0.00003	0.002	No	10	0.000825	0.001011	40	None	No	0.011	NP (normality)
Thallium (mg/L)	MW-14	0.004	0.00005	0.002	No	10	0.003208	0.00167	80	None	No	0.011	NP (NDs)
Thallium (mg/L)	MW-15	0.00105	0.0002	0.002	No	15	0.0002567	0.0002195	93.33	None	No	0.01	NP (NDs)
Thallium (mg/L)	MW-17	0.004	0.000057	0.002	No	9	0.002455	0.001887	55.56	None	No	0.002	NP (NDs)

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

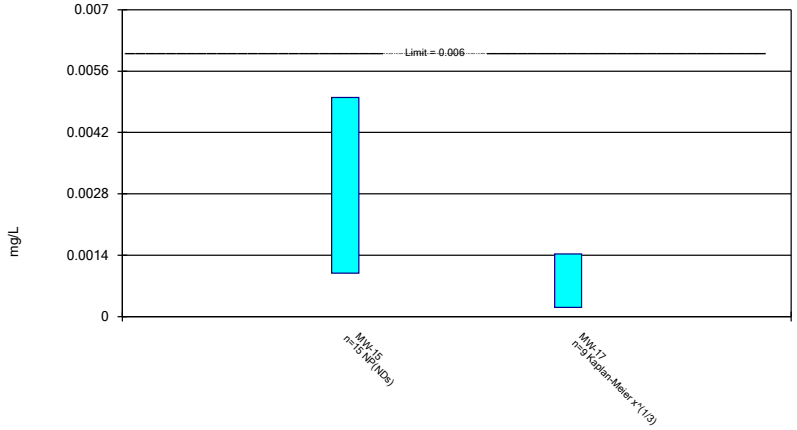


Constituent: Antimony Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

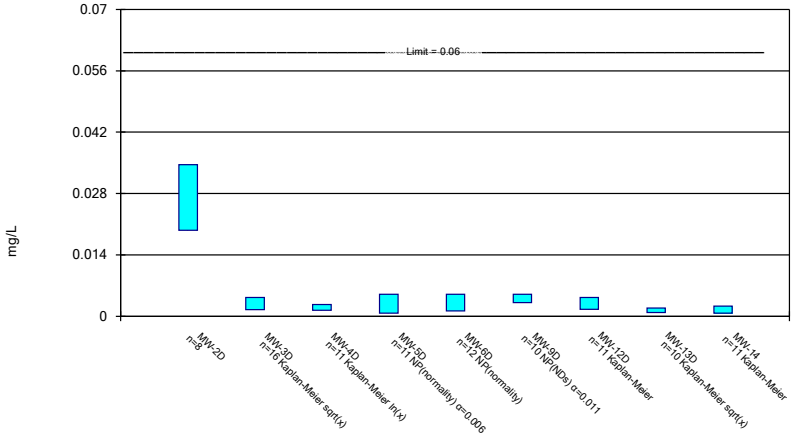


Constituent: Antimony Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

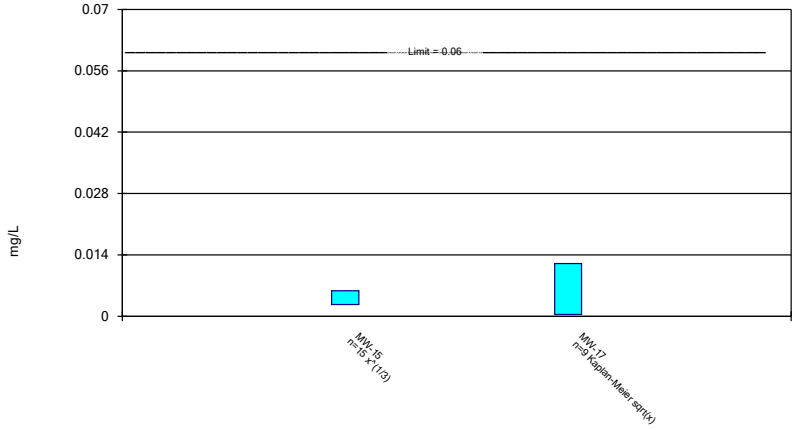


Constituent: Arsenic Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

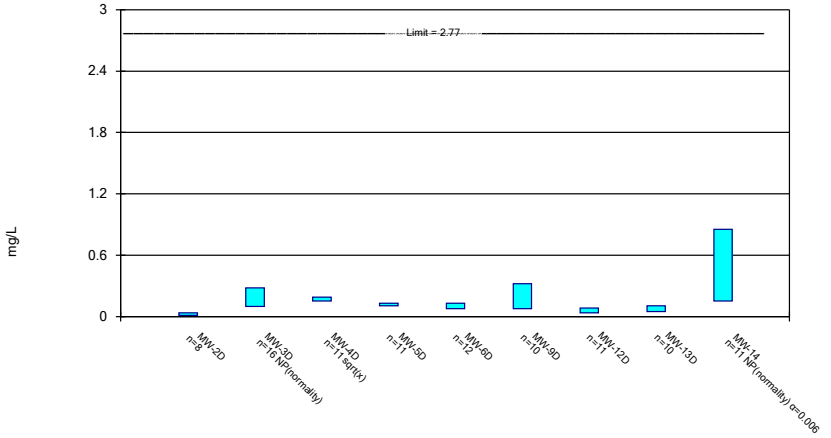


Constituent: Arsenic Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

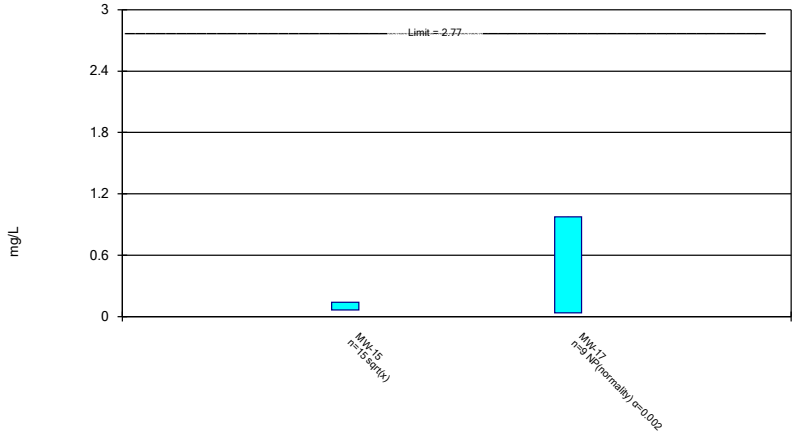


Constituent: Barium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

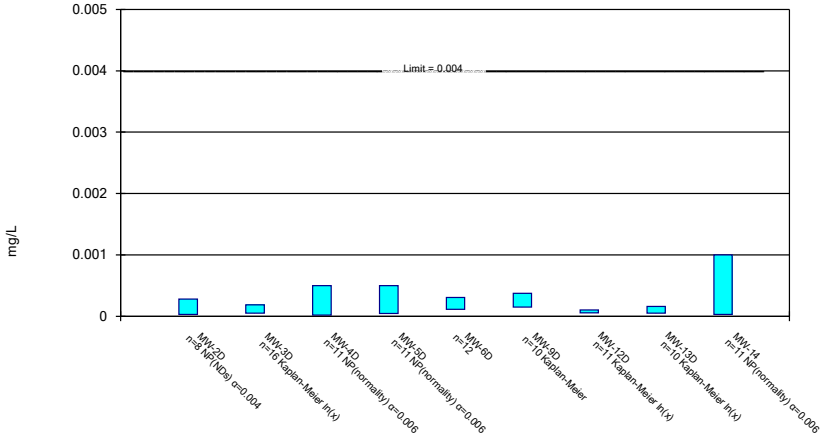


Constituent: Barium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

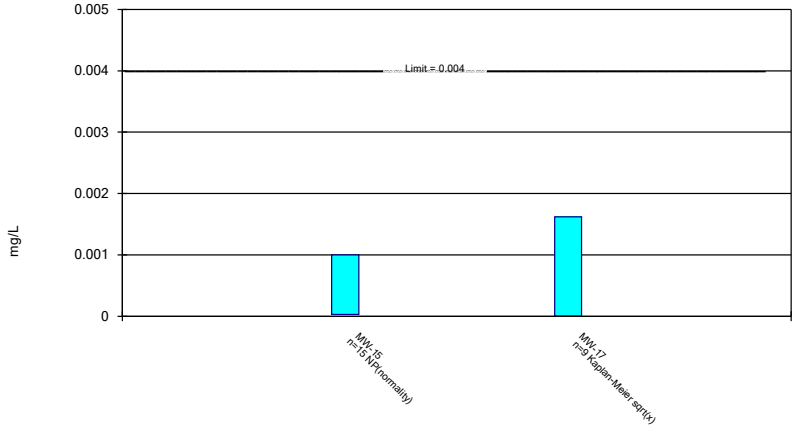


Constituent: Beryllium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

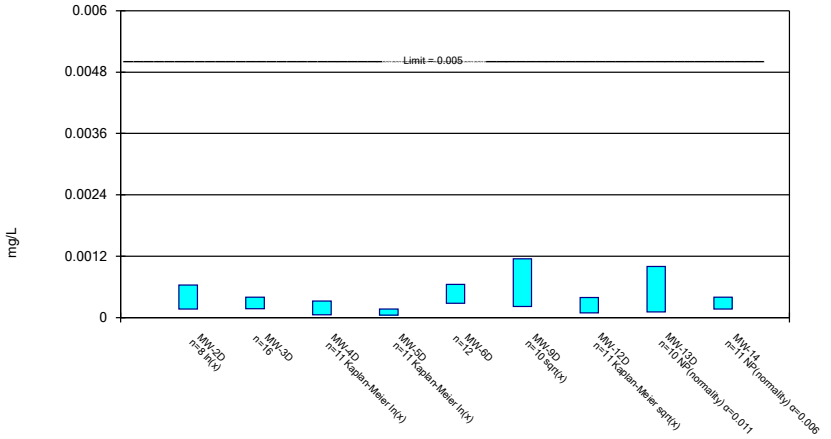


Constituent: Beryllium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

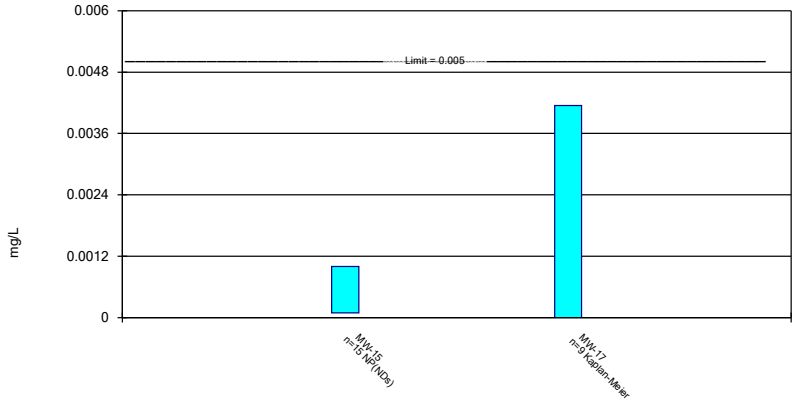


Constituent: Cadmium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

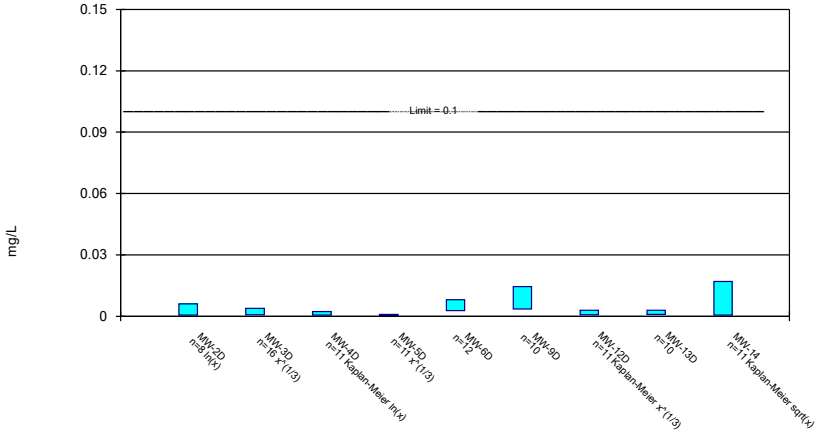


Constituent: Cadmium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

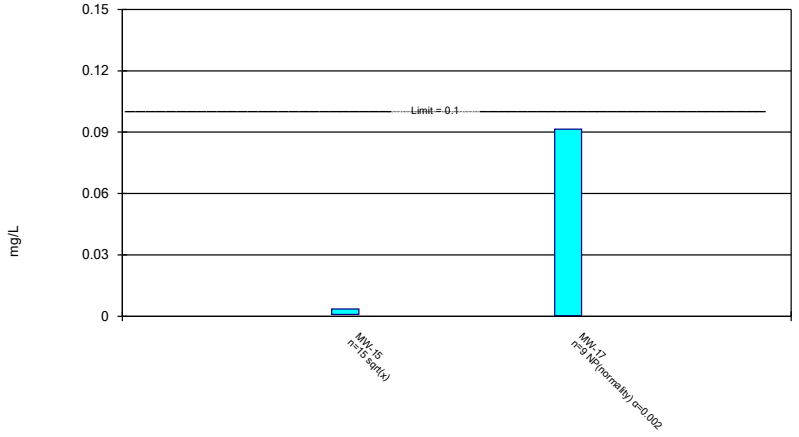


Constituent: Chromium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

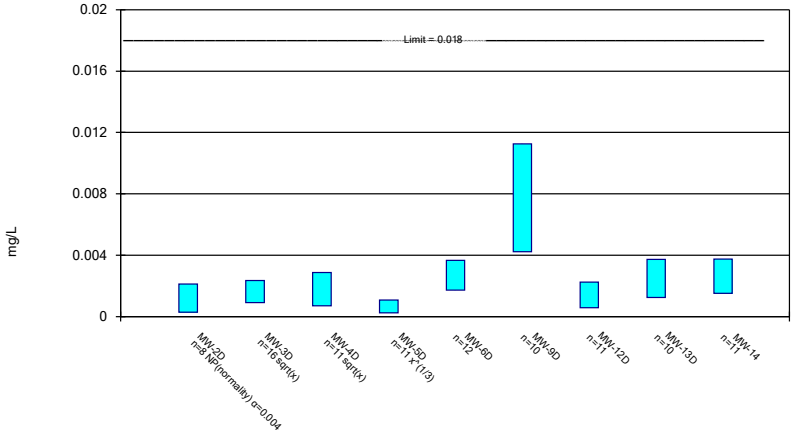


Constituent: Chromium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

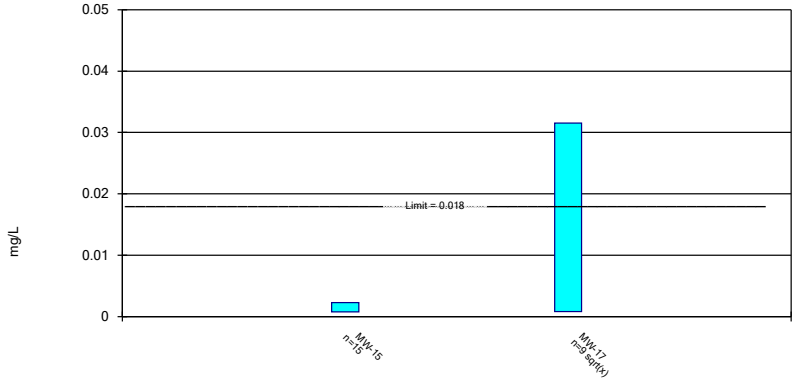


Constituent: Cobalt Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

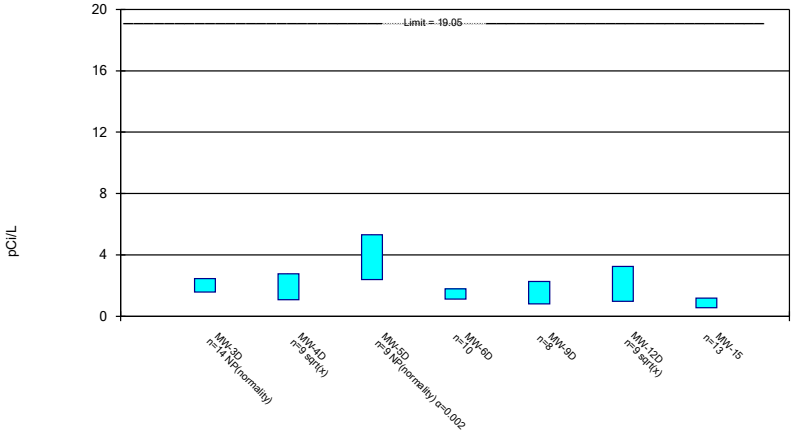


Constituent: Cobalt Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

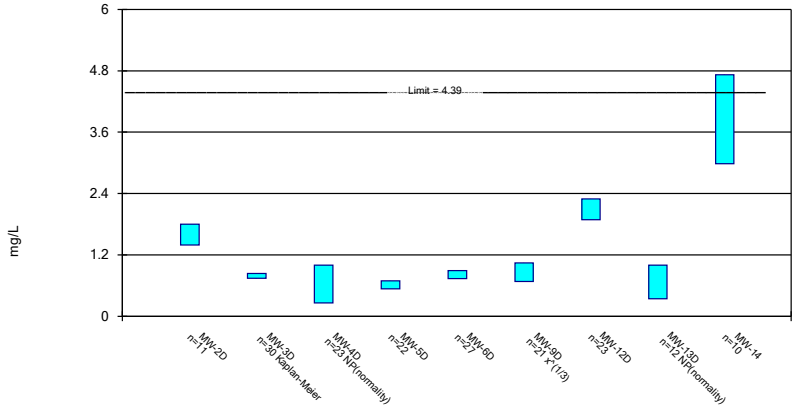


Constituent: Combined Radium 226 + 228 Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

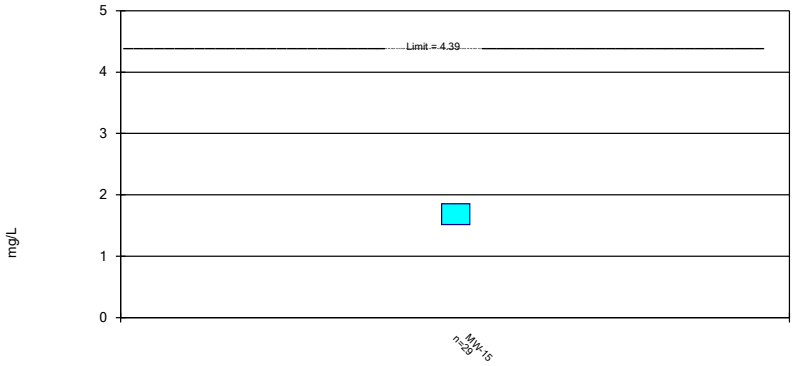


Constituent: Fluoride Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

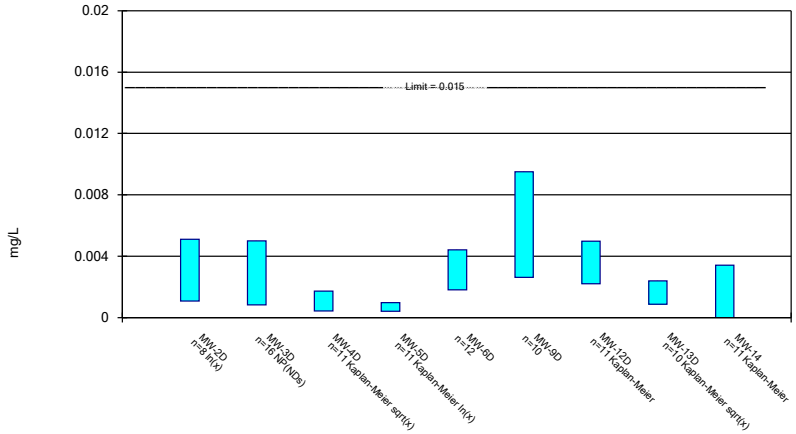


Constituent: Fluoride Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

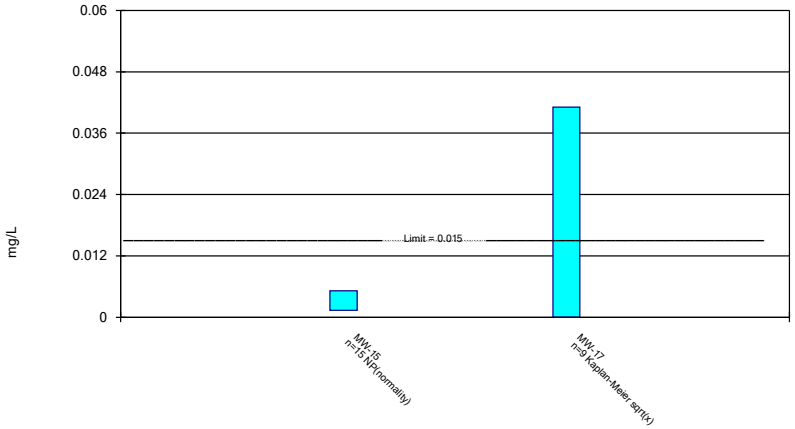


Constituent: Lead Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

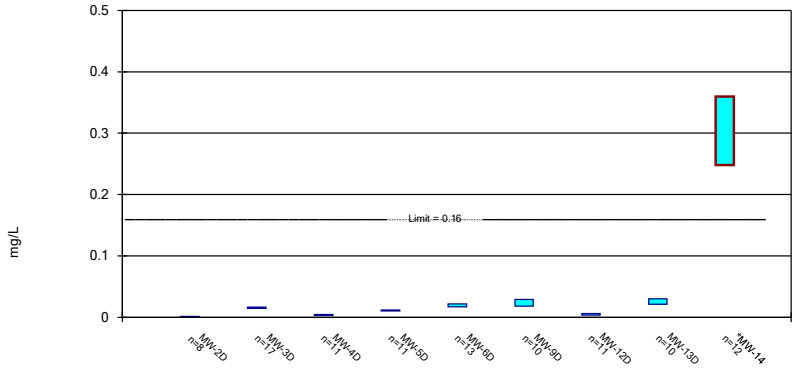


Constituent: Lead Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

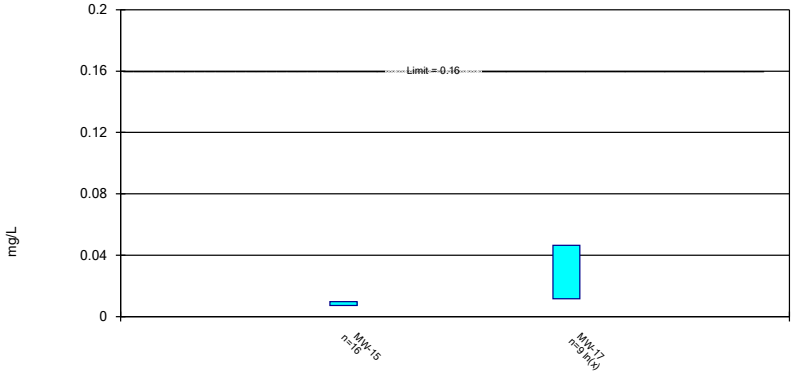


Constituent: Lithium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

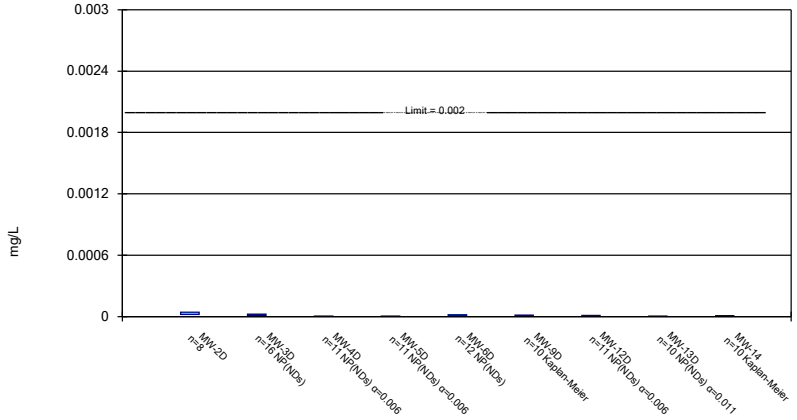


Constituent: Lithium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

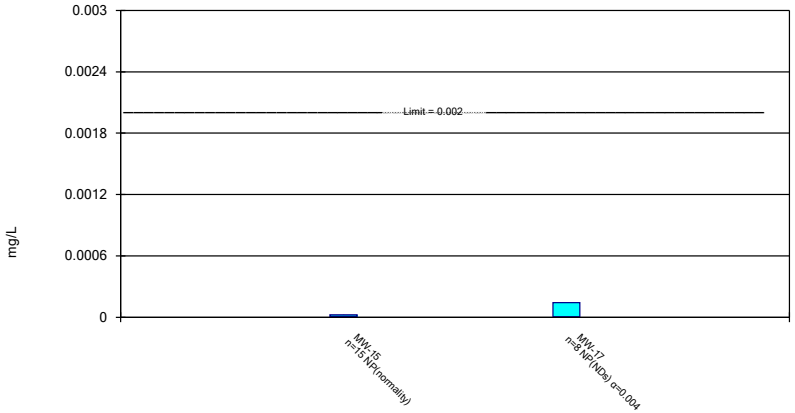


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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

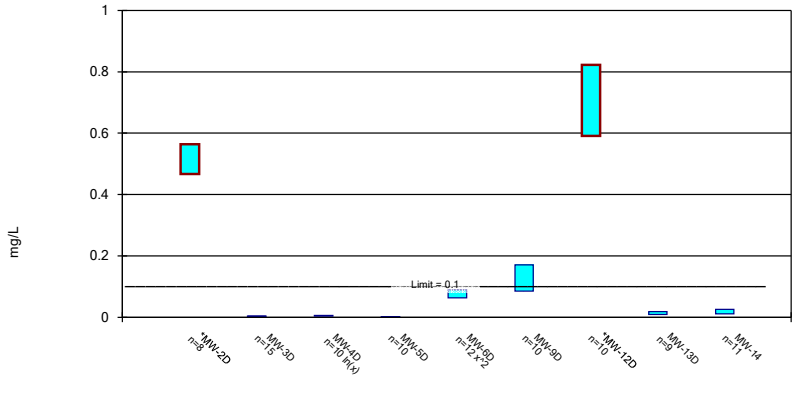


Constituent: Mercury Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

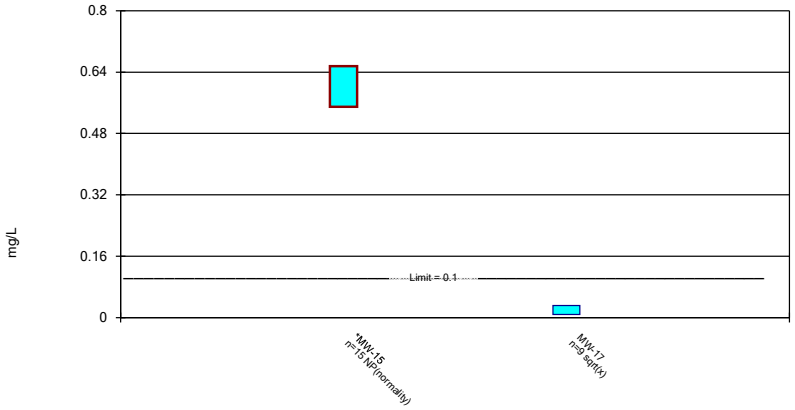


Constituent: Molybdenum Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

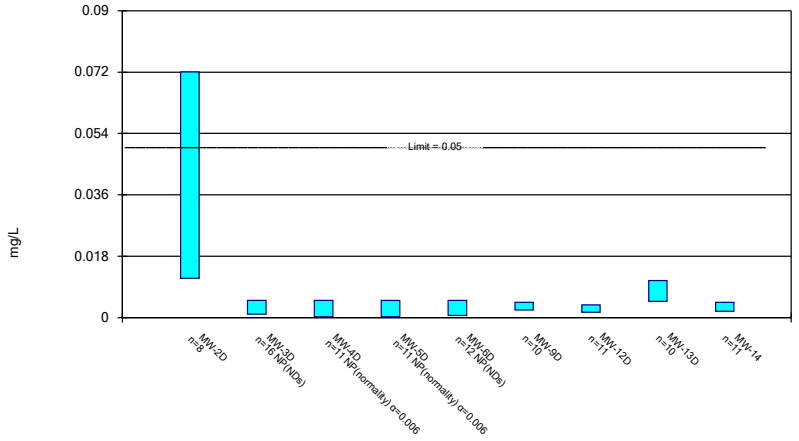


Constituent: Molybdenum Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

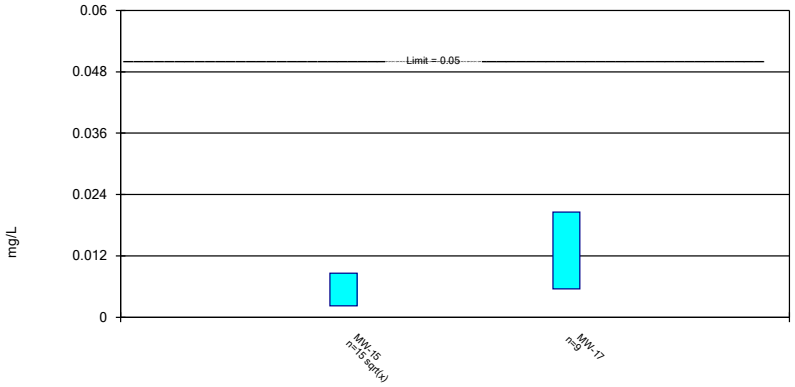


Constituent: Selenium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

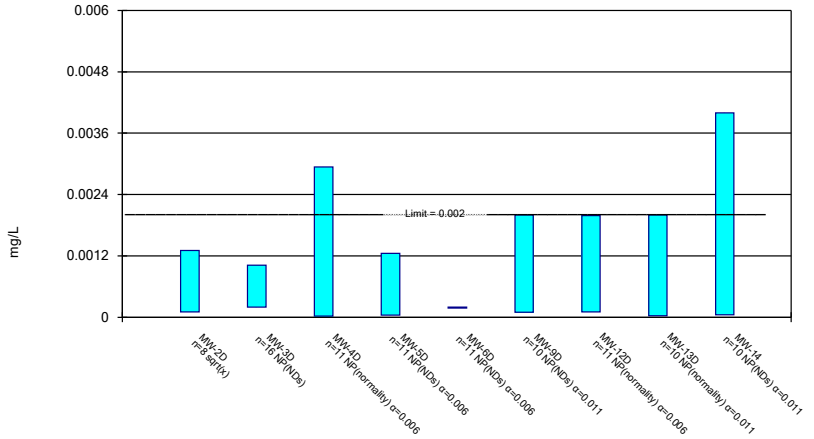


Constituent: Selenium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

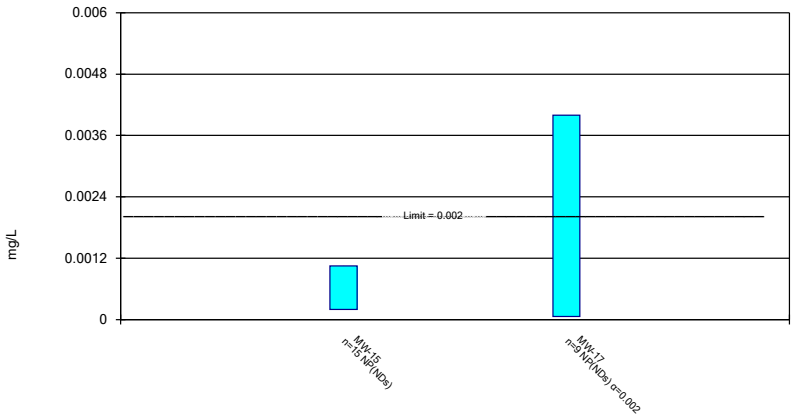


Constituent: Thallium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Thallium Analysis Run 6/17/2025 4:59 PM View: Confidence Intervals

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

FIGURE G

Trend Tests

Appendix B Trend Tests - Significant Results

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/18/2025, 2:38 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Lithium (mg/L)	**SP-4 (bg)**	**-0.001486**	**-65**	**-49**	**Yes**	**17**	**0**	**n/a**	**0.05**	**NP**
Lithium (mg/L)	**SP-5R (bg)**	**-0.004706**	**-200**	**-106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Lithium (mg/L)	**MW-14**	**-0.01659**	**-34**	**-30**	**Yes**	**12**	**0**	**n/a**	**0.05**	**NP**
Molybdenum (mg/L)	**SP-5R (bg)**	**-0.0001435**	**-252**	**-106**	**Yes**	**29**	**44.83**	**n/a**	**0.05**	**NP**
Molybdenum (mg/L)	**MW-2D**	**-0.02037**	**-24**	**-17**	**Yes**	**8**	**0**	**n/a**	**0.05**	**NP**

Appendix B Trend Tests - All Results

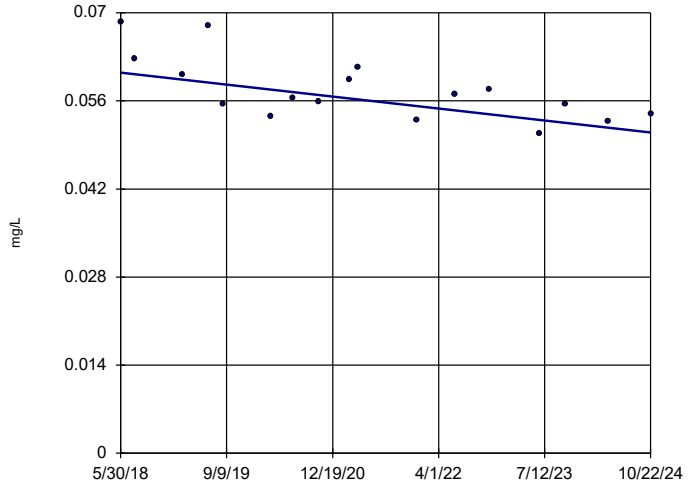
Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/18/2025, 2:38 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Alpha	Method
Lithium (mg/L)	**SP-4 (bg)**	**-0.001486**	**-65**	**-49**	**Yes**	**17**	**0**	**n/a**	**0.05**	**NP**
Lithium (mg/L)	**SP-5R (bg)**	**-0.004706**	**-200**	**-106**	**Yes**	**29**	**0**	**n/a**	**0.05**	**NP**
Lithium (mg/L)	**MW-14**	**-0.01659**	**-34**	**-30**	**Yes**	**12**	**0**	**n/a**	**0.05**	**NP**
Molybdenum (mg/L)	SP-4 (bg)	-0.0002114	-94	-106	No	29	13.79	n/a	0.05	NP
Molybdenum (mg/L)	**SP-5R (bg)**	**-0.0001435**	**-252**	**-106**	**Yes**	**29**	**44.83**	**n/a**	**0.05**	**NP**
Molybdenum (mg/L)	**MW-2D**	**-0.02037**	**-24**	**-17**	**Yes**	**8**	**0**	**n/a**	**0.05**	**NP**
Molybdenum (mg/L)	MW-12D	-0.03227	-11	-23	No	10	0	n/a	0.05	NP
Molybdenum (mg/L)	MW-15	-0.02318	-19	-41	No	15	0	n/a	0.05	NP

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Sen's Slope Estimator

SP-4 (bg)



n = 17

Slope = -0.001486 units per year.

Mann-Kendall statistic = -65 critical = -49

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

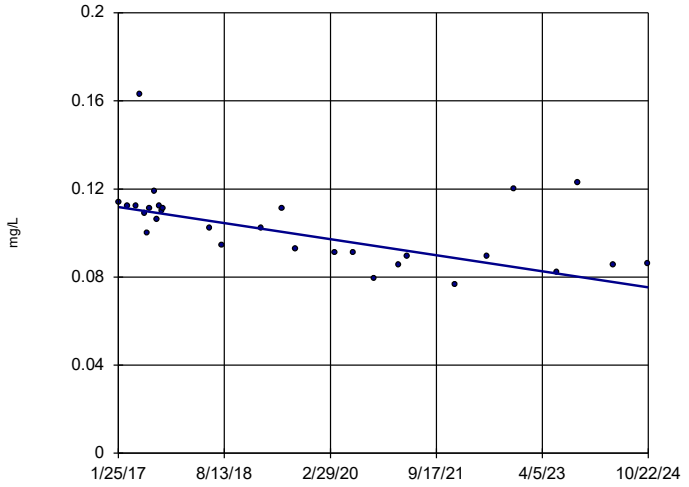
Constituent: Lithium Analysis Run 6/18/2025 2:37 PM View: Trend Tests

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Sen's Slope Estimator

SP-5R (bg)



n = 29

Slope = -0.004706 units per year.

Mann-Kendall statistic = -200 critical = -106

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

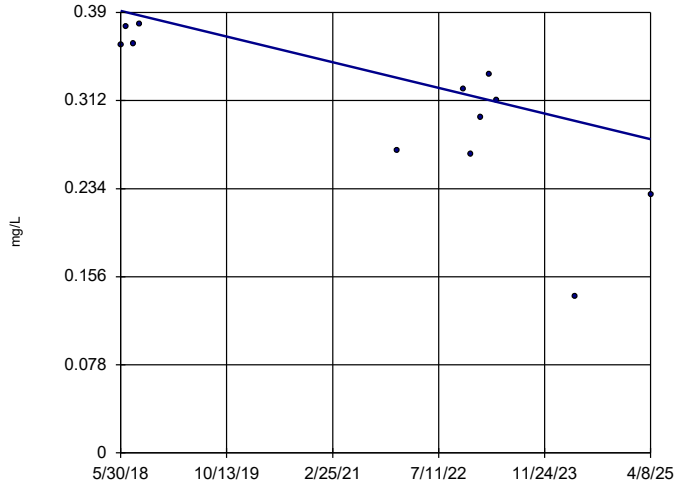
Constituent: Lithium Analysis Run 6/18/2025 2:37 PM View: Trend Tests

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Sen's Slope Estimator

MW-14



n = 12

Slope = -0.01659 units per year.

Mann-Kendall statistic = -34 critical = -30

Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Lithium Analysis Run 6/18/2025 2:37 PM View: Trend Tests

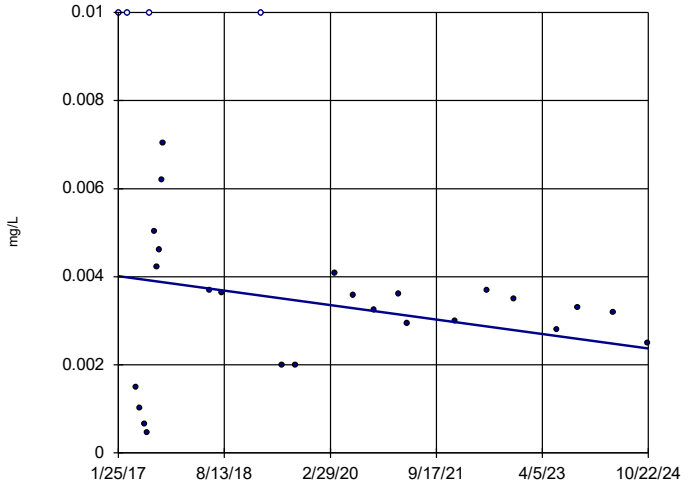
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SP-4 (bg)



n = 29

Slope = -0.0002114 units per year.

Mann-Kendall statistic = -94 critical = -106

Trend not significant at 95% confidence level (α = 0.025 per tail).

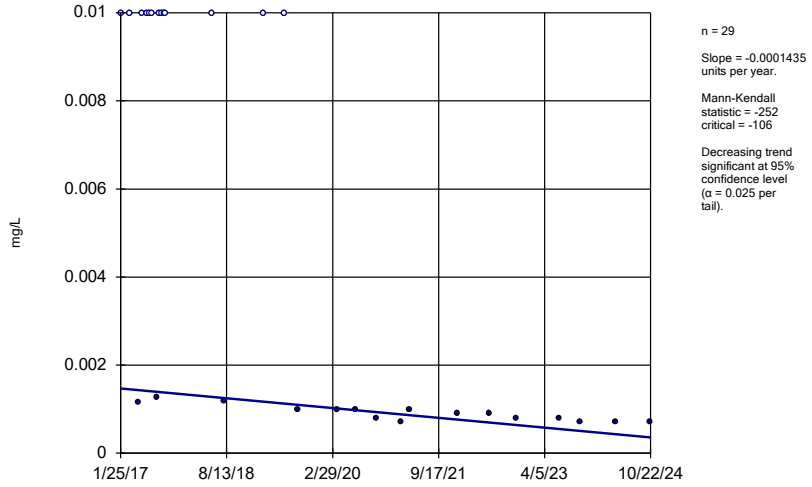
Constituent: Molybdenum Analysis Run 6/18/2025 2:37 PM View: Trend Tests

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SP-5R (bg)



n = 29

Slope = -0.0001435 units per year.

Mann-Kendall statistic = -252
critical = -106

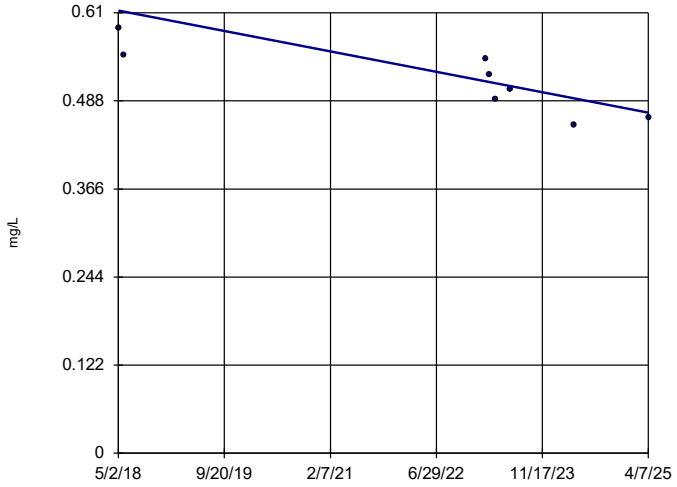
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Molybdenum Analysis Run 6/18/2025 2:37 PM View: Trend Tests
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Sen's Slope Estimator

MW-2D



n = 8

Slope = -0.02037 units per year.

Mann-Kendall statistic = -24
critical = -17

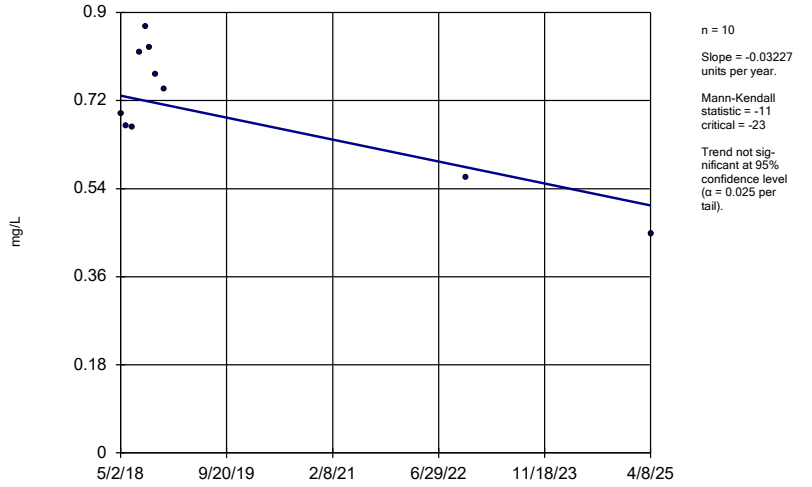
Decreasing trend significant at 95% confidence level (α = 0.025 per tail).

Constituent: Molybdenum Analysis Run 6/18/2025 2:38 PM View: Trend Tests
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Sen's Slope Estimator

MW-12D



n = 10

Slope = -0.03227 units per year.

Mann-Kendall statistic = -11
critical = -23

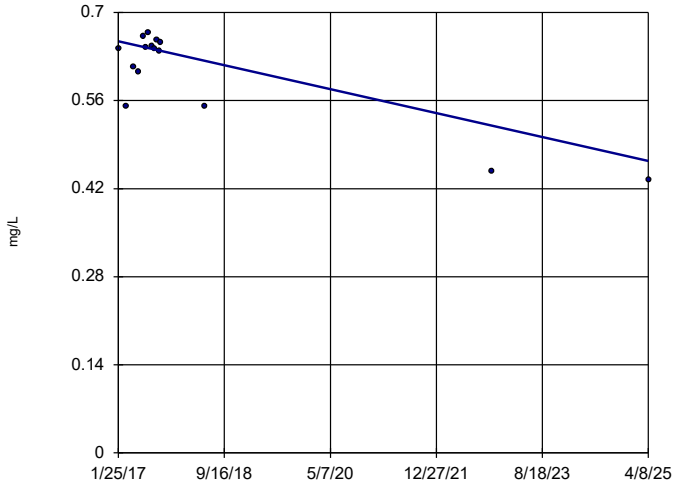
Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Molybdenum Analysis Run 6/18/2025 2:38 PM View: Trend Tests
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Sen's Slope Estimator

MW-15



n = 15

Slope = -0.02318 units per year.

Mann-Kendall statistic = -19
critical = -41

Trend not significant at 95% confidence level (α = 0.025 per tail).

Constituent: Molybdenum Analysis Run 6/18/2025 2:38 PM View: Trend Tests
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

ATTACHMENT C
Statistical Analysis Output – Appendix A

GROUNDWATER STATS CONSULTING

August 22, 2025

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Suite 250
Worthington, OH 43085

Re: Northeastern Landfill – Appendix A Prediction Limits Background Update

Dear Ms. Kreinberg,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the background update, as described below, and construction of prediction limits for Appendix A Detection Monitoring parameters on groundwater at American Electric Power's Northeastern Landfill. The analysis complies with the Oklahoma Administrative Code (OAC 252:517), the federal rule for the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule, 2015), as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling began at the Northeastern Landfill for the CCR program in 2017. The monitoring well network, as provided by Geosyntec Consultants, consists of the following:

- **Upgradient wells:** SP-4 and SP-5R
- **Downgradient wells**: MW-1D, MW-2D, MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-10D, MW-11D, MW-12D, MW-13D, MW-14, MW-15, MW-16, and MW-17

Due to high salinity, proposed upgradient wells were previously not approved as background for this facility. For the current screening, however, upgradient wells from Northeastern Bottom Ash Pond (BAP), SP-4 and SP-5R listed above, were reportedly approved as background wells for Northeastern Landfill. Note that while sampling began in 2017 for the majority of wells, downgradient wells MW-2D and MW-14 were first sampled in 2019.

The following constituents were evaluated:

- **Appendix A** – boron, calcium, chloride, fluoride, pH, sulfate, and TDS

Additional data have been provided by Geosyntec since the Fall 2024 screening; therefore, the purpose of this update includes screening historical data for outliers from downgradient well/constituent pairs that did not previously have sufficient samples for constructing intrawell prediction limits using data through October 2023 and to update interwell prediction limits with pooled upgradient well data through October 2024. Eligibility of intrawell and interwell methods will be re-evaluated once all wells have sufficient data to have prediction limits constructed.

During the Fall 2024 screening, the following well/constituent pairs did not have sufficient background samples for construction of intrawell prediction limits: calcium at well MW-17; chloride at wells MW-2D and MW-13D; and TDS at wells MW-2D and MW-13D. These well/constituent pairs are screened for outliers during this report prior to constructing intrawell prediction limits. Intrawell prediction limits for all other well/constituent pairs provided during the Fall 2024 report are also included with this update for a complete set of prediction limits. As mentioned above, interwell prediction limits, which pool upgradient well data, were also screened and updated in this report for boron, fluoride, pH, and sulfate to use data through October 2024.

Data were sent electronically to Groundwater Stats Consulting, and the background screening performed during this analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting. The initial background screening was conducted in October 2018 on all wells in the original monitoring well network, and the 2018 statistical analysis was reviewed by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting and primary author of the USEPA Unified Guidance.

Data at all wells were evaluated during the initial screening for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix A parameters based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. A few well/constituent pairs have a limited background data set due to later installation dates and sampling differences. As more samples are collected, these well/constituent pairs will meet the minimum power requirements. Power curves were included with the previous update report to demonstrate that the selected statistical methods for Appendix A

parameters comply with the USEPA Unified Guidance recommendations as discussed below.

Summary of Statistical Methods

- Intrawell prediction limits, combined with a 1-of-2 resample plan for calcium, chloride, and TDS
- Interwell prediction limits combined with a 1-of-2 resample plan for boron, fluoride, pH, and sulfate

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. While the false positive rate associated with the parametric limits is based on an annual 10% as recommended by the EPA Unified Guidance (2009), the false positive rate associated with the nonparametric limits is dependent upon the available background sample size, number of future comparisons, and verification resample plan. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits. Non-detects are handled as follows:

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits will be necessary to accommodate these types of changes. In the intrawell case, data for all wells and constituents may re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater

quality. In some cases, the earlier portion of data are deselected prior to construction of limits to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

2024 Background Screening Summary

During the Fall 2024 background screening, all wells with sufficient background samples were screened as described below.

Outlier Analysis

Time series plots were used to identify suspected outliers, or extreme values that would result in limits that are not conservative from a regulatory perspective, in proposed background data. Suspected outliers at all wells for intrawell parameters and upgradient wells for interwell parameters were formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits. Any values not identified by Tukey's, but flagged in the database, reduced variation to construct statistical limits that would be capable of readily detecting changes in groundwater quality conditions. Any values identified by Tukey's test, but not flagged in the database, appeared representative of natural variation or would not greatly reduce variation within the record if flagged. A list of flagged values follows this report.

Seasonality

Based on a visual review of the data, no seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

Rank Von Neumann

Some wells were sampled approximately on a monthly basis after installation in order to establish initial baseline limits. After that time, sampling was performed on a semi-annual basis to ensure collection of independent groundwater samples as recommended in the EPA Unified Guidance (2009). The Rank Von Neumann serial correlation test was used to evaluate whether the measurements collected for the following wells after their respective installation periods (2017 for wells SP-4 and SP-5R (both upgradient), as well as

downgradient wells MW-3D, MW-6D, MW-9D, and MW-15, and 2018 for downgradient wells MW-12D, MW-4D, and MW-5D) represented independent samples, or whether serial correlation was present among the measurements which can result in limits which do not best represent the entire background period. Significant serial correlation was identified for the following Appendix A well/constituent pairs:

2017:

- Calcium: SP-4 (upgradient)
- Chloride: MW-3D and MW-15
- pH: MW-3D
- Sulfate: SP-4 and SP-5R (both upgradient)

2018:

- None

As a result, the records for these well/constituent pairs were truncated prior to further data evaluation as discussed below, and to remove earlier measurements for construction of statistical limits using only more recent data that represent independent samples. Results of the Rank Von Neumann test were included with the update and a table of the truncated date ranges follow this report.

Appendix A – Determination of Spatial Variation

The Analysis of Variance (ANOVA) was used to statistically evaluate differences in average concentrations among upgradient wells, which assists in identifying the most appropriate statistical approach. Interwell tests, which compare downgradient well data to statistical limits constructed from pooled upgradient well data, are appropriate when average concentrations are similar across upgradient wells. Intrawell tests, which compare compliance data from a single well to screened historical data within the same well, are appropriate when upgradient wells exhibit spatial variation and when statistical limits constructed from upgradient wells would not be conservative from a regulatory perspective. In the 2018 screening, since no upgradient wells were approved, intrawell prediction limits were used for all parameters.

Upgradient wells SP-4 and SP-5R were evaluated to determine variation among the upgradient wells. Statistically significant variation among the well means (parametric ANOVA) or medians (nonparametric ANOVA) was found for the following constituents: boron, calcium, chloride, sulfate, and TDS, suggesting intrawell methods should be considered for these constituents. No differences were noted for fluoride and pH; therefore, these parameters are eligible for interwell prediction limits. Boron, calcium, chloride, sulfate, and TDS data are further evaluated as described below for the

appropriateness of intrawell testing to accommodate the groundwater quality. A The ANOVA analysis and summary table of the results are included with the 2024 update report.

Intrawell Eligibility – Upper Tolerance Limits

Exploratory data analysis was used for general comparison of concentrations in downgradient wells to those in upgradient wells for all Appendix A parameters recommended for intrawell analyses — boron, calcium, chloride, sulfate, and TDS. Upper tolerance limits (UTLs) for each constituent, using pooled data from the two upgradient wells, were used in conjunction with confidence intervals for each downgradient well/constituent pair to determine whether the estimated averages in downgradient wells are higher than observed levels upgradient of the facility. The UTLs on pooled upgradient data were constructed to represent the upper range of possible background levels at the site. Those tolerance limits were then compared against downgradient confidence intervals as described below.

In cases where downgradient average concentrations are higher than observed upgradient concentrations for a given constituent, an independent study and hydrogeological investigation would be required to identify local geochemical conditions and expected groundwater quality for the region to justify an intrawell approach. Such an assessment is beyond the scope of services provided by Groundwater Stats Consulting. When there is not an obvious explanation for observed concentration differences in downgradient wells relative to reported concentrations in upgradient wells, interwell prediction limits will be initially be selected for the statistical method until further evidence shows that the observed differences are due to natural variation rather than a result of the facility.

Either parametric or nonparametric tolerance limits were used as appropriate for each well/constituent. Parametric tolerance limits were constructed with a target of 99% confidence and 95% coverage using pooled upgradient well data for each of the parameters. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples. As more data are collected, the background population is better represented and the confidence and coverage levels increase. In the 2024 background update report, constructed UTLs are shown along with time series plots for the two upgradient wells which display the data upon which the UTLs are based. A summary table of the UTLs is included in that report as well.

Intrawell Eligibility – Confidence Intervals

Confidence intervals were constructed on downgradient wells for each of the Appendix A parameters, and then compared against the tolerance limits discussed above, to determine intrawell eligibility. When the entire confidence interval is above a background tolerance limit for at least one downgradient well for a given parameter, interwell methods are initially recommended. Therefore, only parameters with confidence intervals which did not exceed background tolerance limits at any downgradient well were eligible for intrawell prediction limits. Confidence intervals exceeded their respective limits for at least one downgradient well for the following constituents: boron and sulfate. Therefore, those two constituents are not eligible for intrawell methods at this time (pending further analysis as discussed above). Complete results of the confidence interval analysis were included with the 2024 background update report.

Based on the ANOVA test results and exploratory data analysis with UTLs and confidence intervals, interwell prediction limits are recommended for boron, fluoride, pH, and sulfate, while intrawell prediction limits are recommended for calcium, chloride, and TDS.

Trend Test Evaluation

While trends may be visually apparent, quantification of each trend and its statistical significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends at the 99% confidence level. When statistically significant or visually apparent trends are found, the background data record may be truncated as needed in order to remove the trend and improve representation of background groundwater quality for calculation of statistical limits. In cases where historical records of data are truncated, a summary report will be provided to show the date ranges used in construction of the statistical limits.

Trend tests were used to evaluate trends among upgradient wells for constituents being evaluated with interwell prediction limits (boron, fluoride, pH, and sulfate), and among all wells for constituents being evaluated with intrawell prediction limits (calcium, chloride, and TDS). Detailed trend test results are included with the 2024 background update report. Significant trends were identified for the following well/constituent pairs:

Increasing

- Calcium: MW-15
- Chloride: SP-5R (upgradient)
- Sulfate: SP-4 (upgradient)
- TDS: SP-5R (upgradient)

Decreasing

- Boron: SP-4 and SP-5R (both upgradient)
- Calcium: MW-12D
- Chloride: MW-12D and MW-15
- TDS: MW-12D

Trends noted in upgradient wells are generally an indication that concentrations are changing for reasons unrelated to the facility.

While identifying these upgradient and downgradient trends is useful for understanding and characterization of background groundwater quality, truncation of the records to remove the trends is appropriate when the trends result in statistical limits that are not representative of background groundwater quality. No records required any adjustments at this time since those identified with statistically significant trends either had concentrations similar to those among upgradient wells or concentrations within the same respective well later in the record.

2025 Background Update Summary

Time series plots for Appendix A parameters at all wells are provided for the purpose of screening data at these wells. Additionally, box plots are included for all constituents at upgradient and downgradient wells. The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells. A substitution of the most recent reporting limit was applied when varying detection limits existed in data.

Note that a minimum of 8 samples is not yet available for chloride and TDS at downgradient wells MW-14 and MW-17 to construct intrawell prediction limits using data through October 2023. Similarly, downgradient wells MW-1D, MW-10D, MW-11D, and MW-16 have been historically dry during some of the sample events and also do not have a minimum of 8 samples. While data from these wells are plotted on the time series and box plots, no formal screening or statistical analyses were required at this time.

<u>Outlier Analysis</u>

Prior to constructing intrawell prediction limits, downgradient well data through October 2023 were screened through Tukey's outlier test and visual screening using time series graphs for the following well/constituent pairs: calcium at well MW-17; chloride at wells MW-2D and MW-13D; and TDS at wells MW-2D and MW-13D. As mentioned earlier, these additional downgradient well/constituent pairs now have sufficient samples to

construct intrawell prediction limits. Tukey's outlier test did not identify any values; therefore, no additional values were flagged.

Upgradient well data through October 2024 from wells SP-4 and SP-5R were also re-evaluated for outliers prior to constructing interwell prediction limits for boron, fluoride, pH, and sulfate during the update. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent. Tukey's outlier test on pooled upgradient well data identified values for fluoride; however, the identified observations were either very similar to other upgradient observations that were not flagged or were lower than the respective Maximum Contaminant Level (MCL); therefore, these values were not flagged as outliers. As mentioned above, a list of any flagged values follows this report.

Intrawell Prediction Limits

Intrawell prediction limits were constructed on all wells with a 1-of-2 resample plan using reported data through October 2023, except for cases listed above where sufficient background samples are not yet available for calcium, chloride, and TDS, and a summary of the updated limits follows this letter. Note that due to sampling differences, the record for calcium at well MW-13D uses data through June 2023 and the record for TDS at well MW-9D extends through December 2023. Future compliance observations at each well will be compared to these background limits after each subsequent semi-annual sampling event. All records will be re-evaluated for updating existing prediction limits when a minimum of 4 compliance samples is available.

Interwell Prediction Limits

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed using all available data from upgradient wells through October 2024 for boron, fluoride, pH, and sulfate. As mentioned above, interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent. A summary table of the updated limits may be found following this letter in the Prediction Limit Summary Tables. These limits are updated annually and will be updated again during the Fall 2025 sample event report.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Northeastern Landfill. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,



Andrew Collins
Project Manager



Kristina L. Rayner
Senior Statistician

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Date Ranges

Date: 6/17/2025 2:15 PM

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Calcium (mg/L)
- SP-4 overall:7/30/2018-4/8/2025, background:7/30/2018-10/10/2023

Chloride (mg/L)
- MW-3D overall:5/30/2018-4/8/2025, background:5/30/2018-10/10/2023
- MW-15 overall:5/30/2018-4/8/2025, background:5/30/2018-10/10/2023

pH, field (SU)
- MW-3D overall:5/30/2018-4/8/2025, background:5/30/2018-10/10/2023

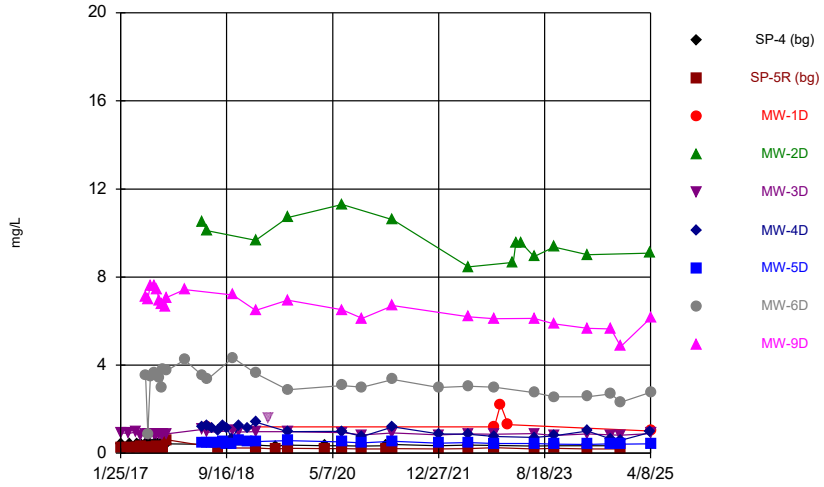
Sulfate (mg/L)
- SP-4 overall:5/30/2018-4/8/2025, background:5/30/2018-10/10/2023
- SP-5R overall:5/30/2018-4/8/2025, background:5/30/2018-10/10/2023

FIGURE A

Time Series

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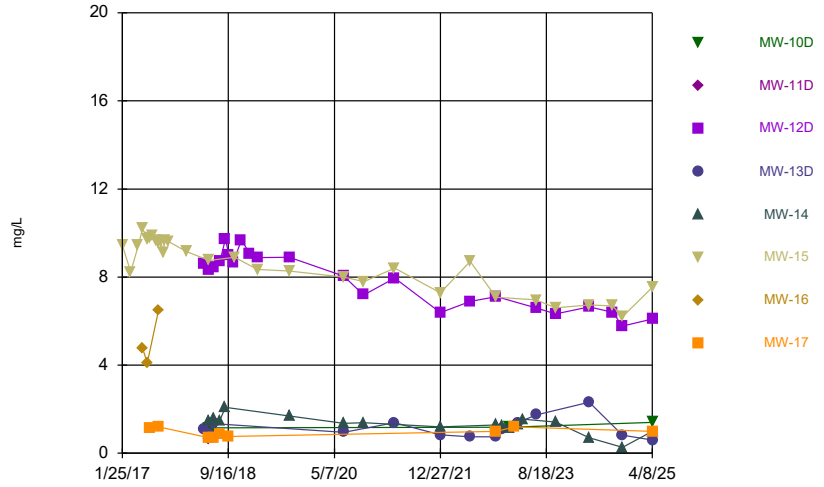
Time Series



Constituent: Boron Analysis Run 6/20/2025 7:48 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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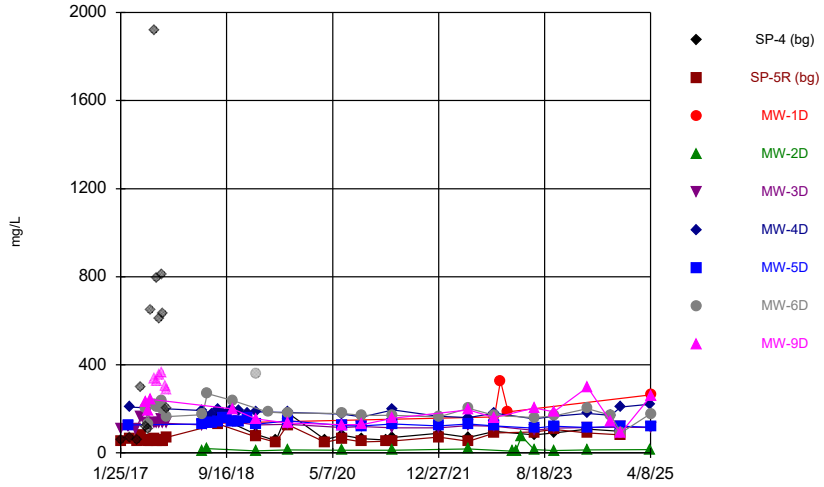
Time Series



Constituent: Boron Analysis Run 6/20/2025 7:48 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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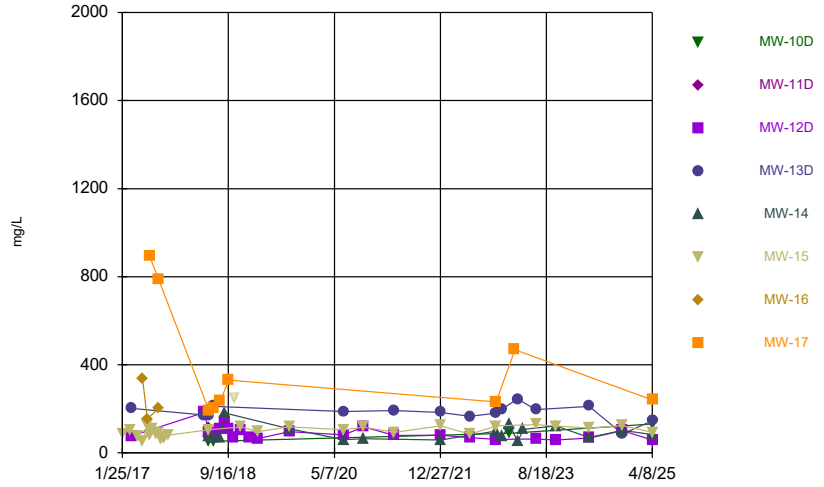
Time Series



Constituent: Calcium Analysis Run 6/20/2025 7:48 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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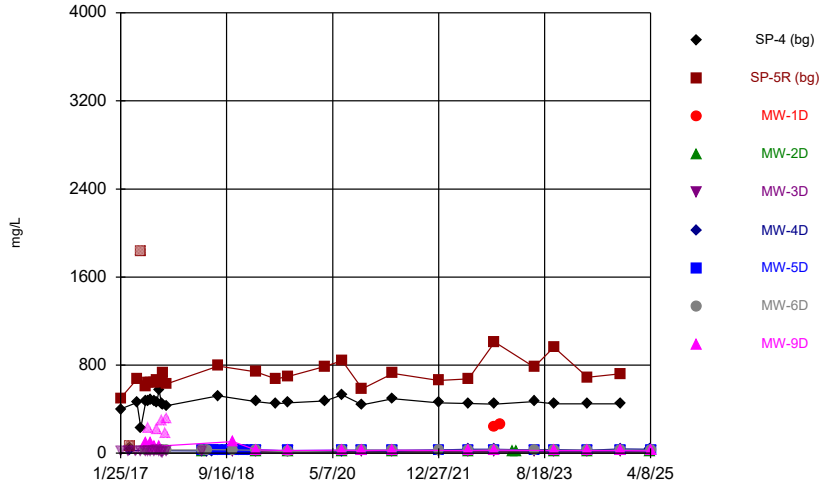
Time Series



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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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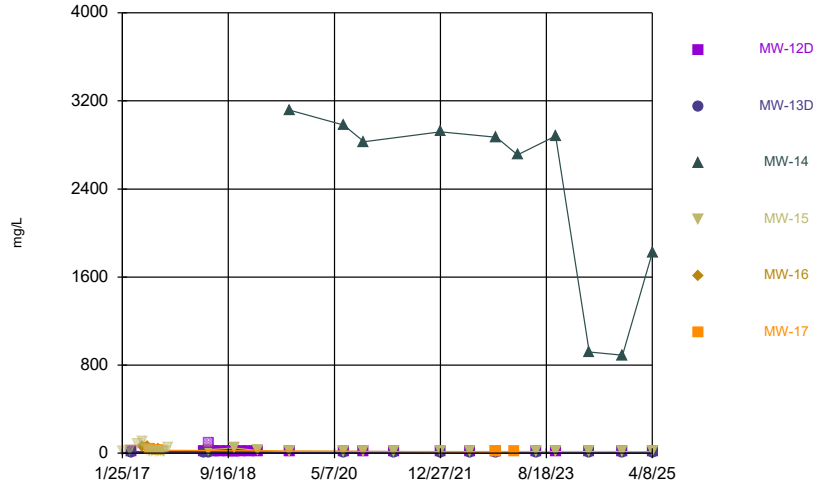
Time Series



Constituent: Chloride Analysis Run 6/20/2025 7:48 AM View: Appendix A
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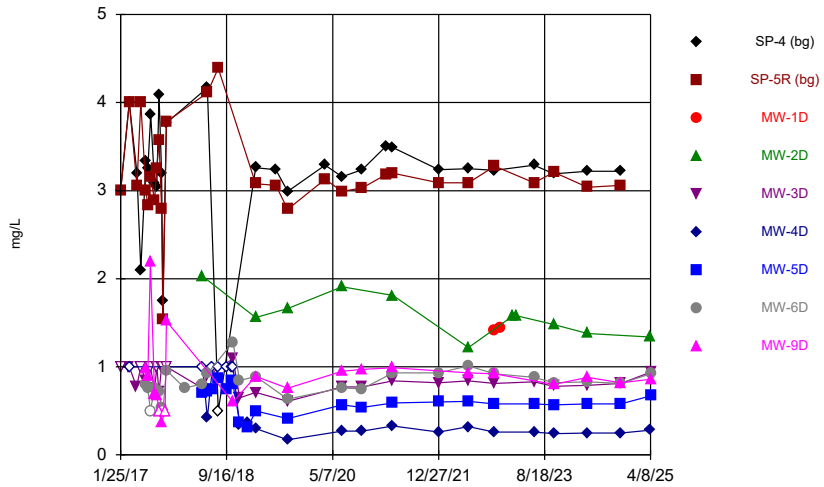
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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Hollow symbols indicate censored values.

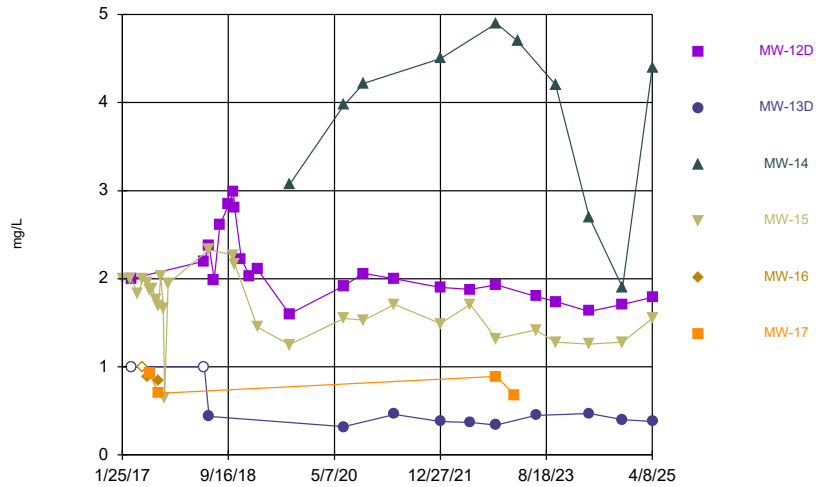
Time Series



Constituent: Fluoride Analysis Run 6/20/2025 7:48 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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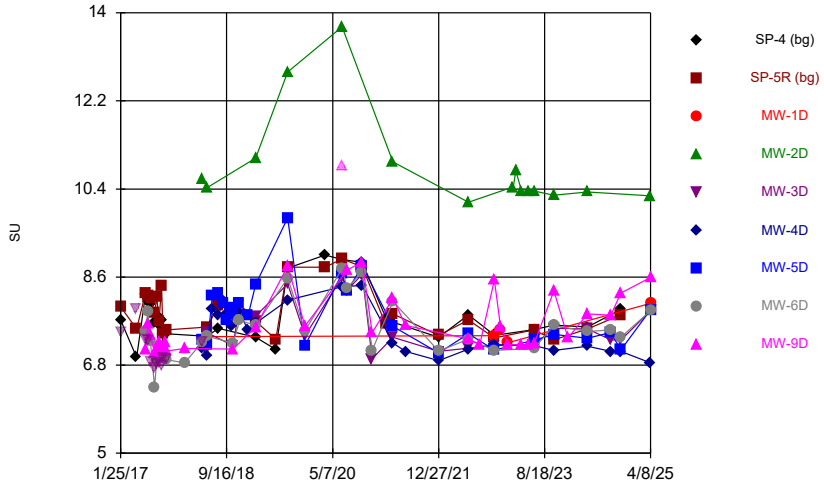
Time Series



Constituent: Fluoride Analysis Run 6/20/2025 7:48 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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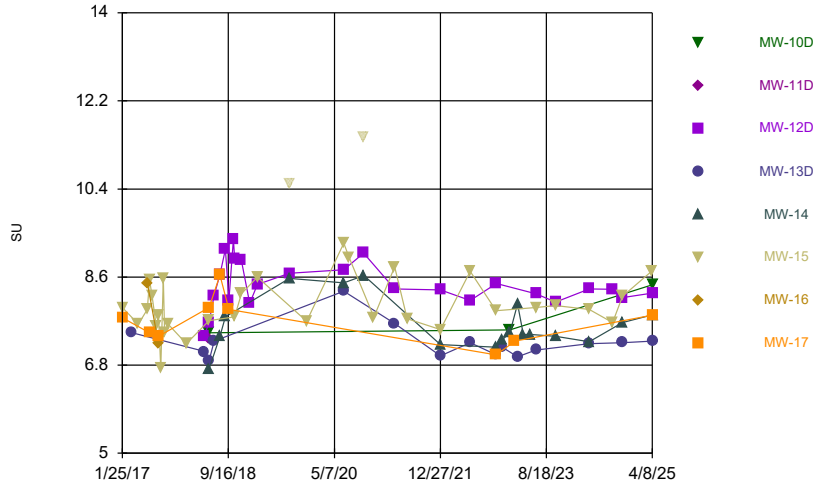
Time Series



Constituent: pH, field Analysis Run 6/20/2025 7:48 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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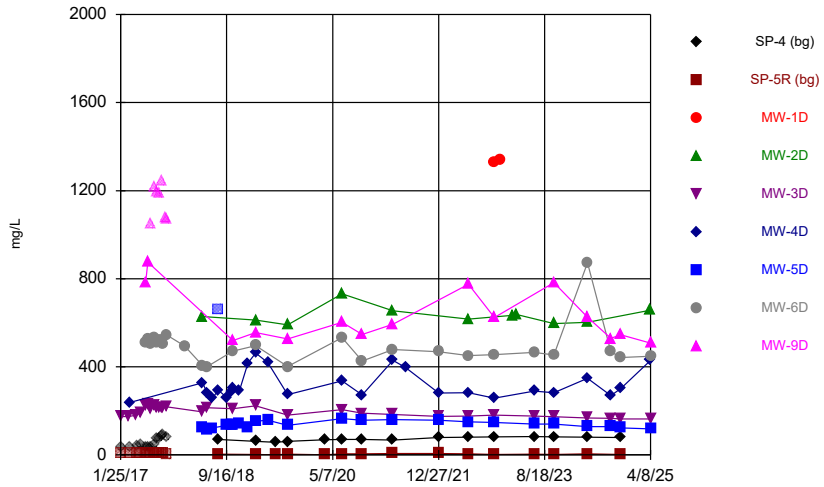
Time Series



Constituent: pH, field Analysis Run 6/20/2025 7:48 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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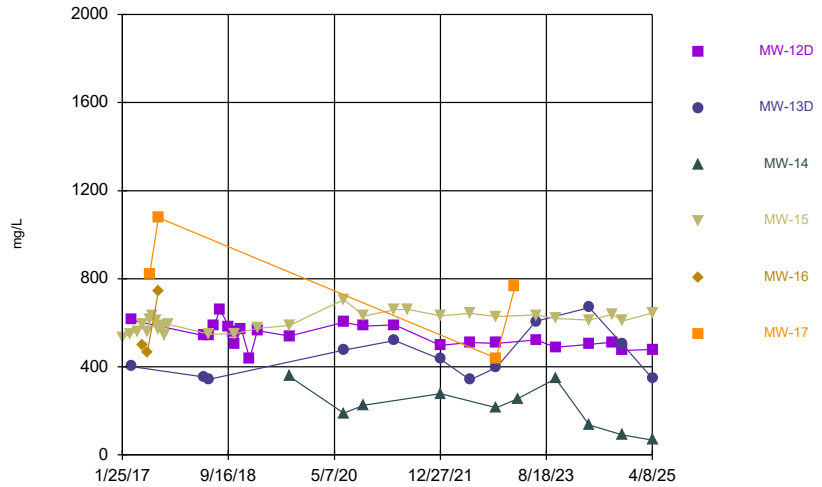
Time Series



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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

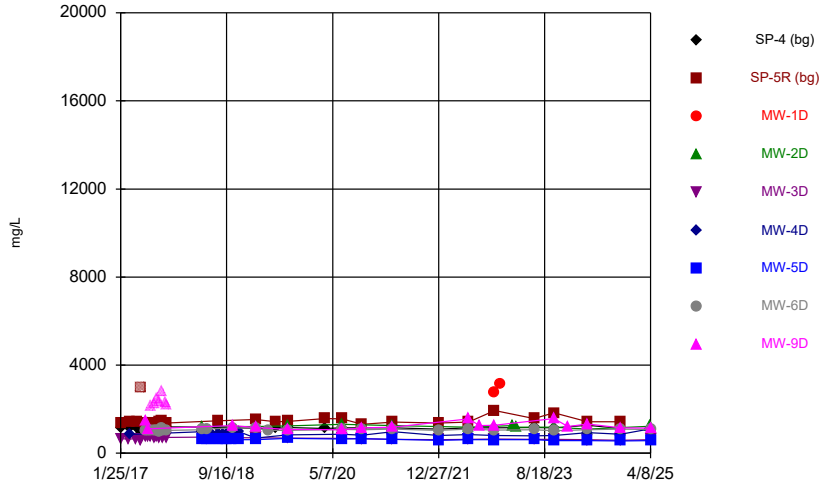
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Time Series



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Northeastern Landfill Client: Geosyntec Data: Northeastern LF

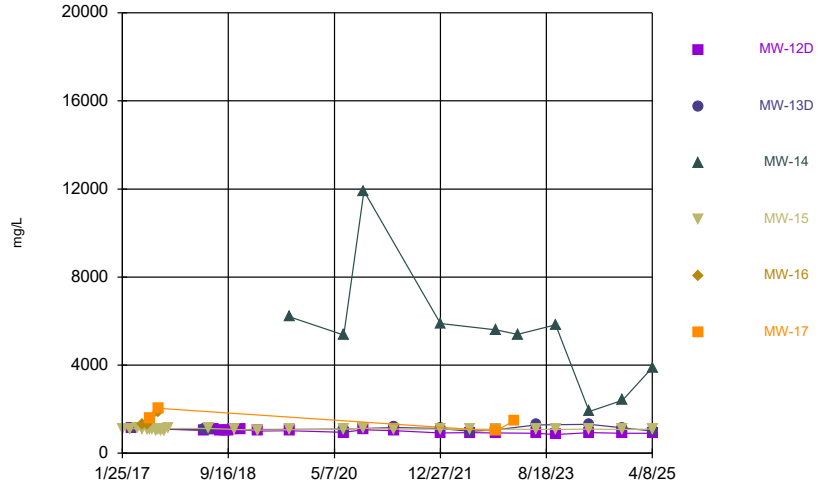
Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 6/20/2025 7:48 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Time Series



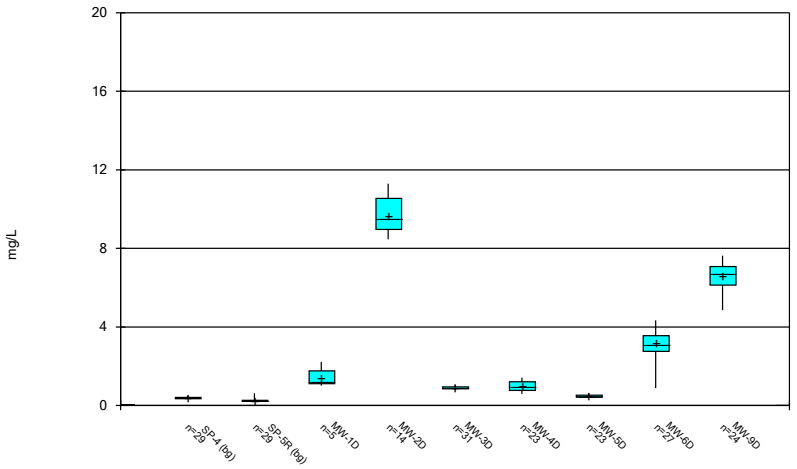
Constituent: Total Dissolved Solids [TDS] Analysis Run 6/20/2025 7:48 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

FIGURE B

Box Plots

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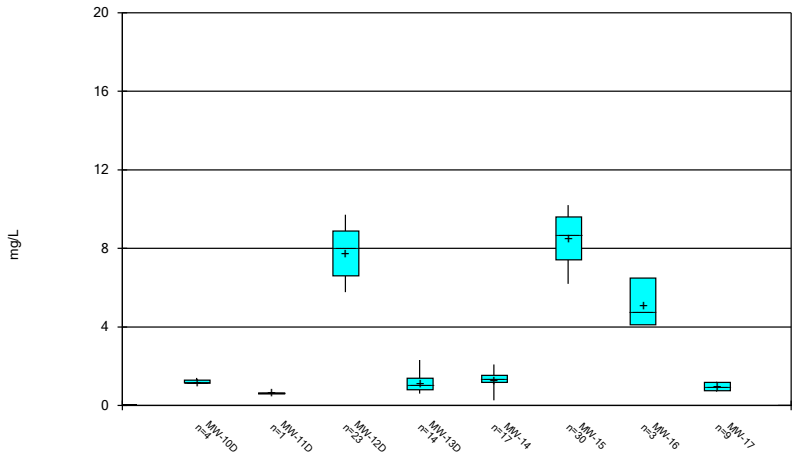
Box & Whiskers Plot



Constituent: Boron Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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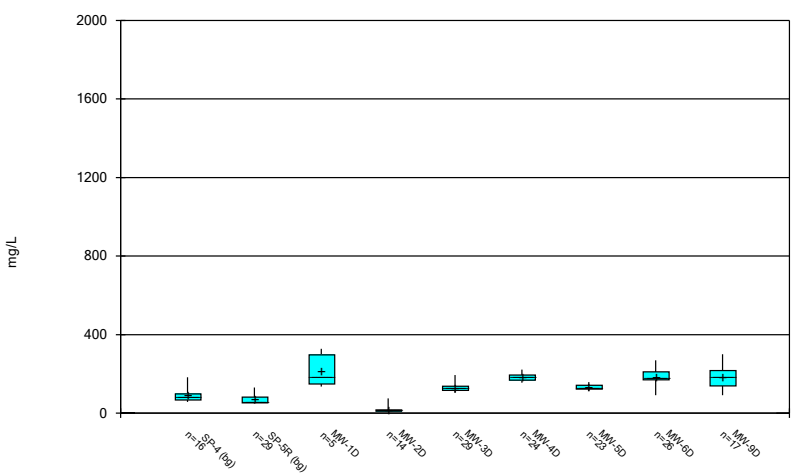
Box & Whiskers Plot



Constituent: Boron Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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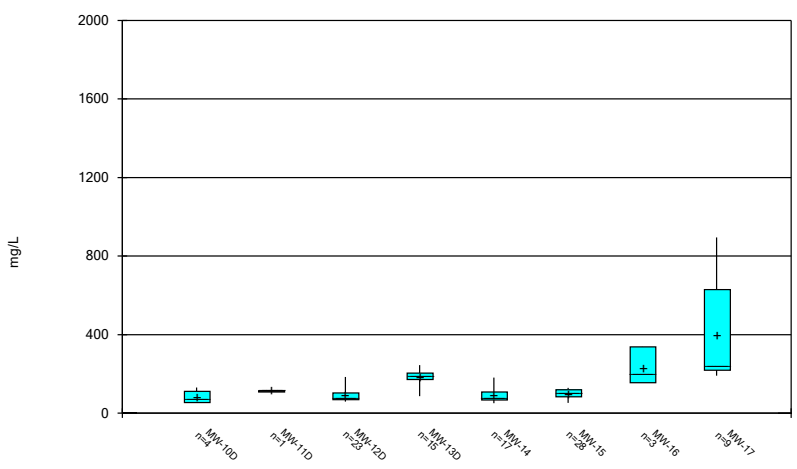
Box & Whiskers Plot



Constituent: Calcium Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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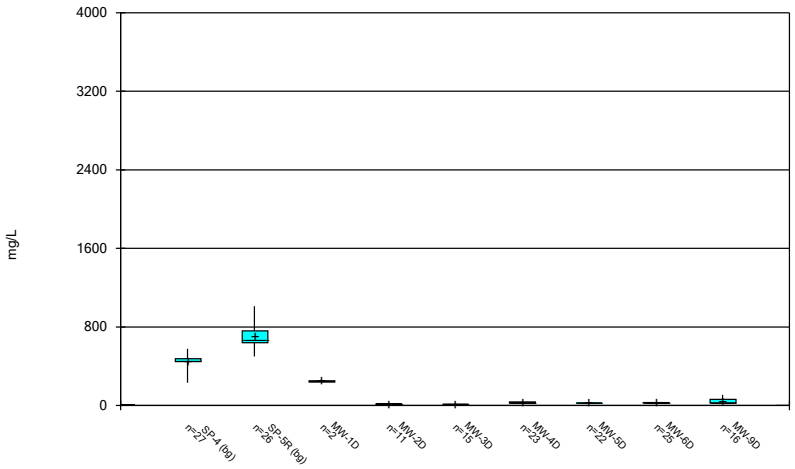
Box & Whiskers Plot



Constituent: Calcium Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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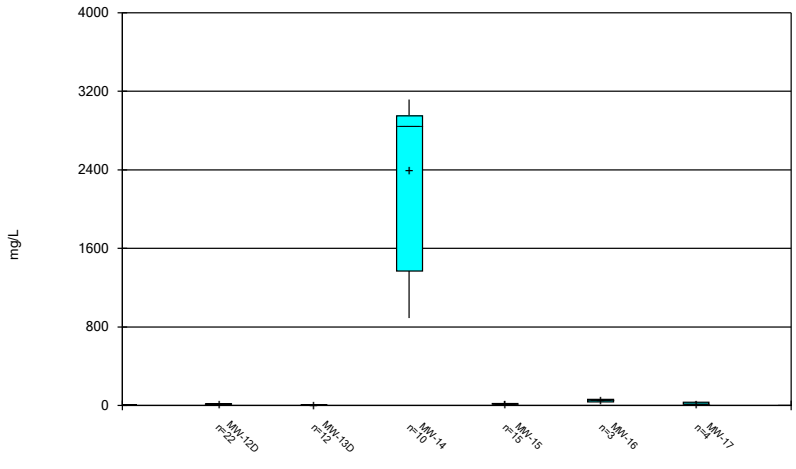
Box & Whiskers Plot



Constituent: Chloride Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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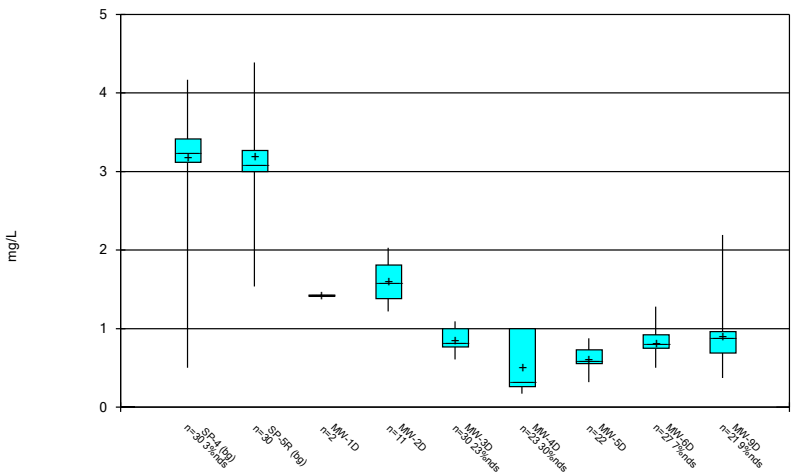
Box & Whiskers Plot



Constituent: Chloride Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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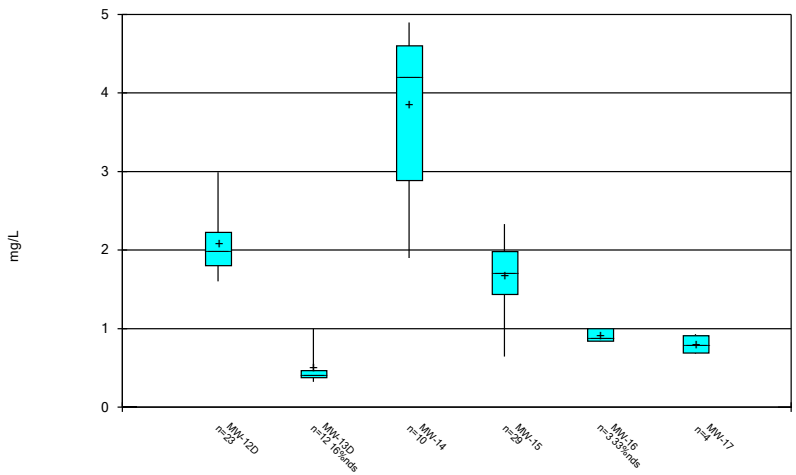
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Constituent: Fluoride Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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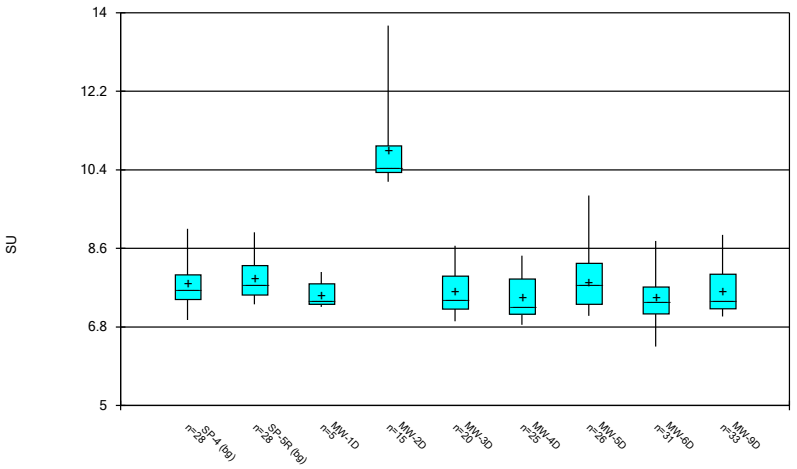
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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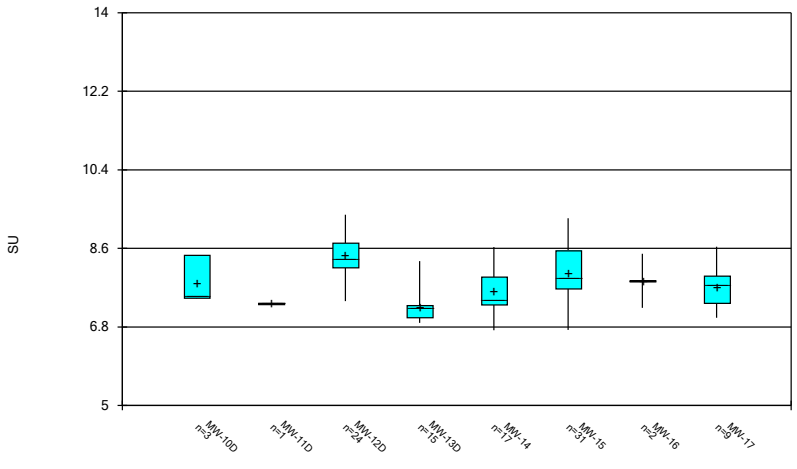
Box & Whiskers Plot



Constituent: pH, field Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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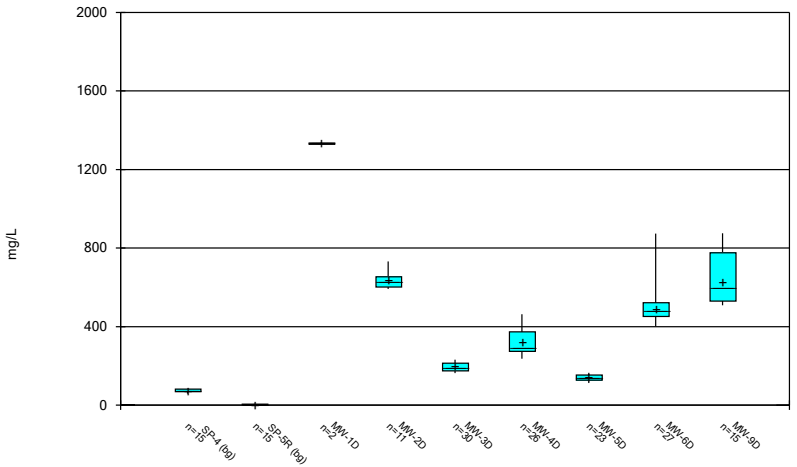
Box & Whiskers Plot



Constituent: pH, field Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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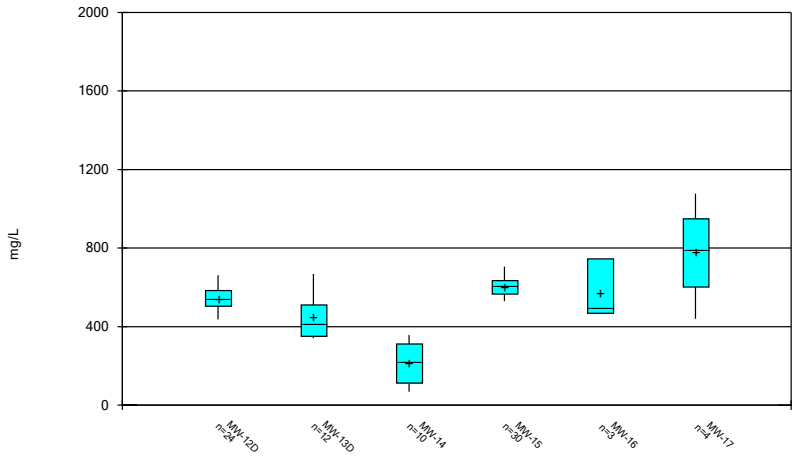
Box & Whiskers Plot



Constituent: Sulfate Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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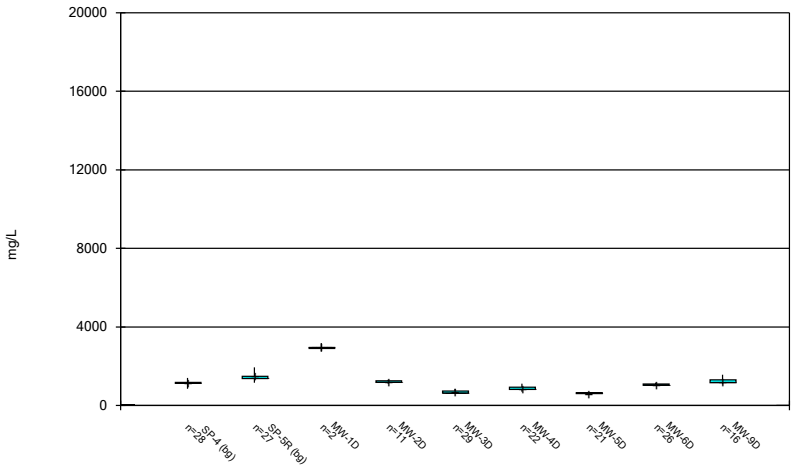
Box & Whiskers Plot



Constituent: Sulfate Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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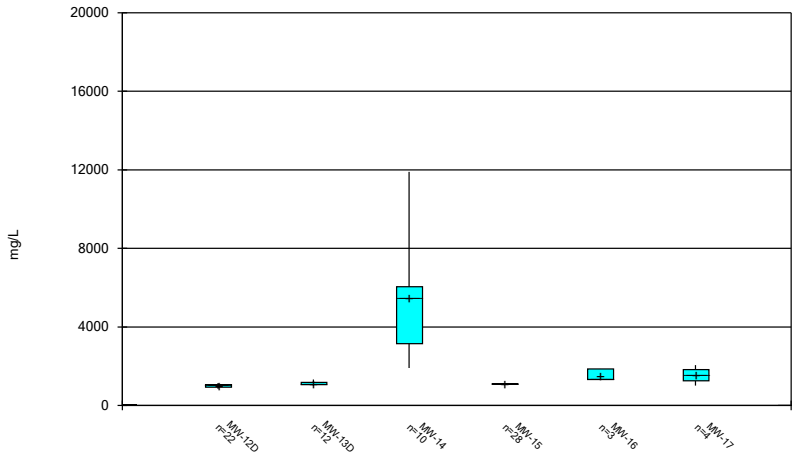
Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 6/20/2025 7:49 AM View: Appendix A
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

FIGURE C

Outlier Summary and Tukey's Outlier Test

Outlier Summary

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/20/2025, 7:47 AM

	MW-3D Boron (mg/L)	MW-6D Calcium (mg/L)	MW-9D Calcium (mg/L)	MW-15 Calcium (mg/L)	SP-4 Chloride (mg/L)	SP-5R Chloride (mg/L)	MW-9D Chloride (mg/L)	MW-12D Chloride (mg/L)	MW-9D pH, field (SU)	MW-15 pH, field (SU)
3/15/2017					52 (O)	62 (O)				
5/18/2017						1834 (O)				
6/27/2017							232 (o)			
7/12/2017										
8/4/2017			337 (o)							
8/17/2017			328 (o)				216 (o)			
8/30/2017			354 (o)							
9/13/2017			366 (o)				293 (o)			
10/4/2017			304 (o)				180 (o)			
10/11/2017			288 (o)				314 (o)			
5/30/2018								91 (o)		
7/31/2018										
10/22/2018				250 (o)						
2/27/2019		360 (o)								
5/7/2019	1.56 (o)									
8/26/2019										10.51 (o)
6/30/2020									10.87 (o)	
10/21/2020										11.45 (o)

	MW-5D Sulfate (mg/L)	MW-9D Sulfate (mg/L)	SP-5R Total Dissolved Solids [TDS] (mg/L)	MW-9D Total Dissolved Solids [TDS] (mg/L)
3/15/2017				
5/18/2017			3008 (O)	
6/27/2017				
7/12/2017		1048 (o)		2146 (o)
8/4/2017		1217 (o)		2256 (o)
8/17/2017		1193 (o)		2486 (o)
8/30/2017		1192 (o)		2392 (o)
9/13/2017		1244 (o)		2826 (o)
10/4/2017		1079 (o)		2296 (o)
10/11/2017		1075 (o)		2188 (o)
5/30/2018				
7/31/2018	662 (o)			
10/22/2018				
2/27/2019				
5/7/2019				
8/26/2019				
6/30/2020				
10/21/2020				

Tukey's Outlier Test - All Results (No Significant)

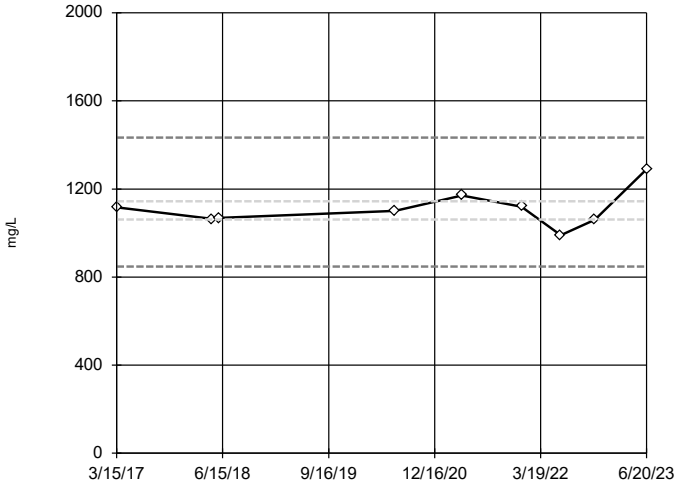
Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/19/2025, 12:44 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Calcium (mg/L)	MW-17	No	n/a	NP	NaN	8	417.9	277.8	ln(x)	ShapiroWilk
Chloride (mg/L)	MW-2D	No	n/a	NP	NaN	9	13.88	1.688	x^3	ShapiroWilk
Chloride (mg/L)	MW-13D	No	n/a	NP	NaN	9	5.878	2.04	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-2D	No	n/a	NP	NaN	9	1224	44.27	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-13D	No	n/a	NP	NaN	9	1109	84.41	ln(x)	ShapiroWilk

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Tukey's Outlier Screening

MW-13D



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1434, low cutoff = 848, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 6/19/2025 12:43 PM View: Outliers - Intrawell

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Tukey's Outlier Test - Upgradient Wells - Significant Results

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/20/2025, 8:11 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Fluoride (mg/L)	**SP-4,SP-5R**	**Yes**	**4,4,2.1,4.086,1.747,4.17,0.5,1.535,4.11,4.39**	**NP**	**NaN**	**60**	**3.181**	**0.6066**	**x^2**	**ShapiroFrancia**

Tukey's Outlier Test - Upgradient Wells - All Results

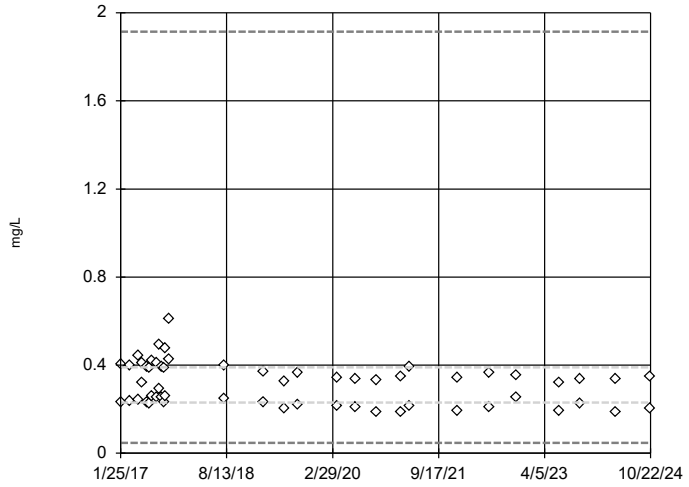
Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/20/2025, 8:11 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Boron (mg/L)	SP-4,SP-5R	No	n/a	NP	NaN	58	0.312	0.09383	ln(x)	ShapiroFrancia
Fluoride (mg/L)	**SP-4,SP-5R**	**Yes**	**4,4,2.1,4.086,1.747,4.17,0.5,1.535,4.11,4.39**	**NP**	**NaN**	**60**	**3.181**	**0.6066**	**x^2**	**ShapiroFrancia**
pH, field (SU)	SP-4,SP-5R	No	n/a	NP	NaN	56	7.855	0.52	ln(x)	ShapiroFrancia
Sulfate (mg/L)	SP-4,SP-5R	No	n/a	NP	NaN	30	38.29	35.79	ln(x)	ShapiroWilk

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Tukey's Outlier Screening, Pooled Background

SP-4,SP-5R



n = 58

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

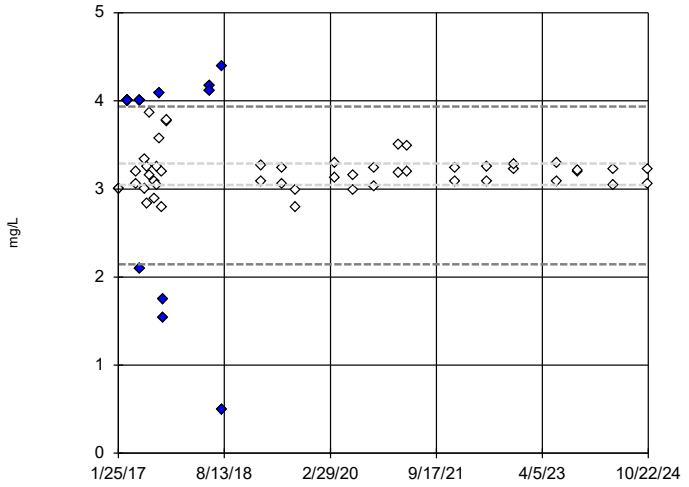
High cutoff = 1.914, low cutoff = 0.04676, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 6/20/2025 8:09 AM View: Outliers - Interwell
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening, Pooled Background

SP-4,SP-5R



n = 60

Outliers are drawn as solid.
Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

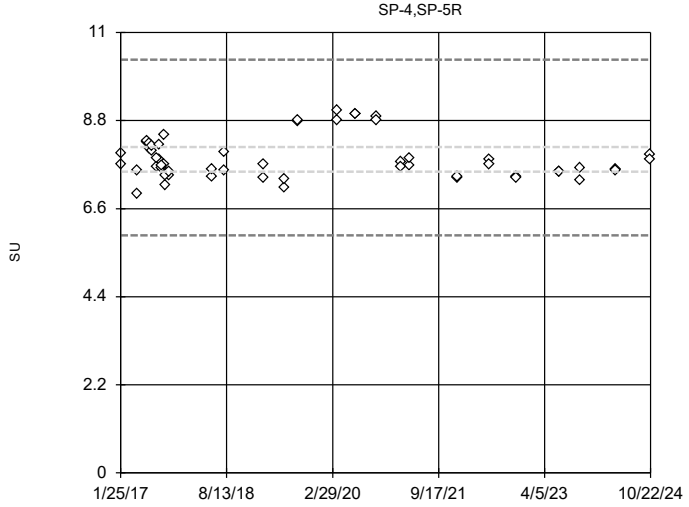
High cutoff = 3.936, low cutoff = 2.146, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 6/20/2025 8:09 AM View: Outliers - Interwell
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening, Pooled Background

SP-4,SP-5R



n = 56

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

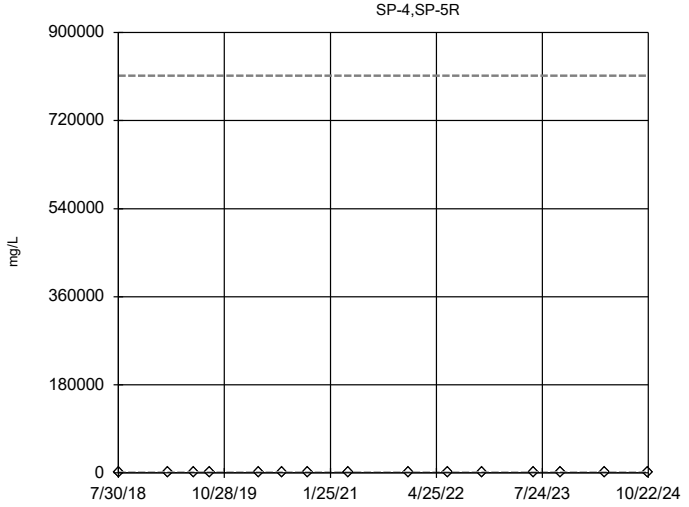
High cutoff = 10.32, low cutoff = 5.929, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 6/20/2025 8:09 AM View: Outliers - Interwell
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening, Pooled Background

SP-4,SP-5R



n = 30

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

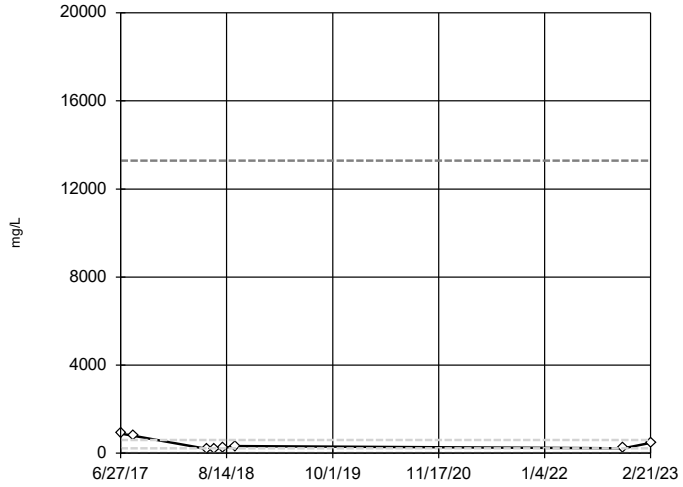
High cutoff = 811763, low cutoff = 0.000311, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 6/20/2025 8:09 AM View: Outliers - Interwell
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-17



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 13288, low cutoff = 9.962, based on IQR multiplier of 3.

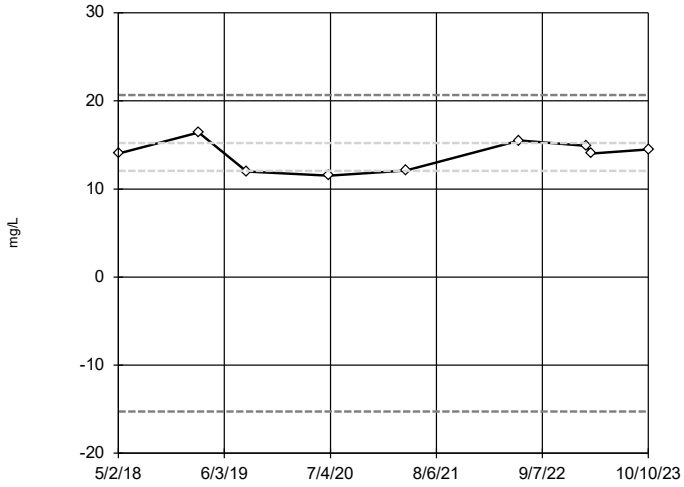
Constituent: Calcium Analysis Run 6/19/2025 12:43 PM View: Outliers - Intrawell

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 9

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 20.66, low cutoff = -15.25, based on IQR multiplier of 3.

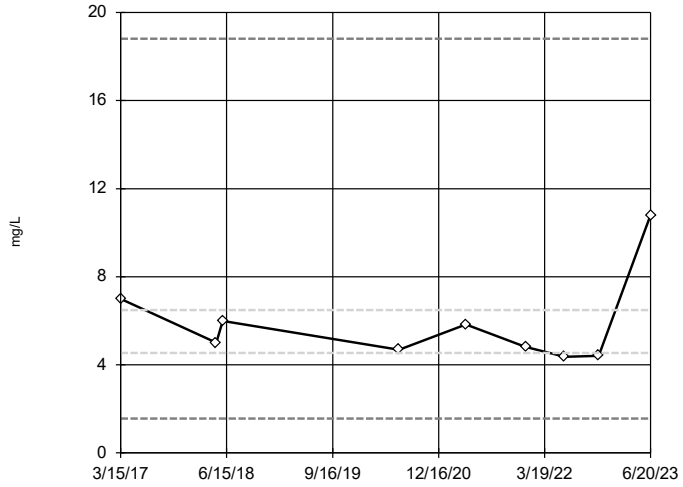
Constituent: Chloride Analysis Run 6/19/2025 12:43 PM View: Outliers - Intrawell

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-13D



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 18.81, low cutoff = 1.565, based on IQR multiplier of 3.

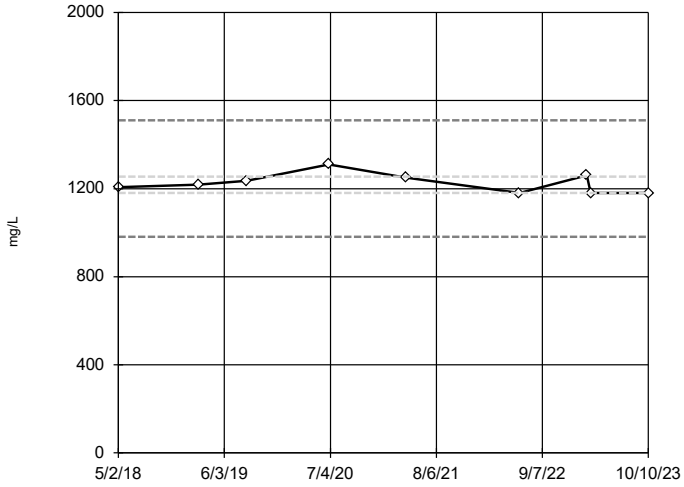
Constituent: Chloride Analysis Run 6/19/2025 12:43 PM View: Outliers - Intrawell

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Tukey's Outlier Screening

MW-2D



n = 9

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1510, low cutoff = 980.9, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 6/19/2025 12:43 PM View: Outliers - Intrawell

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

FIGURE D

Intrawell PLs

Intrawell Prediction Limits - All Results

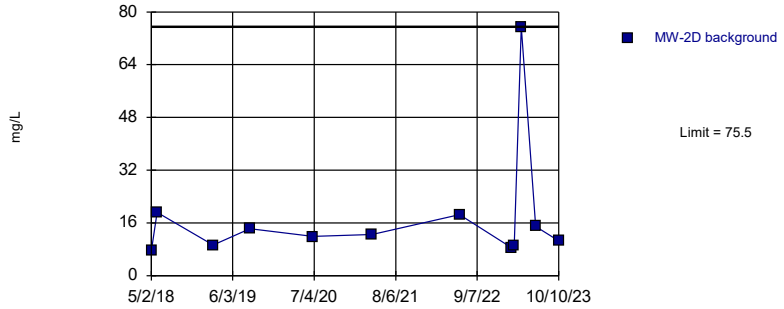
Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 8/21/2025, 3:22 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Calcium (mg/L)	MW-2D	75.5	n/a	n/a	1 future	n/a	12	n/a	n/a	0	n/a	n/a	0.01077	NP Intra (normality) 1 of 2
Calcium (mg/L)	MW-3D	172.2	n/a	n/a	1 future	n/a	26	11.37	0.7931	0	None	sqrt(x)	0.0006839	Param Intra 1 of 2
Calcium (mg/L)	MW-4D	213.3	n/a	n/a	1 future	n/a	20	180	14.42	0	None	No	0.0006839	Param Intra 1 of 2
Calcium (mg/L)	MW-5D	164	n/a	n/a	1 future	n/a	20	134.5	12.79	0	None	No	0.0006839	Param Intra 1 of 2
Calcium (mg/L)	MW-6D	264	n/a	n/a	1 future	n/a	22	192	31.72	0	None	No	0.0006839	Param Intra 1 of 2
Calcium (mg/L)	MW-9D	274.2	n/a	n/a	1 future	n/a	13	178.1	37.14	0	None	No	0.0006839	Param Intra 1 of 2
Calcium (mg/L)	MW-12D	164.8	n/a	n/a	1 future	n/a	20	9.369	1.504	0	None	sqrt(x)	0.0006839	Param Intra 1 of 2
Calcium (mg/L)	MW-13D	249.3	n/a	n/a	1 future	n/a	12	192.6	21.46	0	None	No	0.0006839	Param Intra 1 of 2
Calcium (mg/L)	MW-14	182.2	n/a	n/a	1 future	n/a	14	90.94	36.04	0	None	No	0.0006839	Param Intra 1 of 2
Calcium (mg/L)	MW-15	146.4	n/a	n/a	1 future	n/a	25	97.14	22.17	0	None	No	0.0006839	Param Intra 1 of 2
Calcium (mg/L)	MW-17	2473	n/a	n/a	1 future	n/a	8	5.861	0.6114	0	None	ln(x)	0.0006839	Param Intra 1 of 2
Chloride (mg/L)	MW-2D	18.97	n/a	n/a	1 future	n/a	9	13.88	1.688	0	None	No	0.0006839	Param Intra 1 of 2
Chloride (mg/L)	MW-3D	14.98	n/a	n/a	1 future	n/a	12	12.98	0.7567	0	None	No	0.0006839	Param Intra 1 of 2
Chloride (mg/L)	MW-4D	42.55	n/a	n/a	1 future	n/a	20	28.36	6.157	0	None	No	0.0006839	Param Intra 1 of 2
Chloride (mg/L)	MW-5D	30.3	n/a	n/a	1 future	n/a	19	n/a	n/a	0	n/a	n/a	0.004832	NP Intra (normality) 1 of 2
Chloride (mg/L)	MW-6D	33.67	n/a	n/a	1 future	n/a	22	730843	244144	0	None	x^4	0.0006839	Param Intra 1 of 2
Chloride (mg/L)	MW-9D	106	n/a	n/a	1 future	n/a	13	n/a	n/a	0	n/a	n/a	0.009692	NP Intra (normality) 1 of 2
Chloride (mg/L)	MW-12D	23.02	n/a	n/a	1 future	n/a	19	16.13	2.949	0	None	No	0.0006839	Param Intra 1 of 2
Chloride (mg/L)	MW-13D	10.8	n/a	n/a	1 future	n/a	9	n/a	n/a	0	n/a	n/a	0.01809	NP Intra (normality) 1 of 2
Chloride (mg/L)	MW-15	46.81	n/a	n/a	1 future	n/a	12	n/a	n/a	0	n/a	n/a	0.01077	NP Intra (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-2D	1358	n/a	n/a	1 future	n/a	9	1224	44.27	0	None	No	0.0006839	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-3D	810.7	n/a	n/a	1 future	n/a	26	689.2	55.02	0	None	No	0.0006839	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-4D	1023	n/a	n/a	1 future	n/a	19	859.1	70.4	0	None	No	0.0006839	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-5D	686.7	n/a	n/a	1 future	n/a	18	630.2	23.9	0	None	No	0.0006839	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-6D	1157	n/a	n/a	1 future	n/a	23	1059	43.27	0	None	No	0.0006839	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-9D	1714	n/a	n/a	1 future	n/a	13	35.4	2.318	0	None	sqrt(x)	0.0006839	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-12D	1187	n/a	n/a	1 future	n/a	19	1011	75.26	0	None	No	0.0006839	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-13D	1363	n/a	n/a	1 future	n/a	9	1109	84.41	0	None	No	0.0006839	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-15	1152	n/a	n/a	1 future	n/a	25	1086	29.45	0	None	No	0.0006839	Param Intra 1 of 2

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Prediction Limit

Intrawell Non-parametric, MW-2D



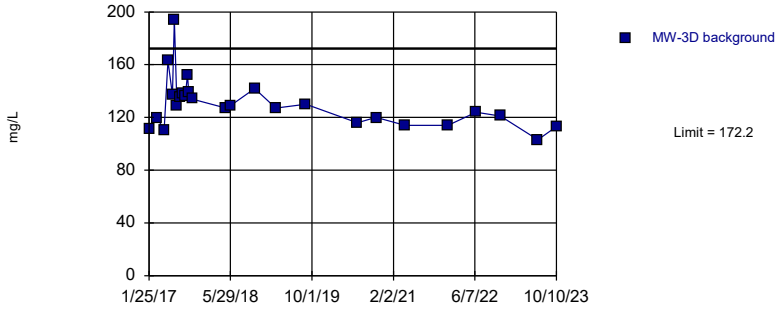
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:20 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-3D



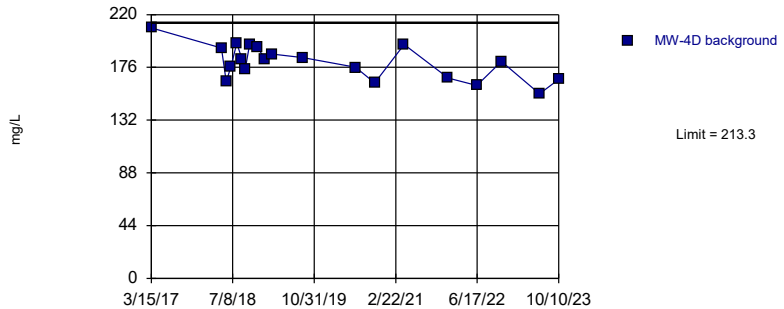
Background Data Summary (based on square root transformation): Mean=11.37, Std. Dev.=0.7931, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9059, critical = 0.891. Kappa = 2.209 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:20 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-4D



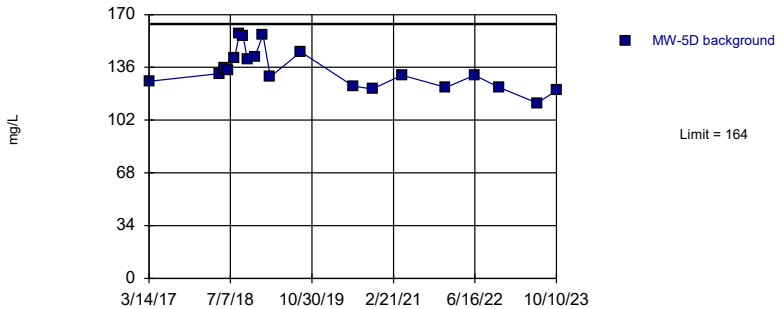
Background Data Summary: Mean=180, Std. Dev.=14.42, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9727, critical = 0.868. Kappa = 2.306 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:20 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-5D



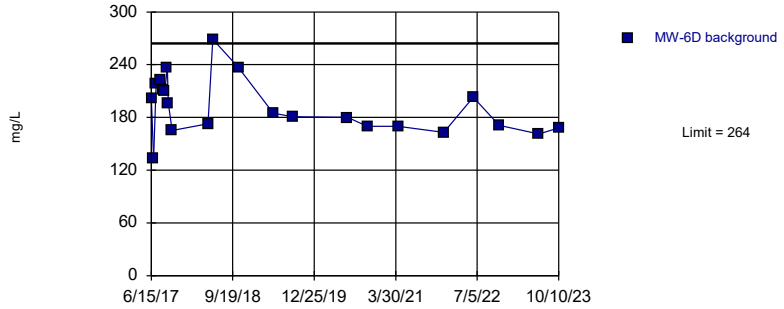
Background Data Summary: Mean=134.5, Std. Dev.=12.79, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9427, critical = 0.868. Kappa = 2.306 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:20 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-6D



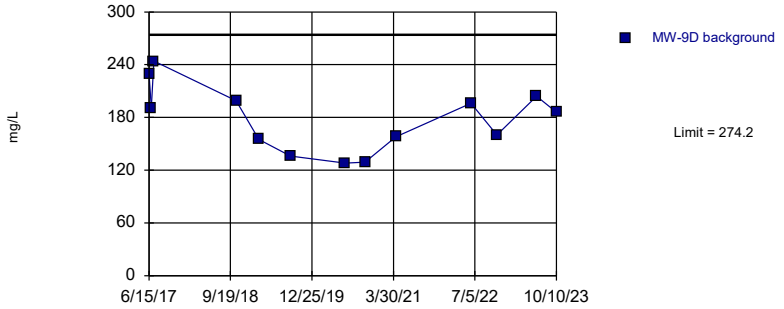
Background Data Summary: Mean=192, Std. Dev.=31.72, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9556, critical = 0.878. Kappa = 2.271 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:20 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-9D



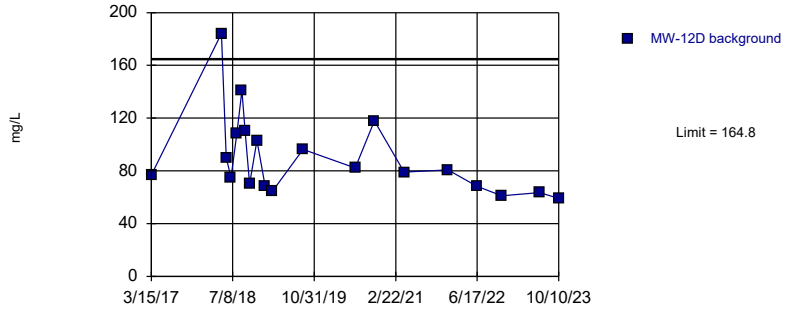
Background Data Summary: Mean=178.1, Std. Dev.=37.14, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9468, critical = 0.866. Kappa = 2.587 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:20 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-12D



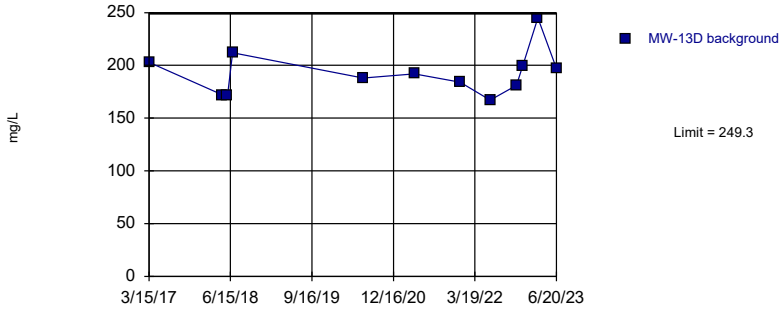
Background Data Summary (based on square root transformation): Mean=9.369, Std. Dev.=1.504, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8848, critical = 0.868. Kappa = 2.306 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:20 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-13D



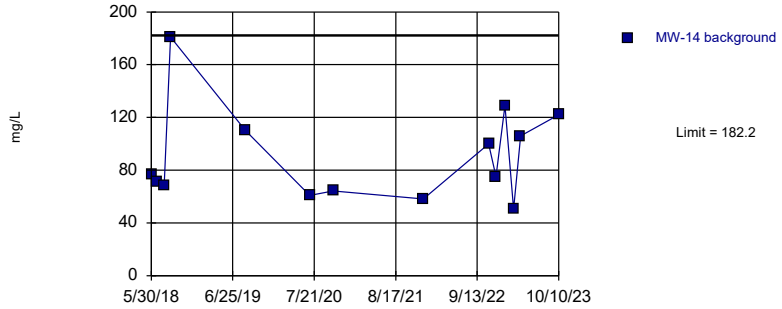
Background Data Summary: Mean=192.6, Std. Dev.=21.46, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9069, critical = 0.859. Kappa = 2.643 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-14



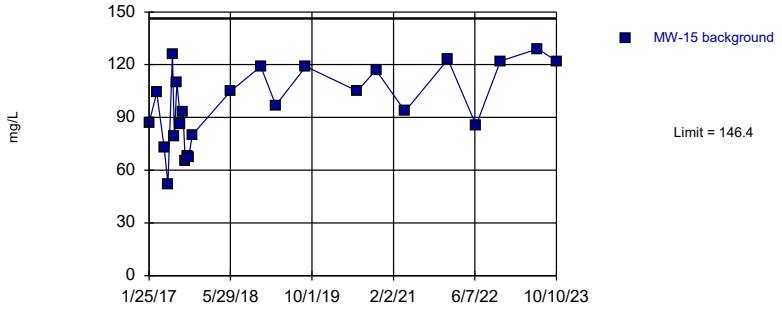
Background Data Summary: Mean=90.94, Std. Dev.=36.04, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8841, critical = 0.874. Kappa = 2.532 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-15



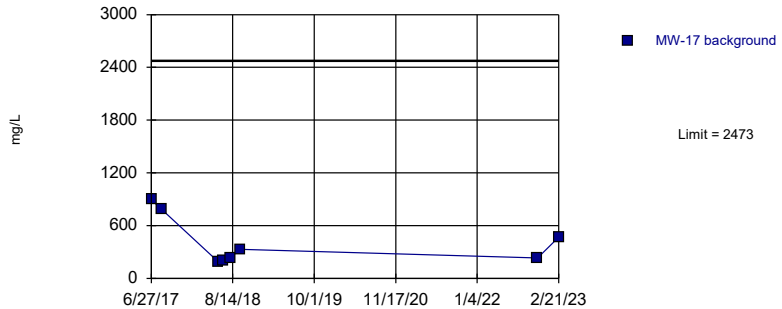
Background Data Summary: Mean=97.14, Std. Dev.=22.17, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9467, critical = 0.888. Kappa = 2.22 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-17



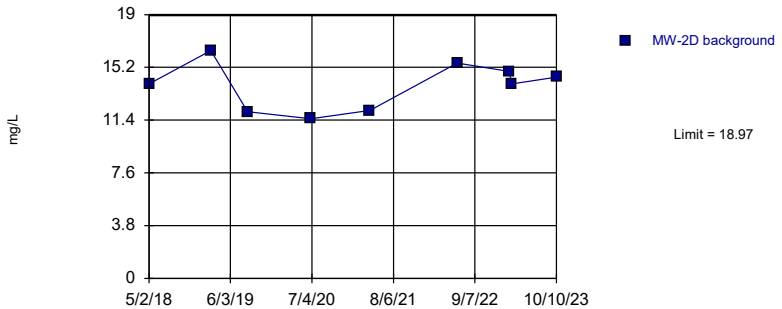
Background Data Summary (based on natural log transformation): Mean=5.861, Std. Dev.=0.6114, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8635, critical = 0.851. Kappa = 3.193 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Calcium Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-2D



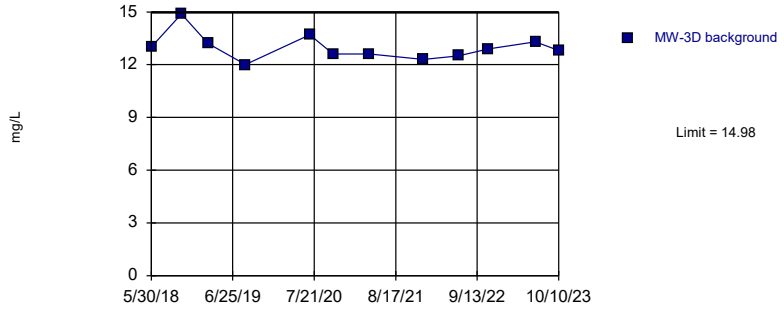
Background Data Summary: Mean=13.88, Std. Dev.=1.688, n=9. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9368, critical = 0.859. Kappa = 3.015 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Chloride Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-3D



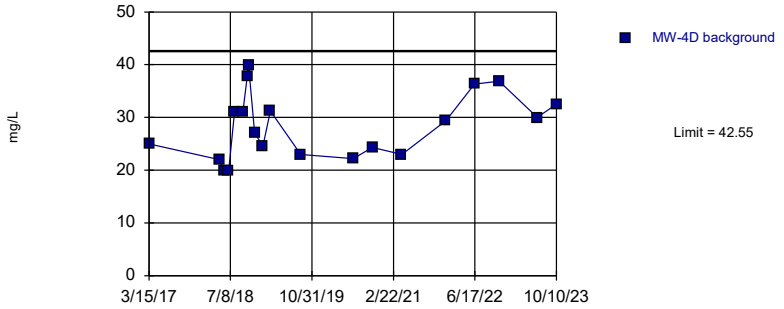
Background Data Summary: Mean=12.98, Std. Dev.=0.7567, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8922, critical = 0.859. Kappa = 2.643 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Chloride Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-4D



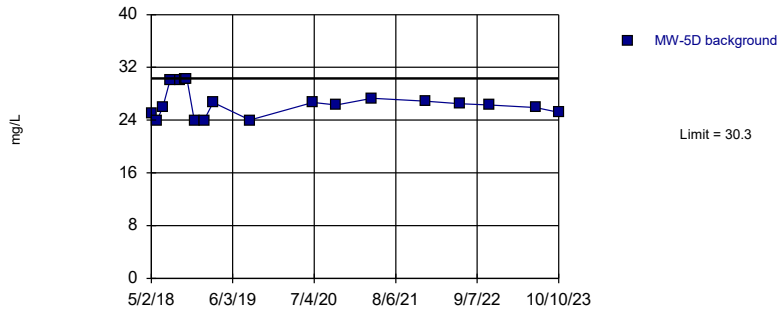
Background Data Summary: Mean=28.36, Std. Dev.=6.157, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9355, critical = 0.868. Kappa = 2.306 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Chloride Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Non-parametric, MW-5D



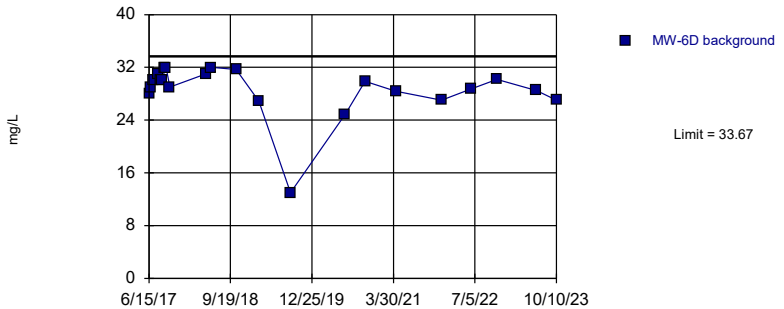
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 19 background values. Well-constituent pair annual alpha = 0.009641. Individual comparison alpha = 0.004832 (1 of 2). Assumes 1 future value.

Constituent: Chloride Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-6D



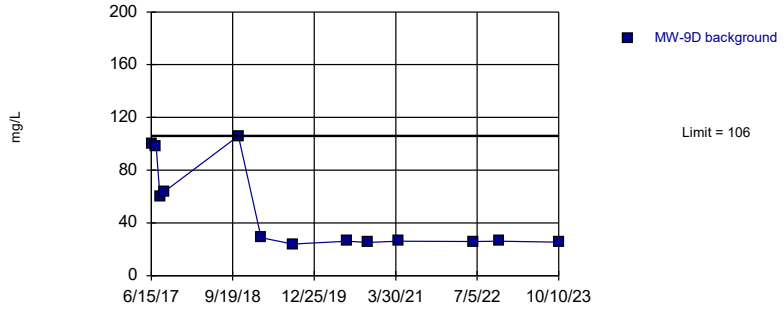
Background Data Summary (based on x^4 transformation): Mean=730843, Std. Dev.=244144, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9232, critical = 0.878. Kappa = 2.271 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Chloride Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Non-parametric, MW-9D



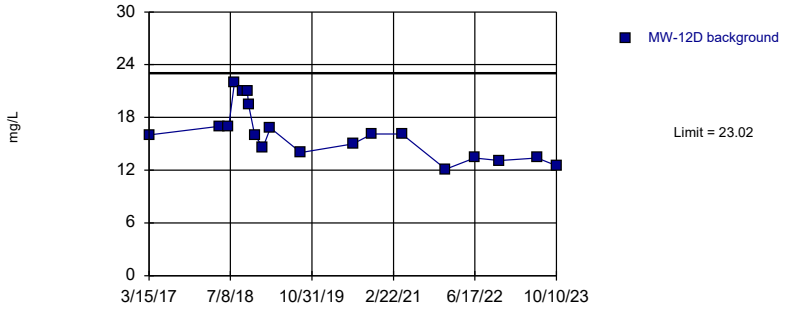
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2). Assumes 1 future value.

Constituent: Chloride Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-12D



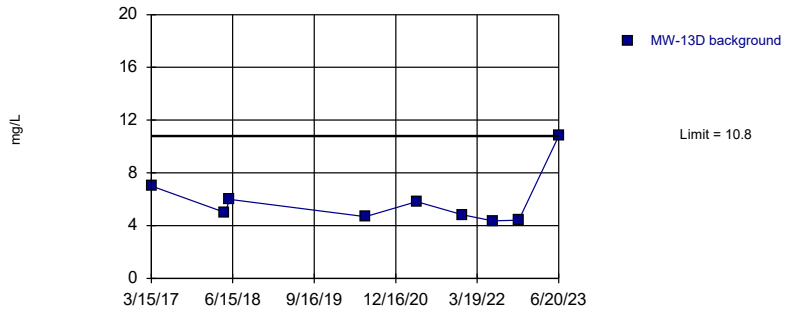
Background Data Summary: Mean=16.13, Std. Dev.=2.949, n=19. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9234, critical = 0.901. Kappa = 2.334 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Chloride Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Non-parametric, MW-13D



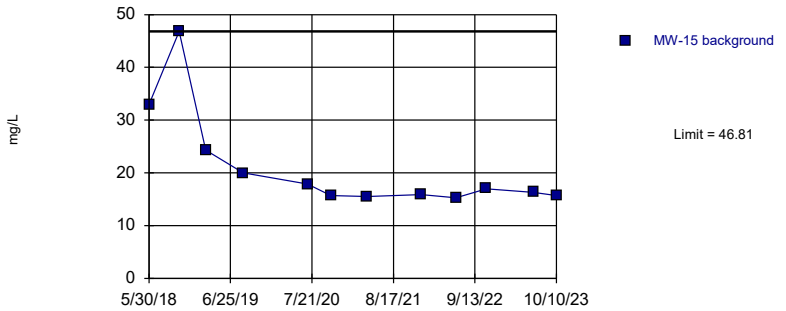
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 9 background values. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Assumes 1 future value.

Constituent: Chloride Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Non-parametric, MW-15



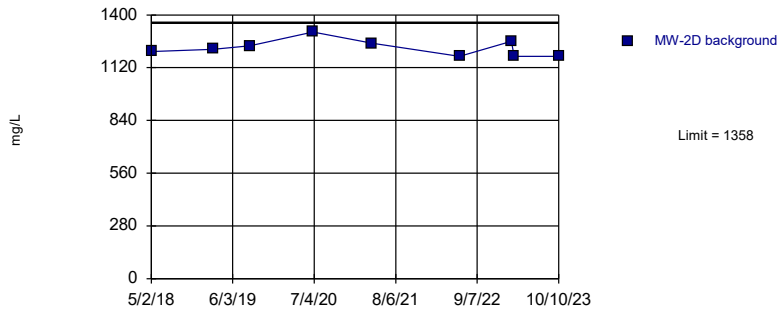
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Assumes 1 future value.

Constituent: Chloride Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-2D



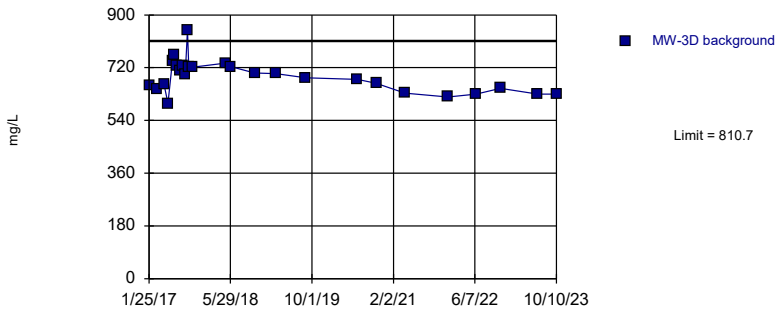
Background Data Summary: Mean=1224, Std. Dev.=44.27, n=9. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9058, critical = 0.859. Kappa = 3.015 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limit
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-3D



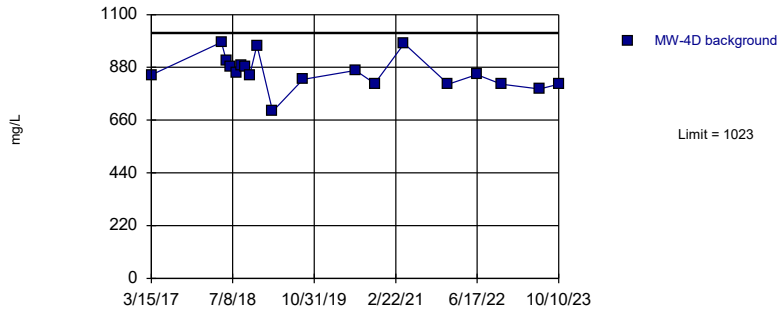
Background Data Summary: Mean=689.2, Std. Dev.=55.02, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9479, critical = 0.891. Kappa = 2.209 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limit
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-4D



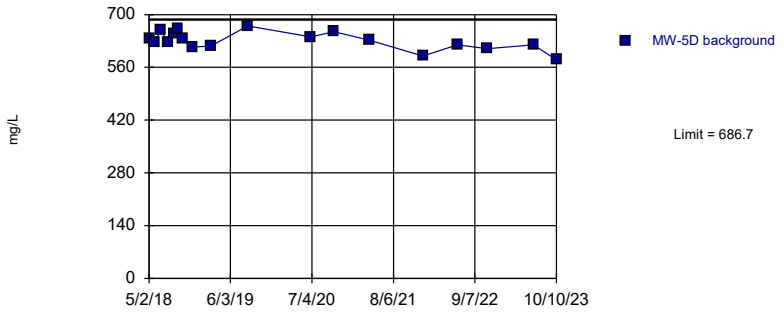
Background Data Summary: Mean=859.1, Std. Dev.=70.4, n=19. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9395, critical = 0.901. Kappa = 2.334 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limit
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-5D



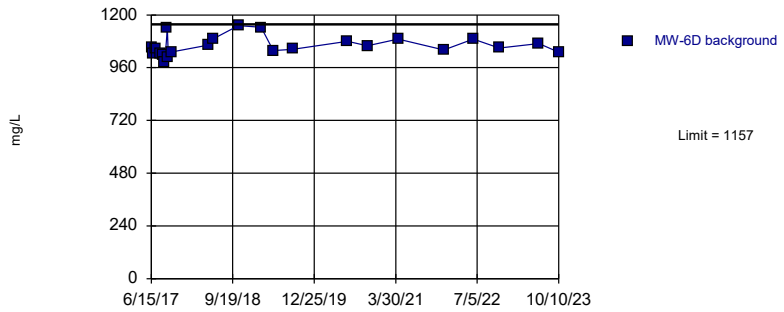
Background Data Summary: Mean=630.2, Std. Dev.=23.9, n=18. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9758, critical = 0.897. Kappa = 2.363 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limit
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-6D



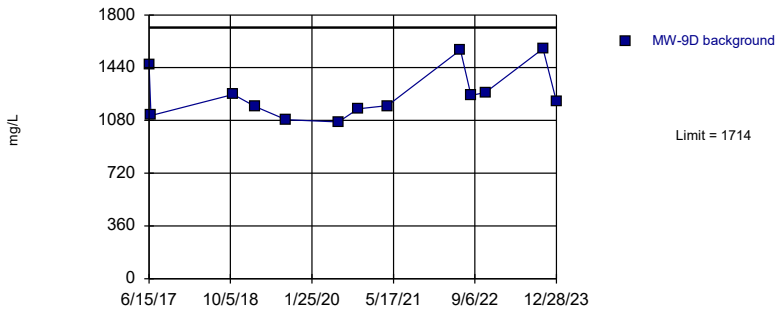
Background Data Summary: Mean=1059, Std. Dev.=43.27, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9344, critical = 0.881. Kappa = 2.254 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limit
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-9D



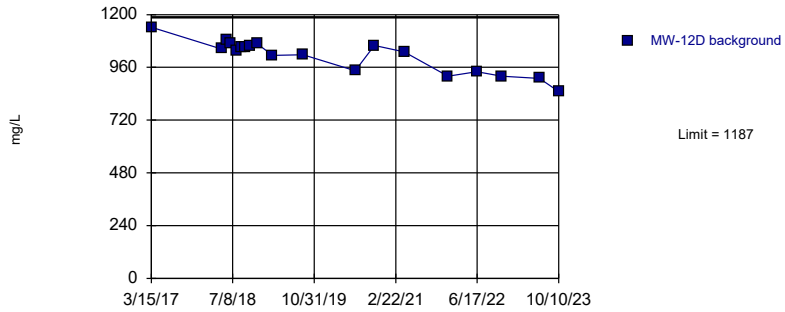
Background Data Summary (based on square root transformation): Mean=35.4, Std. Dev.=2.318, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8739, critical = 0.866. Kappa = 2.587 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limit
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-12D



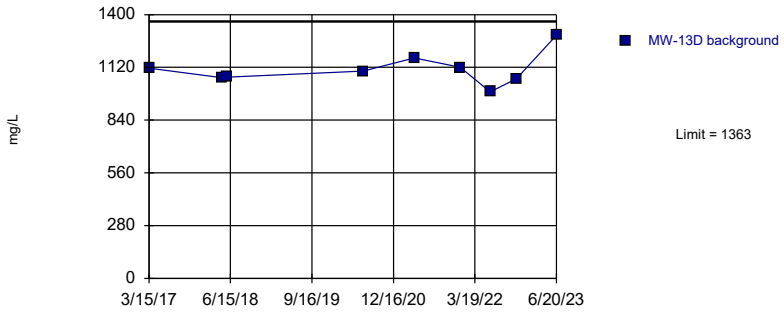
Background Data Summary: Mean=1011, Std. Dev.=75.26, n=19. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9248, critical = 0.901. Kappa = 2.334 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limit
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-13D



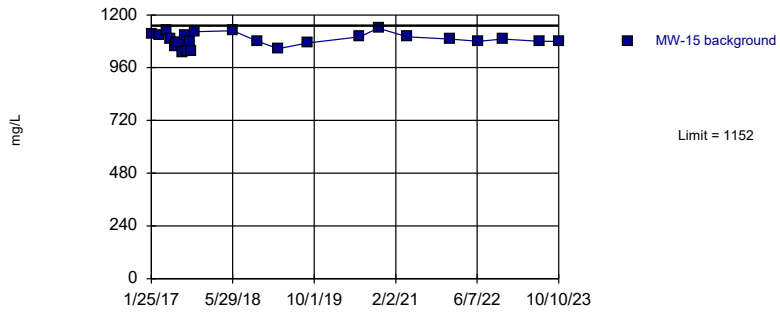
Background Data Summary: Mean=1109, Std. Dev.=84.41, n=9. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9115, critical = 0.859. Kappa = 3.015 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limit
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Prediction Limit

Intrawell Parametric, MW-15



Background Data Summary: Mean=1086, Std. Dev.=29.45, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9633, critical = 0.888. Kappa = 2.22 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006839. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 8/21/2025 3:21 PM View: Intrawell Prediction Limit

Northeastern Landfill Client: Geosyntec Data: Northeastern LF

FIGURE E

Interwell PLs

Interwell Prediction Limits - All Results

Northeastern Landfill Client: Geosyntec Data: Northeastern LF Printed 6/20/2025, 8:40 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	n/a	0.5202	n/a	n/a	11 future	n/a	58	0.5525	0.08283	0	None	sqrt(x)	0.0006839	Param Inter 1 of 2
Fluoride (mg/L)	n/a	4.39	n/a	n/a	11 future	n/a	60	n/a	n/a	1.667	n/a	n/a	0.0005156	NP Inter (normality) 1 of 2
pH, field (SU)	n/a	9.05	6.96	n/a	11 future	n/a	56	n/a	n/a	0	n/a	n/a	0.001201	NP Inter (normality) 1 of 2
Sulfate (mg/L)	n/a	83	n/a	n/a	11 future	n/a	30	n/a	n/a	0	n/a	n/a	0.001854	NP Inter (normality) 1 of 2

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Prediction Limit

Interwell Parametric



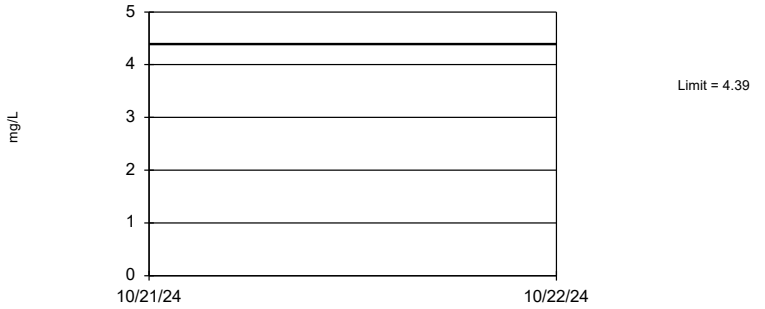
Background Data Summary (based on square root transformation): Mean=0.5525, Std. Dev.=0.08283, n=58. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9479, critical = 0.944. Kappa = 2.038 (c=7, w=11, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0006839. Assumes 11 future values.

Constituent: Boron Analysis Run 6/20/2025 8:39 AM View: Interwell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



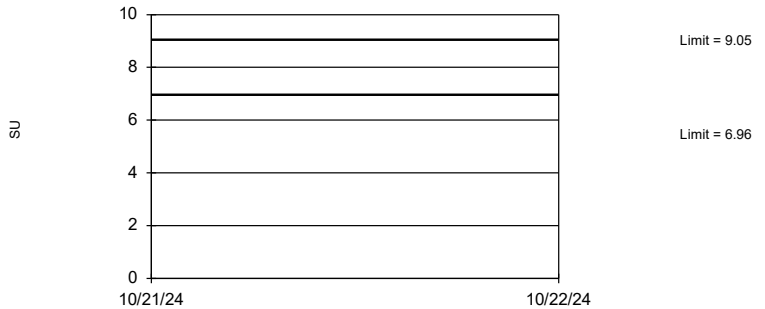
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. 1.667% NDs. Annual per-constituent alpha = 0.01128. Individual comparison alpha = 0.0005156 (1 of 2). Assumes 11 future values.

Constituent: Fluoride Analysis Run 6/20/2025 8:39 AM View: Interwell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 56 background values. Annual per-constituent alpha = 0.02625. Individual comparison alpha = 0.001201 (1 of 2). Assumes 11 future values.

Constituent: pH, field Analysis Run 6/20/2025 8:39 AM View: Interwell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

Sanitas™ v.10.0.26 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 30 background values. Annual per-constituent alpha = 0.04. Individual comparison alpha = 0.001854 (1 of 2). Assumes 11 future values.

Constituent: Sulfate Analysis Run 6/20/2025 8:39 AM View: Interwell Prediction Limits
Northeastern Landfill Client: Geosyntec Data: Northeastern LF

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Memorandum

Date:	February 28, 2025
To:	David Miller (AEP)
Copies to:	Pryce Warren (AEP)
From:	Allison Kreinberg (Geosyntec)
Subject:	Evaluation of Detection Monitoring Data at Northeastern Plant's Landfill

The second semiannual detection monitoring event of 2024 at the Landfill, an existing CCR unit at the Northeastern Power Plant located in Oologah, Oklahoma, was completed on October 22, 2024 in accordance with Oklahoma Department of Environmental Quality (ODEQ) rules regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (OAC 252.517).

Background values for the Landfill 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 additional events were compared to the existing background dataset, and the background dataset was updated as appropriate. In December 2024, the background dataset was also updated to reflect the inclusion of background wells SP-4 and SP-5R in the Landfill groundwater monitoring network at the request of ODEQ.[1] Upper prediction limits (UPLs) were calculated for each Appendix A parameter to represent background values. A lower prediction limits (LPL) was 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 10, 2024.

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. While the prediction limits were calculated for a one-of-two retesting procedure,

[1] ODEQ. 2024. *Response to Background Wells – 2023 Annual Groundwater Monitoring Report. Public Service Company of Oklahoma – Northeastern Power Station Landfill*. Oklahoma Department of Environmental Quality. October.

statistically significant increases (SSIs) were conservatively assumed if the October 2024 sample was above the UPL or, in the case of pH, below the lower prediction limit.

Detection monitoring results and the relevant background values are compared in Table 1 and noted exceedances are described in the list below.

- Boron concentrations were above the interwell UPL of 0.528 mg/L at MW-3D (0.815 milligram per liter [mg/L]), MW-4D (0.583 mg/L), MW-6D (2.31 mg/L), MW-9D (4.85 mg/L), MW-12D (5.77 mg/L), and MW-15 (6.19 mg/L). Therefore, SSIs over background are concluded for boron at MW-3D, MW-4D, MW-6D, MW-9D, MW-12D, and MW-15.

- Sulfate concentrations were above the interwell UPL of 83.0 mg/L at MW-3D (164 mg/L), MW-4D (302 mg/L), MW-5D (123 mg/L), MW-6D (443 mg/L), MW-9D (546 mg/L), MW-12D (474 mg/L), and MW-15 (608 mg/L). Therefore, SSIs over background are concluded for sulfate at MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-12D, and MW-15.

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 Evaluation
Detection Summary Memorandum
Northeastern Plant – Landfill

Analyte	Unit	Description	MW-3D	MW-4D	MW-5D	MW-6D	MW-9D	MW-12D	MW-15
			10/22/2024	10/22/2024	10/22/2024	10/22/2024	10/22/2024	10/22/2024	10/22/2024
Boron	mg/L	Interwell Background Value (UPL)	0.528						
		Analytical Result	**0.815**	**0.583**	0.409	**2.31**	**4.85**	**5.77**	**6.19**
Calcium	mg/L	Intrawell Background Value (UPL)	172	213	164	263	273	164	146
		Analytical Result	117	209	121	90.8	91.4	101	124
Chloride	mg/L	Intrawell Background Value (UPL)	15.0	42.4	30.3	33.6	106	22.9	46.8
		Analytical Result	13.0	37.6	25.6	27.0	23.4	12.6	15.7
Fluoride	mg/L	Interwell Background Value (UPL)	4.39						
		Analytical Result	0.81	0.25	0.58	0.81	0.82	1.71	1.28
pH	SU	Interwell Background Value (UPL)	9.1						
		Interwell Background Value (LPL)	7.0						
		Analytical Result	7.3	7.1	7.1	7.4	8.3	8.2	8.2
Sulfate	mg/L	Interwell Background Value (UPL)	83.0						
		Analytical Result	**164**	**302**	**123**	**443**	**546**	**474**	**608**
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	809	1,021	686	1,156	1,706	1,184	1,151
		Analytical Result	590	860	560	1,100	1,160	900	1,080

Notes:
1. Bold values exceed the background value.
2. Background values are shaded gray.
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 10, 2024 *Statistical Analysis Summary – Background Update Calculations* report, is appropriate for evaluating the groundwater monitoring data for the Northeastern Landfill 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**	**03.01.2025**
License Number	Licensing State	Date

APPENDIX 3

Alternative Source Demonstrations

Geosyntec consultants

engineers | scientists | innovators

ALTERNATIVE SOURCE DEMONSTRATION REPORT

2025 1st SEMIANNUAL EVENT
STATE CCR RULE

Northeastern Power Plant
Stations 3 and 4 Landfill
Permit No. 3566010
Oologah, Oklahoma

Prepared for

American Electric Power
1 Riverside Plaza
Columbus, Ohio 43215-2372

Prepared by

Geosyntec Consultants, Inc.
500 West Wilson Bridge Road, Suite 250
Worthington, Ohio 43085

Project CHA1147

December 2025

Geosyntec consultants

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Attachment B Landfill CCR Material SPLP Analysis

Attachment C MW-14 Boring Log and Monitoring Well Installation Log

Attachment D Laboratory Analytical Report – Mineralogy, Inc.

Attachment E Certification by a Qualified Professional Engineer

LIST OF ACRONYMS

amsl	above mean sea level
ASD	alternative source demonstration
BAP	bottom ash pond
bgs	below ground surface
CCR	coal combustion residuals
CEC	cation exchange capacity
cm/sec	centimeters per second
EPRI	Electric Power Research Institute
ft	feet
GWPS	groundwater protection standard
HDPE	high-density polyethylene
LCL	lower confidence limit
mEq/100g	milliequivalents per 100 grams of material
mg/kg	milligram per kilogram
mg/L	milligram per liter
ODEQ	Oklahoma Department of Environmental Quality
OGS	Oklahoma Geological Survey
OAC	Oklahoma Administrative Code
SCB	slag-cement-bentonite
SSL	statistically significant level
XRD	X-ray diffraction
XRF	X-ray fluorescence

1. INTRODUCTION AND SUMMARY

This alternative source demonstration (ASD) report has been prepared to address statistically significant levels (SSL) of lithium in the groundwater monitoring network for the Stations 3 and 4 Landfill coal combustion residuals (CCR) unit, located at the Northeastern Power Station in Oologah, Rogers County, Oklahoma, following the first semiannual assessment monitoring event of 2025.

In March 2025, a semiannual assessment monitoring event was conducted at the Landfill in accordance with Oklahoma Administrative Code (OAC) § 252:517-9-6(d). The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. Confidence intervals were calculated for the Appendix B parameters at the compliance wells to assess whether these parameters were present at SSLs above the groundwater protection standards (GWPSs). An SSL was concluded if the lower confidence limit (LCL) of a parameter exceeded the GWPS (i.e., if the entire confidence interval exceeded the GWPS). The LCL for lithium exceeded the GWPS of 0.163 milligrams per liter (mg/L) at MW-14 (0.248 mg/L), resulting in identification of an SSL (Geosyntec 2025a).

SSLs exceeding the GWPS of 0.100 mg/L were also identified for molybdenum at monitoring locations MW-2D (0.467 mg/L), MW-12D (0.591 mg/L), and MW-15 (0.550 mg/L). An initial evaluation was completed to assess the potential for alternative sources; an alternative source for molybdenum was not identified at this time. As such, the molybdenum SSLs are not addressed in the scope of this report, and the Northeastern Landfill will initiate an assessment of corrective measures to address molybdenum at MW-2D, MW-12D, and MW-15 in accordance with OAC 252:517-9-6(g)(3).

1.1 CCR Rule Requirements

Oklahoma Department of Environmental Quality (ODEQ) regulations regarding assessment monitoring of CCR landfills and surface impoundments provide owners and operators with the option to make an ASD when an SSL is identified (OAC 252:517-9-6(g)(3)(B)). An owner or operator may:

> *Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions, must be certified to be accurate by a qualified professional engineer, and submitted to DEQ for approval. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this Section…*

Pursuant to OAC 252:517-9-6(g)(3)(B), Geosyntec Consultants, Inc. (Geosyntec) has prepared this ASD report to document that the SSL identified for lithium at MW-14 is from a source other than the Landfill.

1.2 Demonstration of Alternative Sources

An evaluation was completed to assess possible alternative sources to which the identified SSLs could be attributed. Alternative sources were categorized into the following five types, based on methodology provided by the Electric Power Research Institute (EPRI 2017):

- ASD Type I: Sampling Causes
- ASD Type II: Laboratory Causes
- ASD Type III: Statistical Evaluation Causes
- ASD Type IV: Natural Variation
- ASD Type V: Alternative Source (i.e., anthropogenic impacts)

A demonstration was conducted to show that the SSL identified for lithium at MW-14 was based on a Type IV (natural variation) cause and not by a release from the Northeastern Landfill.

2. SUMMARY OF SITE CONDITIONS

The Landfill design and construction, regional geology, and groundwater monitoring system and flow conditions are described below.

2.1 Landfill Design and Construction

The Landfill was permitted by the Oklahoma State Department of Health in March 1978 (Oklahoma State Department of Health 1978). The Landfill permit has subsequently been modified and re-issued through the ODEQ. The Landfill currently operates under Permit No. 3566010 issued January 4, 2016.

The Landfill was constructed in a depression south of the Northeastern Power Station where gravel pit mining and/or limestone quarrying operations took place historically **(Figure 1**). Portions of the upper limestone appear to have been removed, primarily within the western portion of the Landfill. The permitted footprint of the Landfill includes a 44-acre CCR disposal area with a total disposal capacity of 2.463 million cubic yards. The total footprint of the Landfill includes a stormwater collection basin (Basin C), and a leachate impoundment between the Landfill and the basin (**Figure 1)**.

A dike structure was constructed along the south boundary of the Landfill to contain the waste and isolate the Landfill from the Verdigris River (**Figure 1**). This dike was initially built to an elevation of 610 feet above mean sea level (ft amsl) with a crest width of 10 to 12 feet and 3:1 side slope when the Northeastern Power Station was constructed (Terracon, 2012). An additional construction event raised the dike to the current crest elevations of greater than 630 ft amsl, with a crest width of approximately 25 feet, 3:1 interior slopes, and exterior side slopes ranging from approximately 4:1 to 2.5:1. The dike materials consist of red-brown clay with limestone gravel mixed with varying amounts of ash material and larger rock. Limestone with interbedded thin shale layers underlies the constructed dike, and shale underlies the limestone unit.

To control seepage of groundwater flowing beneath the Landfill and into the Verdigris River, a 2,200-foot-long slurry wall and 1,400-foot-long grout curtain were installed within the constructed dike on the southeast side of the Landfill (Terracon 2017). The slurry cutoff wall was constructed by excavating an approximately 3-foot-wide trench to the top of limestone bedrock (typically 20 to 25 feet below ground surface [ft bgs]) along the southern edge of the Landfill and pumping a slag-cement-bentonite (SCB) slurry into the trench. The grout curtain was installed by injecting grout to a maximum depth of approximately 40 ft bgs into 3-inch borings spaced as needed to effectively prevent seepage through approximately 1,400 feet of the 2,200-foot-long slurry cutoff wall. The construction of these features was completed in 2013.

In 2012, a 60-mil high-density polyethylene (HDPE) geomembrane intermediate liner and an overlying leachate collection system were installed over intermediate grades of previously placed waste to limit infiltration of precipitation and leachate through the waste mass. The intermediate liner system extends across approximately 33 acres of the Landfill (Terracon 2012) and slopes downward from west to east (towards the leachate impoundment) at grades from approximately

645 ft to 615 ft amsl. As of November 2024, waste was placed in Cell 1 of the Landfill, and the remainder of the Landfill (inactive Cells 2 to 4) was covered with a temporary geomembrane cover (rainflap) and temporary Wind Defender® geotextile cover (GEI Consultants, Inc. [GEI] 2024).

2.2 Regional Geologic Setting

Shallow bedrock in Rogers County consists predominantly of Pennsylvanian-age limestones, shales, and sandstones of the Marmaton Group, underlain by the Cherokee Group (Oklahoma Geological Survey [OGS] 2022; OGS 2008; Woodruff and Cooper 1928). The generalized stratigraphic column of the regional geology in the Site vicinity is summarized below:

Series	Group	Formation
Desmoinesian	Marmaton	Oologah
		Labette
		Fort Scott Limestone
	Cherokee	Senora
		Boggy
		Savanna

Regional geologic mapping information (OGS 2022) indicates that the majority of the Northeastern Power Station is directly underlain by the Oologah Formation, which is generally characterized as a medium to dark gray, massive to thinly bedded argillaceous limestone with a small amount of fissile shale interbedded (Oakes 1952; OGS 2022). The limestone is typically dense to moderately crystalline, and unjointed. In the Site vicinity, the Oologah Formation is approximately 80 to 100 feet thick.

The Oologah Formation overlies the Labette Formation, a grayish brown to dark gray, laminated clayshale. The clayshale contains some zones of weakly calcareous shale, and multiple horizons of sandy shale and sandstone. Iron concretions composed of hematite and/or siderite often occur throughout the formation (OGS 2022). The thickness of the Labette Formation typically ranges from approximately 180 to 250 feet thick (Oakes 1952).

The Labette Formation is underlain by the Fort Scott Formation which consists of three members, in descending order: the Higginsville Limestone; the Little Osage Shale; and the Blackjack Creek Limestone. The Fort Scott Formation limestone members consist primarily of a light gray, thin to medium, wavy-bedded fossiliferous wackestone and mudstone (OGS 2004).

2.3 Groundwater Monitoring Network and Flow Conditions

The certified monitoring well network for the Landfill was most recently revised to incorporate SP-4 and SP-5R as background monitoring locations (Geosyntec 2025b). These monitoring wells were initially installed as background monitoring wells for the nearby Northeastern Bottom Ash

Pond (BAP) CCR unit but were accepted by ODEQ as appropriate background monitoring wells for the Landfill in October 2024. The Landfill groundwater monitoring well network also includes 15 groundwater wells used for compliance monitoring (MW-1D, MW-2D, MW-3D, MW-4D, MW-5D, MW-6D, MW-9D, MW-10D, MW-11D, MW-12D, MW-13D, MW-14, MW-15, MW-16, and MW-17) and two groundwater level observation wells (MW-7D and MW-8D). The locations of the monitoring wells included in the certified network are shown on **Figure 2**.

The hydrostratigraphy in the vicinity of the Landfill is characterized by a water-bearing system comprised of Pennsylvanian-age limestones of the Oologah Formation overlain by Quaternary alluvium. For the purpose of specifying the uppermost aquifer in the Landfill vicinity, the primary hydrostratigraphic unit is identified as the Oologah Formation limestone, which is first encountered at approximately 610-620 ft amsl. Observational data indicate groundwater at the site is unconfined and moves mainly along secondary openings such as small discontinuous fractures, joints, or solution cavities. The presence of water in some wells, but not others along a similar horizon, suggests that groundwater is not laterally continuous across the Site.

3. ALTERNATIVE SOURCE DEMONSTRATION

An initial review of site geochemistry, site historical data, and laboratory quality assurance and quality control data did not identify alternative sources for lithium due to Type I (sampling), Type II (laboratory), Type III (statistical evaluation), or Type V (anthropogenic) issues. As described below, the lithium SSL at MW-14 has been attributed to natural variation associated with the underlying geology, which is a Type IV (natural variation) issue.

3.1 Distribution of Lithium in CCR Materials

Analysis of both Landfill leachate and laboratory leaching from Landfill CCR material in October 2020 indicate that aqueous phase lithium concentrations within the Landfill are less than the groundwater concentrations at MW-14 and the lithium GWPS. Lithium was detected in the Landfill leachate from the leachate collection system above the intermediate liner at a concentration of 0.016 mg/L, which is an order of magnitude lower than the site-specific GWPS of 0.163 mg/L (**Attachment A**). Furthermore, CCR material was leached at an analytical laboratory via the Synthetic Precipitation Leaching Procedure (SW-846 Test Method 1312) to assess the mobility of lithium in the CCR material. Lithium was not detected in the extraction phase above the reporting limit of 0.025 mg/L (**Attachment B**). There have been no notable changes in coal handling or sourcing at the plant that would have affected the composition of the ash or leachate at the Landfill since sampling was completed in October 2020. Therefore, the Landfill is not a likely source of aqueous lithium to groundwater at MW-14.

A similar conclusion was presented in an ASD (Geosyntec 2019) and subsequent revision (AEP 2019) submitted to the ODEQ addressing a lithium SSL at BAP compliance monitoring well SP-10 for a 2018 monitoring event. The BAP ASD provided a review of analytical results from samples collected from the BAP and well of interest SP-10 demonstrating that lithium concentrations in the BAP water samples were lower than aqueous lithium concentrations at well SP-10. In their response to the revised ASD, DEQ "agree[d] that the low concentration of lithium in the BAP as well as the different water chemistry as depicted in the Piper diagram furthers the proposal that the BAP is not a direct source of the lithium SSL" and "DEQ accepts the revised ASD as submitted" (ODEQ 2019). The comparison of lithium concentrations in Landfill leachate and leached Landfill CCR material to the higher concentrations reported at Landfill monitoring well MW-14 demonstrates an equivalent line of evidence as the presented in the BAP ASD.

3.2 Evaluation of Water Chemical Composition

The lack of CCR influence at MW-14 is supported by a comparison of the major ion chemistry of the Landfill leachate and porewater (sampled prior to installation of the intermediate liner system) to groundwater at MW-14. A Piper diagram, which displays the relative proportions of major cations and anions in aqueous samples, was used to compare the composition of leachate and porewater compared to MW-14 groundwater. Two leachate samples were collected above the intermediate liner in 2017, whereas porewater samples were collected prior to intermediate liner

placement in 2011-2014 from three temporary wells identified as LP-1, LP-2, and LP-3.[1] While the cation composition of all samples are similarly dominated by monovalent cations (sodium and potassium), MW-14 groundwater has consistently shown a chloride-dominant anion composition that is clearly distinct from Landfill leachate and porewater samples, which both contain a minor chloride and instead are dominated by sulfate (**Figure 3**). This is consistent with the findings of the BAP ASD, which characterized the groundwater type at SP-10 as chloride-dominant and substantially different from the water chemistry of the BAP porewater and pond water (AEP 2019).

If a release from the Landfill had occurred, the major anion chemistry of MW-14 groundwater would be expected to deviate from its monovalent cation-chloride geochemical facies and begin to reflect the more sulfate-dominant anionic composition of Landfill samples on the Piper diagram. This is particularly true given the notably higher concentrations of sulfate and lower concentrations of chloride in Landfill leachate and porewater compared to MW-14 groundwater. As shown on **Figure 4**, the porewater samples collected prior to installation of the intermediate liner between 2011 to 2014 contained sulfate concentrations ranging from 542 to 1,299 mg/L and chloride concentrations ranging from 5 to 38 mg/L. The sulfate concentrations reported at MW-14 range from 68 to 357 mg/L, and chloride concentrations range from 890 to 3,117 mg/L. The substantially greater sulfate concentrations reported in Landfill porewater would be expected to notably increase aqueous sulfate concentrations at MW-14 in the event of a leachate release, and chloride would be expected to be diluted due to leachate influence. These increases in aqueous sulfate and decreases in aqueous chloride at MW-14 has not been observed, suggesting that CCR is not influencing the MW-14 groundwater. Additionally, the ratio of sulfate to chloride at MW-14 is consistent with background monitoring wells SP-4 and SP-5R, which all differ considerately from the Landfill porewater samples (**Figure 4**). The distinct ionic ratio of the groundwater samples compared to the Landfill porewater samples suggests a lack of CCR influence on MW-14 groundwater.

Lithium at compliance well MW-14 appears to be correlated with the concentrations of major cations and anions, including sodium (**Figure 5**) and chloride (**Figure 6**), at monitoring locations across the Landfill monitoring well network. This includes background monitoring locations SP-4 and SP-5R. If lithium were elevated at a monitoring well due to a unique source such as infiltration of Landfill leachate, the ratio of lithium to other constituents would likely change due to differential mixing. However, the approximately linear relationship between lithium and other alkali metals across the Landfill monitoring well network suggests that lithium is a minor constituent of the same source which is consistent across the Northeastern Power Station. This is further supported by the consistent relationship between lithium and both sodium (**Figure 5**) and chloride (**Figure 6**) at Landfill wells MW-14, SP-4, and SP-5R and BAP monitoring well SP-10. As discussed in the previous ASD, the relationships between lithium and sodium or chloride at

[1] The 2020 leachate sample discussed in Section 3.1 had insufficient data for inclusion in the Piper Diagram. Conversely, the 2017 leachate samples and the 2011 to 2014 porewater samples discussed in this section were not analyzed for lithium.

SP-10 were consistent across the BAP network and were attributed to naturally occurring geological processes (Geosyntec 2019).

3.3 Influence of Bedrock Lithology on Aqueous Lithium Concentrations

The field boring log and monitoring well installation log for MW-14 (logged by Terracon in 2017) indicated that the well is screened from a depth of 65.50 to 75.90 ft bgs within light gray to gray shale (**Attachment C**). While Terracon described the screened interval at MW-14 as shale, this determination was made using core cuttings, which can obscure lithologic changes. As described in detail in the previous BAP ASD (Geosyntec 2019), Geosyntec advanced two additional borings near the BAP in early 2019. Boring BAP-B1 was advanced to a depth of 186 ft bgs and boring BAP-B2 was advanced to a depth of 72.4 ft bgs (**Figure 7**) to determine the aquifer lithology monitored by the Northeastern CCR unit monitoring well networks. Based on the depth of the limestone-shale contact determined by these logs (recorded at 100 ft bgs at BAP-B1, not reached through 72.4 ft bgs at BAP-B2), the monitoring well network for both the Bottom Ash Pond and the Landfill are screened within the Oologah Formation limestone rather than shale. The certified groundwater monitoring network for the Landfill revisions in 2025 documented this change in identification of the uppermost aquifer as the Oologah Formation limestone (Geosyntec 2025b).

During the 2019 re-logging, solids samples were collected from four intervals at boring location BAP-B2 (located adjacent to Bottom Ash Pond lithium ASD well of interest SP-10) for laboratory analysis, as summarized below:

Sample Depth (ft bgs)	Sample ID	Description
32.0-32.4	SP-10-LOG-1	Upper limestone
46.0-47.0	SP-10-LOG-2	Shale lens within the screened interval of SP-10
46.0-47.0	SP-10-LOG-3	Limestone within screened interval of SP-10
72.0-72.4	SP-10-LOG-4	Limestone within the screened interval of SP-9

While the dominant lithology through the entire core interval was limestone, a shale horizon was observed at 46 ft bgs, which is within the screened interval of nearby well SP-10. The samples were submitted to Mineralogy, Inc. (Tulsa, Oklahoma) for mineralogical analysis, including bulk analysis by X-ray diffraction (XRD), X-ray fluorescence (XRF), cation exchange capacity (CEC), and thin section petrography. A portion of each sample was submitted to Accurate Environmental Laboratories (Tulsa, Oklahoma) for acid digestion and analysis of total lithium by United States Environmental Protection Agency Method 6020A.

The XRD analysis confirmed that limestone is present at depths to at least 72 ft bgs in the vicinity of the BAP. The proximity of the BAP to the Landfill suggests that limestone is the dominant lithology of the Landfill aquifer unit as well. The analyses also confirmed that the horizon observed at 46 ft bgs is a shale parting containing clay minerals including illite and smectite (**Table 1,**

Attachment D). Shale horizons interbedded within limestone are expected to be prevalent throughout the Northeastern bedrock, as the Marmaton Group contains cyclothem depositional sequences within the region (Rayn et al. 1984, Price 1984). Cyclothems feature geologic lithologies associated with cyclical paleoshoreline transgressive and regressive periods, which cause the deposition of interbedded sequences of limestone and shale. Although solids samples have not been collected directly from MW-14, the local depositional environment of the aquifer unit suggests that shale horizons interbedded with limestone are common.

The clay minerals comprising the interbedded shale horizons in the Oologah Formation are expected to contain a greater abundance of lithium compared to non-clay minerals due to the preferential uptake of free ions in the higher ionic strength formation water. Clay minerals commonly undergo isomorphic substitution of cations (e.g., lithium) into the octahedral layer of their crystal structure as a means of balancing electrical charge deviations created by aluminum/silicon ratio changes in the clay mineral tetrahedral layer due to weather reactions (Kumari and Mohan 2021). A total lithium concentration of 76 milligram per kilogram (mg/kg) was reported for the shale horizon sample collected from BAP-B2 in 2019 (**Table 2**), confirming that shale horizons within the Oologah formation represent a source of lithium within the geologic system.

Isomorphic substitutions of various cations in clay mineral octahedral layers result in clay minerals containing a net negative mineral surface charge (Starkey 1982). This negative surface charge allows for preferential sorption of free cations (such as lithium) in formation water to the clay mineral surfaces. These sorbed cations are subject to exchange with other cations in formation water via cation exchange. Illite and smectite, major components of the SP-10-LOG-2 shale horizon sample (**Table 1**), have very high CEC owing to their negative surface charges. CEC analysis of the shale sample from BAP-B2 report detectable levels of exchangeable cations (potassium and sodium) at higher concentrations than the limestone samples from the aquifer lithology (**Table 2**), indicating that cation exchange is likely occurring within the shale horizons.[2]

The clay minerals comprising the Oologah Formation shale horizons function as a source of lithium to groundwater through desorption of lithium via cation exchange and mineral weathering reactions. This lithium source is geogenic and is expected to preferentially influence lithium concentrations at groundwater locations containing greater proportions of shale within the screened interval. The proportion of shale within the screened interval of most Landfill monitoring network wells is not well constrained due to previously established lithologic interpretation issues associated with the core cuttings used during well installation (Geosyntec 2025b).

[2] Exchangeable lithium was analyzed as a component of the CEC analyses, but results were all below the method detection limit of 0.05 milliequivalents per 100 grams of material (mEq/100g). Based on the slope of the relationship between lithium and sodium in SP-10 groundwater samples, the ratio of dissolved sodium to dissolved lithium is approximately 1,400:1. Using this ratio, exchangeable lithium is not likely to be present above the method detection limit based on the reported concentrations of exchangeable sodium in the samples. This data is available in the laboratory analytical report (**Attachment D**) but excluded from **Table 2** for clarity.

4. CONCLUSIONS

The preceding information serves as the ASD prepared in accordance with OAC 252:517-9-6(g)(3)(B) and supports the position that the SSL for lithium identified at MW-14 during the first semiannual assessment monitoring event of 2025 was not due to a release from the Landfill. The identified SSL should instead be attributed to natural variation within the limestone bedrock. Certification of this ASD by a qualified professional engineer is provided in **Attachment E**.

5. REFERENCES

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TABLES

Table 1: X-Ray Diffraction Laboratory Analysis Results
Northeastern Power Station - Landfill

Geosyntec Consultants

Sample ID	SP-10-LOG 1	SP-10-LOG 2	SP-10-LOG 3	SP-10-LOG 4
Depth (ft bgs)	32-32.4	46-47	46-47	72-72.4
Description	Upper Limestone	Shale within screened interval of SP-10	Limestone within screened interval of SP-10	Limestone within screened interval of SP-9
Quartz	1	20	3	6
Albite	ND	4	ND	ND
Microcline	ND	1	ND	ND
Calcite	95	2	93	91
Ferroan Dolomite	4	ND	ND	2
Siderite	ND	1	ND	ND
Pyrite	ND	5	1	ND
Kaolinite	ND	2	1	<0.5
Chlorite	ND	3	<0.5	ND
Illite/Mica	ND	38	1	1
Mixed-Layered Illite/Smectite	ND	24	1	<0.5
% Illite Layers in ML I/S	*N/A*	*75*	*75*	*BDL*

Notes:
Results are shown as percentage of the bulk material.
ND - not detected
N/A: not applicable
BDL: below detection limit

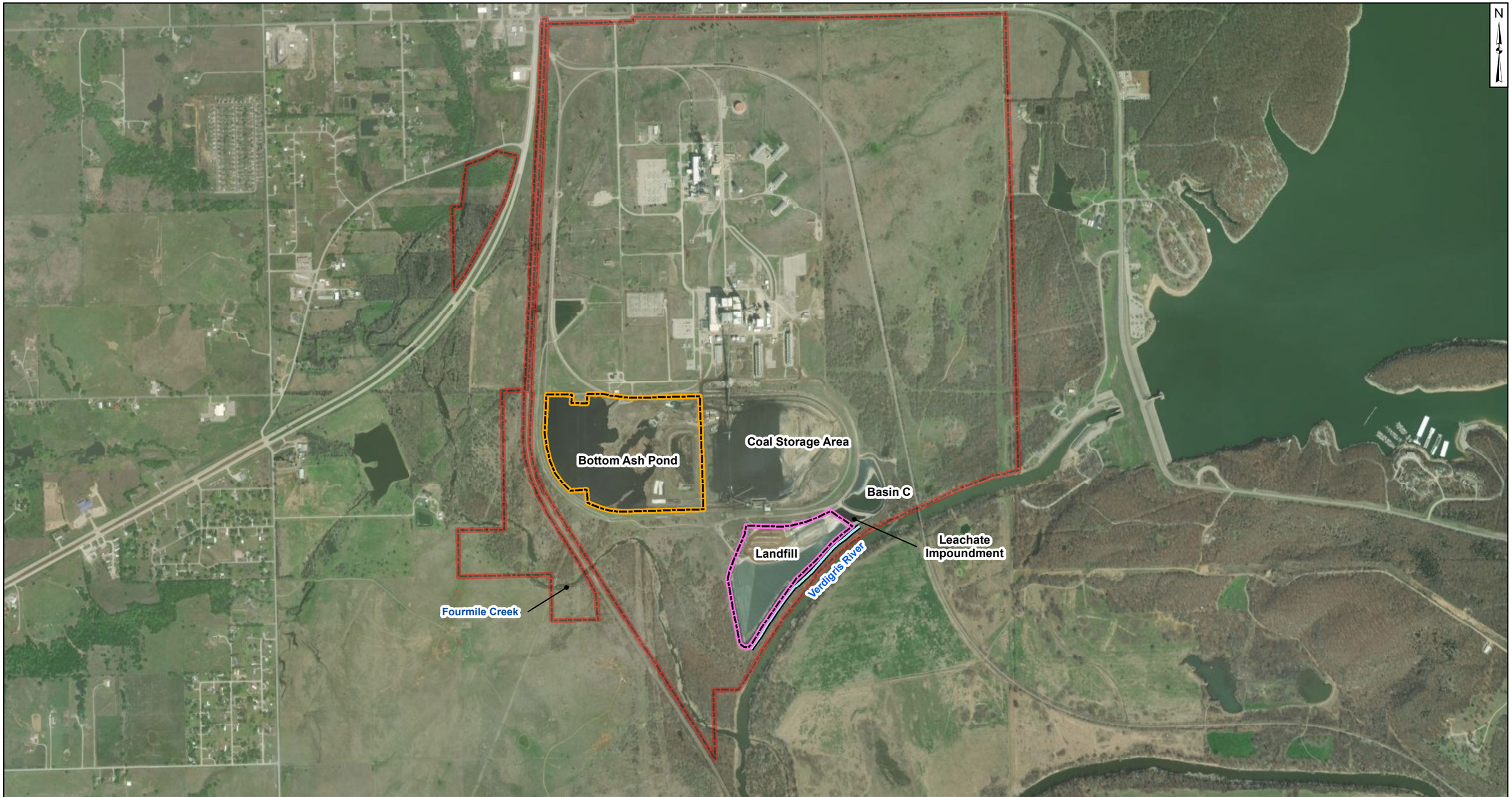
Table 2: Cation Exchange Capacity and Total Lithium Analyses
Northeastern Power Station - Landfill

Geosyntec Consultants, Inc.

Sample ID	Sample Depth	Description	Exchangable Calcium (mEq/100g)	Exchangable Magnesium (mEq/100g)	Exchangable Potassium (mEq/100g)	Exchangable Sodium (mEq/100g)
SP-10-LOG-1	32.0-32.4'	Upper limestone	20	0.567	<0.10	0.226
SP-10-LOG-2	46'	Shale lens within screened interval of SP-10	16.2	3.51	2.32	8.85
SP-20-LOG-3	46'	Limestone within screened interval of SP-10	21.6	0.642	0.250	0.896
SP-10-LOG-4	72.0-72.4'	Limestone within screened interval of SP-9	21.1	1.16	0.313	0.822

Notes:
1. mg/kg dry weight: milligram of lithium per kilogram of dry weight of material
2. mEq/100g: milliequivalent per 100 grams of material

FIGURES



Legend

- Bottom Ash Pond
- Landfill
- Slurry Wall
- Site Property Boundary

Notes

1. Site features and property boundary provided by American Electric Power.
2. Satellite imagery provided by ESRI (December 2023).

1,000 500 0 1,000
Feet

Site Layout Map

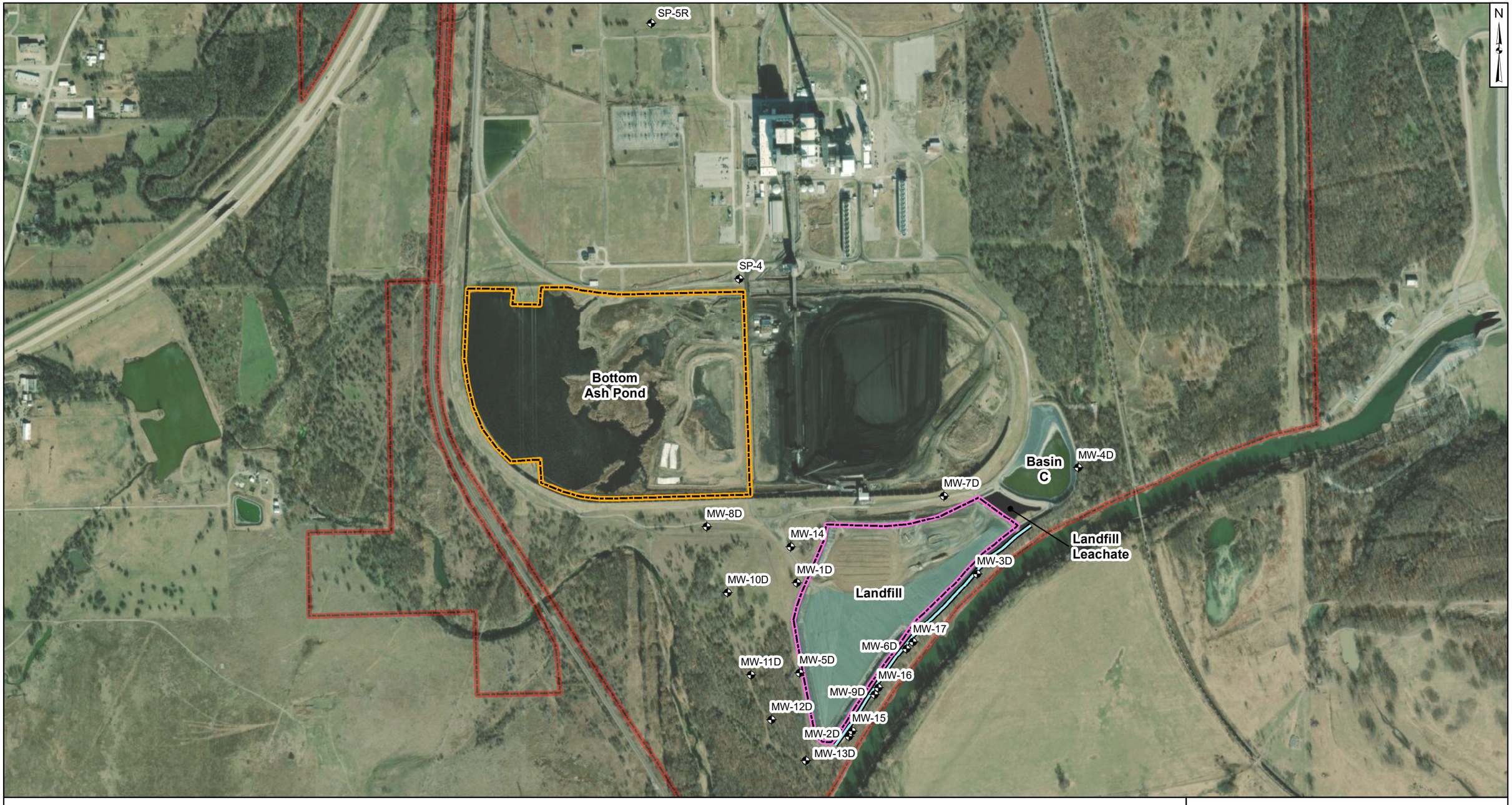
AEP Northeastern Power Plant
Oologah, Oklahoma

Geosyntec consultants

Columbus, Ohio | December 2025

Figure 1

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Northeastern\2025\AEP-Northeastern_LF_Property Boundary.mxd. okiemute.commander. 11/26/2025. Project/Phase/Task.



Legend

- Groundwater Monitoring Well
- Bottom Ash Pond
- Landfill
- Slurry Wall
- Site Property Boundary

Notes

1. Monitoring well coordinates provided by AEP.
2. Satellite imagery provided by ESRI (December 2023).

1,000 500 0 1,000 Feet

Landfill Groundwater Monitoring Well Network

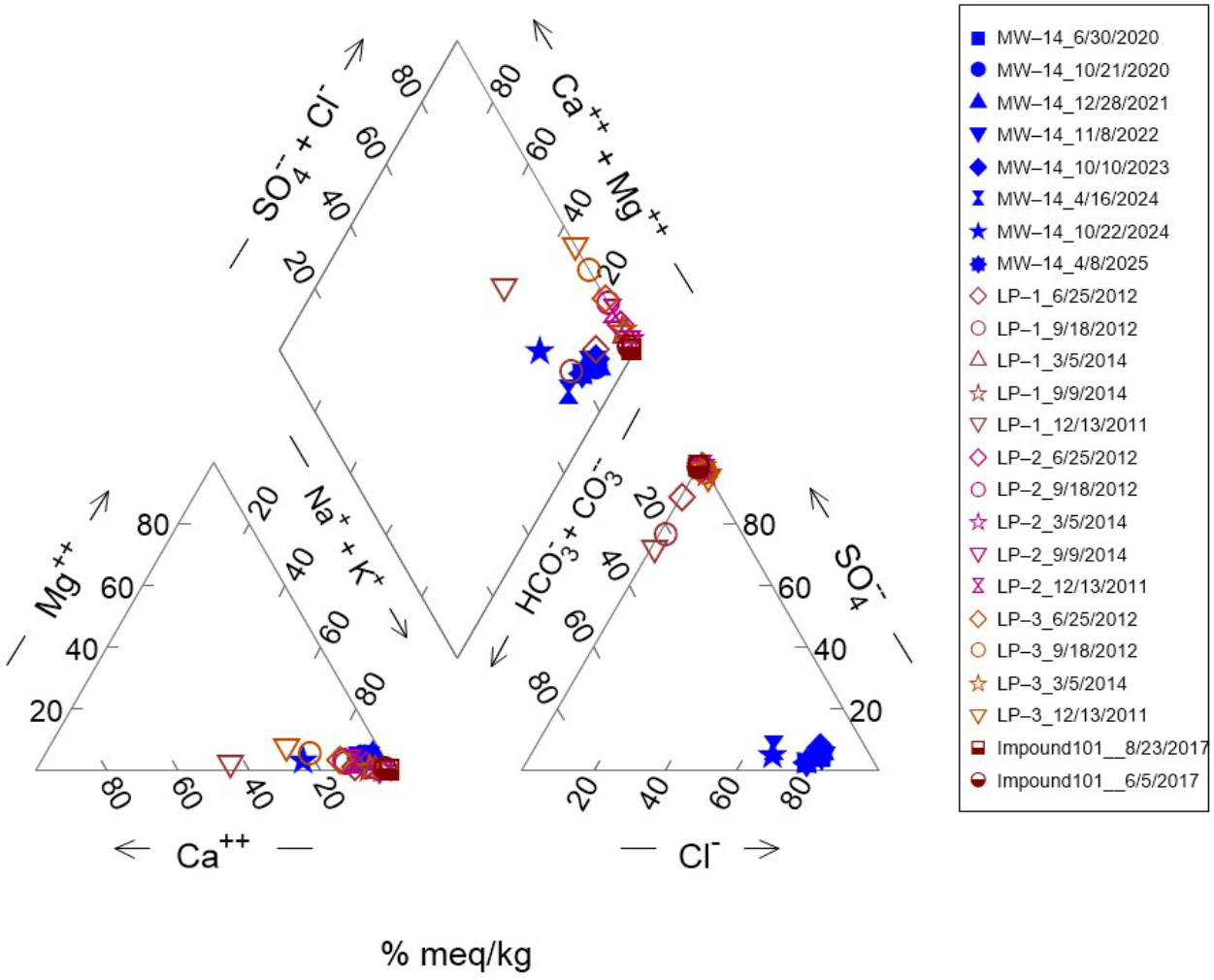
AEP Northeastern Power Plant - Landfill Oologah, Oklahoma

Geosyntec consultants

Columbus, Ohio | December 2025

Figure **2**

A:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Northeastern\2025\AEP-Northeastern_LF_GWMN_2025.mxd. okiemute.commander. 12/1/2025. Project/Phase/Task.



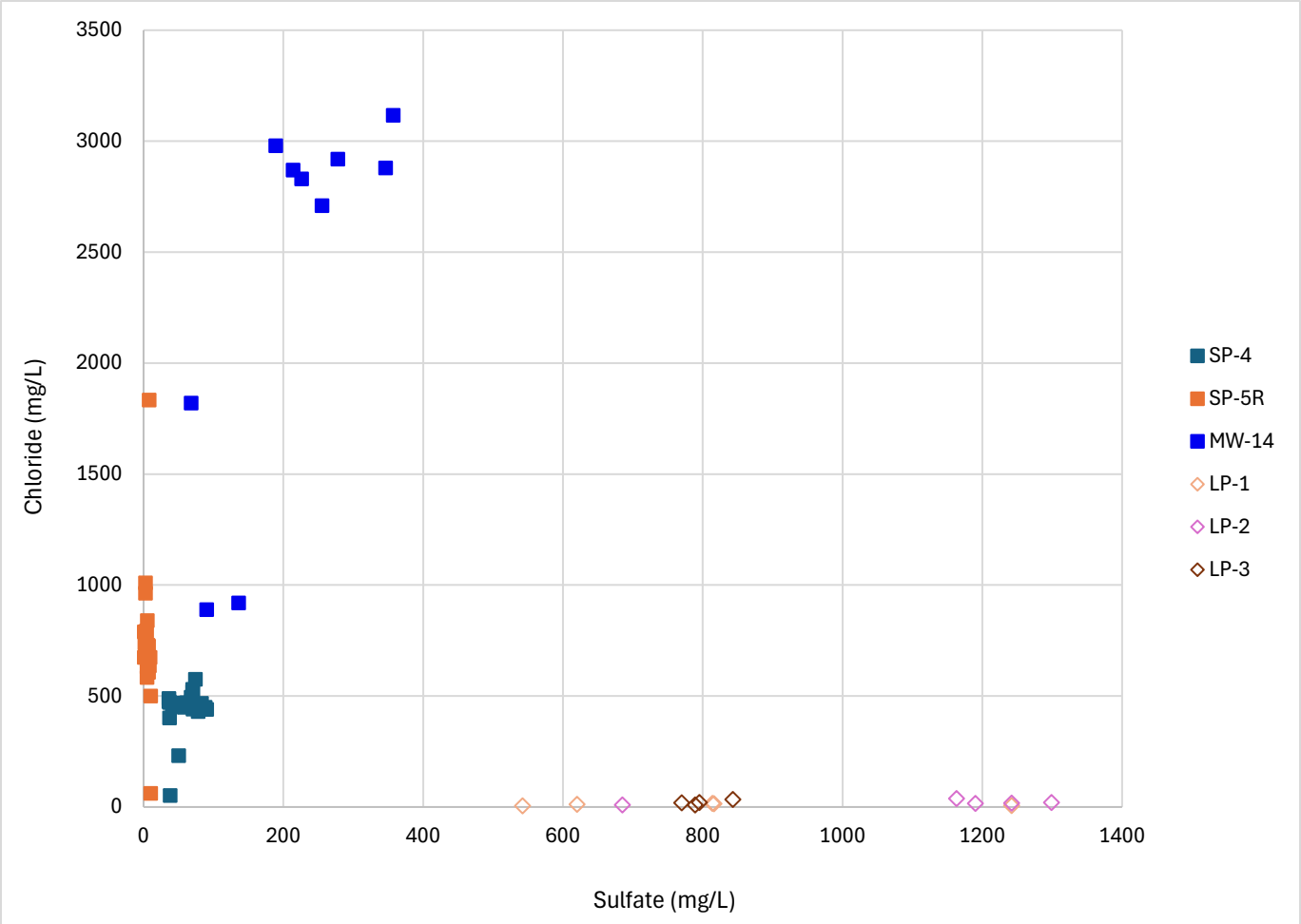
Notes:
1. Results are shown in milliequivalents per kilogram (meq/kg).
2. Groundwater samples which contain analytical results for all major ions are plotted on the Piper diagram.
3. Porewater samples collected from 2011 to 2014 before installation of in the intermediate liner are identified as "LP-X" samples.
4. Leachate samples collected in 2017 are identified as "Impound101_X" samples.

Piper Diagram
Northeastern Landfill

Geosyntec consultants

Columbus, OH | December 2025

Figure 3



Notes:

1. Sulfate and chloride are shown in milligrams per liter (mg/L).
2. SP-4, SP-5R and MW-14 are represented with square symbology and solid fill.
3. Porewater samples from LP-1, LP-2 and LP-3 are represented with inverted square and hollow fill.

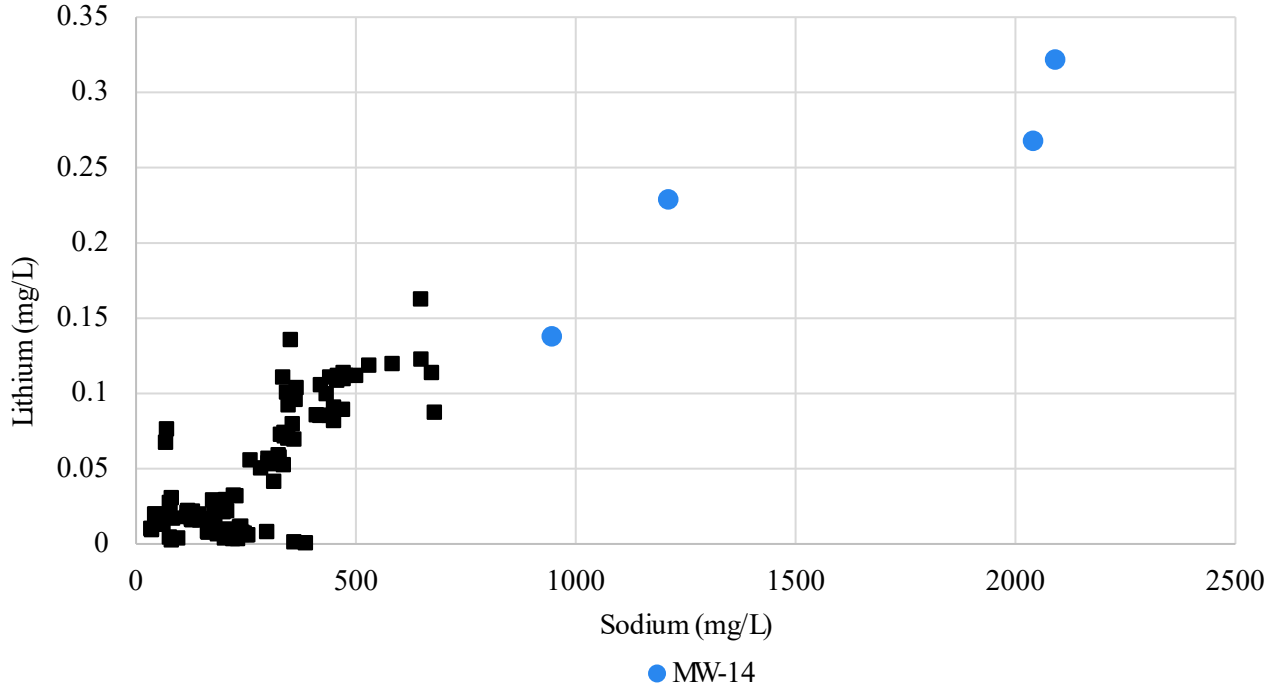
Scatter Plot – Sulfate v Chloride

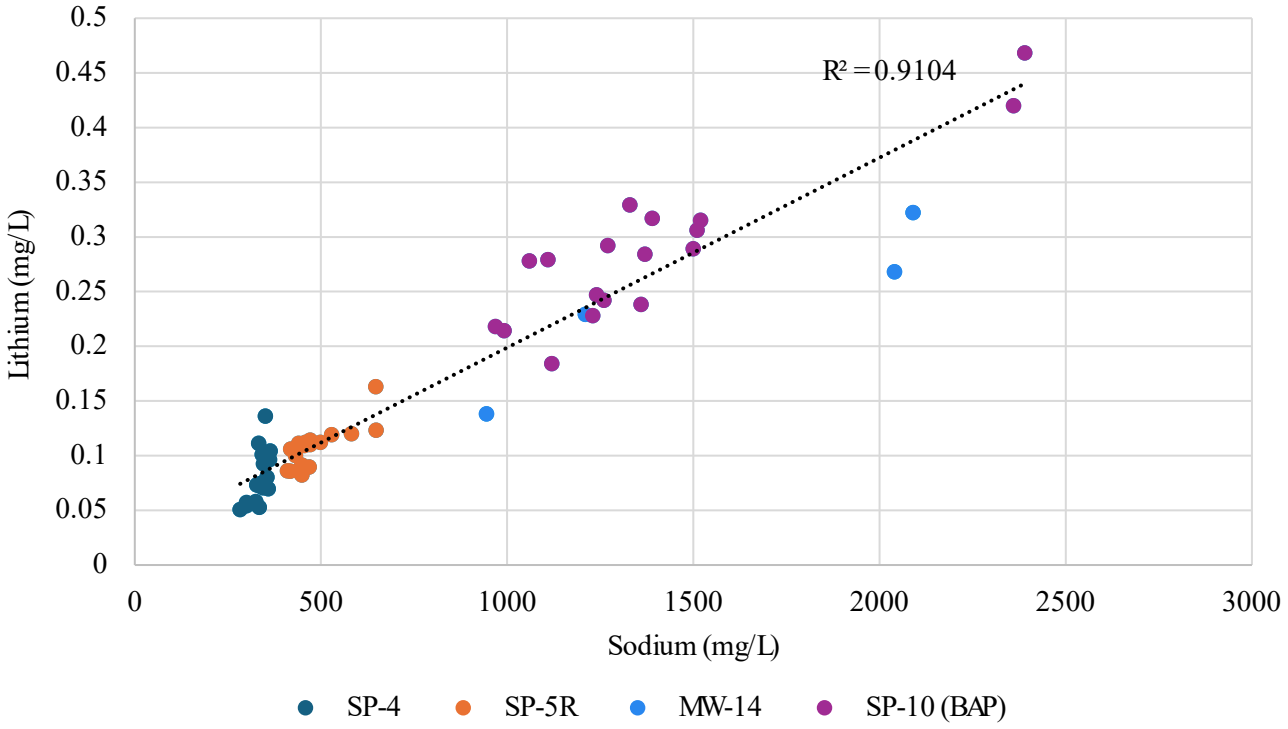
Northeastern Landfill

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Columbus, OH | December 2025

Figure 4





Notes:

1. Sodium and lithium are shown in milligrams per liter (mg/L).
2. The top plot shows data from all Landfill monitoring wells (compliance and background), with MW-14 indicated in blue.
3. The bottom plot shows Landfill background wells SP-4 and SP-5R, Landfill compliance well MW-14, and Bottom Ash Pond compliance well SP-10.
4. The linear trendline and R-squared value are associated with combined data from all four sampling locations in the bottom plot.

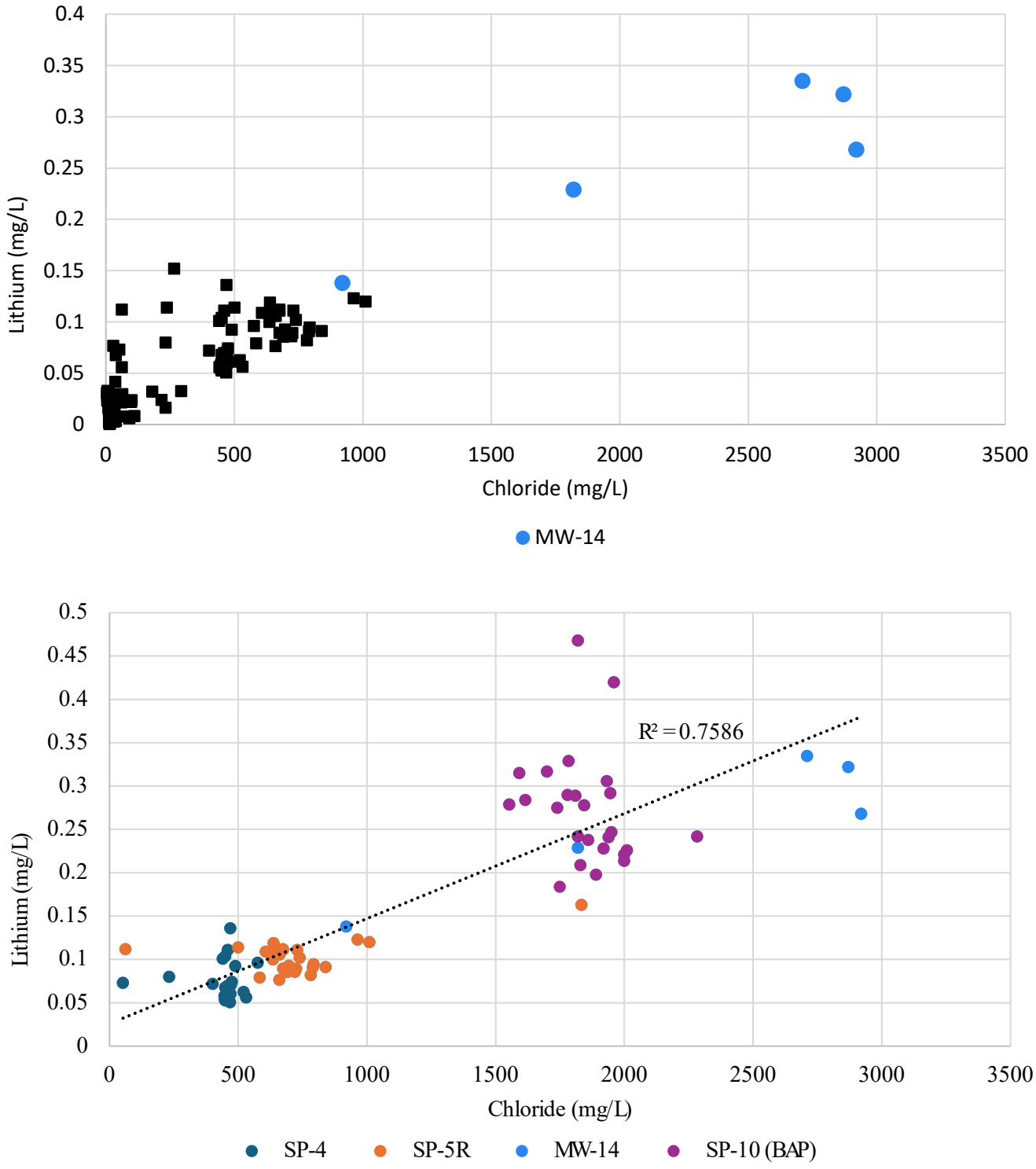
Scatter Plot – Sodium vs Lithium

Northeastern Landfill

Geosyntec consultants

Columbus, OH | December 2025

Figure 5



Notes:

1. Chloride and lithium are shown in milligrams per liter (mg/L).
2. The top plot shows data from all Landfill monitoring wells (compliance and background), with MW-14 indicated in blue.
3. The bottom plot shows Landfill background wells SP-4 and SP-5R, Landfill compliance well MW-14, and Bottom Ash Pond compliance well SP-10.
4. The linear trendline and R-squared value are associated with combined data from all four sampling locations in the bottom plot.

Scatter Plot – Chloride vs Lithium

Northeastern Landfill

Geosyntec consultants

Columbus, OH | December 2025

Figure 6



Legend

- Monitoring Well Location
- 2019 Boring Location
- Bottom Ash Pond

Notes

- Aerial imagery obtained from ESRI

1,000 500 0 1,000 Feet

Soil Boring and Monitoring Well Location Map - Geology Clarification Investigation

AEP Northeastern Power Plant - Bottom Ash Pond
Oologah, Oklahoma

Geosyntec consultants

Columbus, Ohio | December 2025

Figure 7

ATTACHMENT A
2020 Landfill Leachate Analytical Data

Form REP-703
Rev. 2, 05/2016

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
T: 614-836-4221, Audinet 210-4221
F: 614-836-4168, Audinet 210-4168
http://aepenv/labs

Water Analysis

Location: Northeastern Station ***Report Date: 11/20/2020***

Leachate

Sample Number: 203054-001 **Date Collected: 10/20/2020 15:29** **Date Received: 10/23/2020**

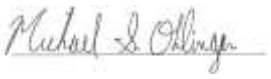
Parameter	Result	Units	Data Qual	RL	MDL	Analysis By	Analysis Date/Time	Method
Antimony, Sb	2	ug/L	J	5	1	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Arsenic, As	104	ug/L		5	2	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Barium, Ba	91.3	ug/L		10	2	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Beryllium, Be	< 1	ug/L	U	5	1	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Cadmium, Cd	< 0.5	ug/L	U	2	0.5	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Chromium, Cr	66.0	ug/L		10	2	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Cobalt, Co	1	ug/L	J	2	1	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Lead, Pb	< 2	ug/L	U	10	2	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Mercury, Hg	0.273	ug/L		0.05	0.02	JAB	10/31/2020	EPA 245.7-2005, Rev. 2.0
Molybdenum, Mo	1690	ug/L		100	20	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Selenium, Se	632	ug/L		10	2	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Thallium, Tl	< 5	ug/L	U	20	5	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Lithium, Li	0.0160	mg/L		0.01	0.002	JDB	10/28/2020 14:25	EPA 200.8-1994, Rev. 5.4
Fluoride, F	1	mg/L	J	2	0.4	CRJ	10/29/2020 14:23	EPA 300.1-1997, Rev. 1.0

U: Analyte was analyzed and not detected at or above adjusted Method Detection Limit
J: Analyte was positively identified, though the quantitation was below Reporting Limit.

Radiochemistry*	Result	Units	UNC* (+ / -)	MDA*	Analysis By	Analysis Date/Time	Method
Radium-228	1.34	pCi/L	0.15	0.46	ttp	11/18/2020	SW-846 9320-2014,Rev. 1.0
Radium-226	-0.00668	pCi/L	0.0038	0.071	ttp	11/18/2020	SW-846 9315-1986,Rev. 0

The carrier recovery is outside the acceptable limit of 30-110%

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.



Michael Ohlinger, Chemist
Email msohlinger@aep.com *Tel.*
Fax 614-836-4168 *Audinet 8-210-*

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED.

ATTACHMENT B
Landfill CCR Material SPLP Analysis

Form REP-701
Rev. 0, 4/2012

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
T: 614-836-4221, Audinet 210-4221
F: 614-836-4168, Audinet 210-4168
http://aepenv/labs

Waste Analysis

Location: Northeastern Station ***Report Date: 11/23/2020***

Ash SPLP ***SPLP per SW-846, 1312-1994***

Sample Number: 203057-001 **Date Collected: 10/20/2020 16:00** **Date Received: 10/23/2020**

Parameter	Result	Units	MDL	RL	Analyst	Analysis Date/Time	Method	USEPA Limit
Antimony, Sb	< 0.250	mg/L	0.075	0.25	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	
•The ICS-A is outside the acceptable limit of 90-110%. •The ICS-AB is outside the acceptable limit of 90-110%.								
Arsenic, As	< 0.250	mg/L	0.05	0.25	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	5
Barium, Ba	< 0.100	mg/L	0.025	0.1	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	100
Beryllium, Be	< 0.0100	mg/L	0.003	0.01	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	
Cadmium, Cd	< 0.0100	mg/L	0.003	0.01	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	1
Chromium, Cr	0.186	mg/L	0.005	0.025	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	5
Cobalt, Co	< 0.0250	mg/L	0.005	0.025	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	
Lead, Pb	< 0.100	mg/L	0.03	0.1	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	5
Lithium, Li	< 0.0250	mg/L	0.005	0.025	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	
•The ICS-A is outside the acceptable limit of 90-110%.								
Molybdenum, Mo	0.200	mg/L	0.01	0.05	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	
Selenium, Se	< 0.250	mg/L	0.04	0.25	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	1
•The MSD is outside the acceptable limit of 75-125%. •The ICS-AB is outside the acceptable limit of 90-110%.								
Thallium, Tl	< 0.250	mg/L	0.05	0.25	DAM	10/30/2020 13:24	SW-846 6010C-2007, Rev. 3.0	
•The ICS-AB is outside the acceptable limit of 90-110%.								
Mercury, Hg	< 0.0020	mg/L	0.0004	0.002	JAB	10/30/2020	SW-846 7470A-1994, Rev. 1.0	0.2
Fluoride, F	3.15	mg/L	0.35	1.5	CRJ	10/29/2020 13:58	SW-846 9056A-2007, Rev. 1.0	

Daniel A. Musgrave

Dan Musgrave, Chemist Principal

Email damusgrave@aep.com Tel. 614-836-4282

Fax 614-836-4168 Audinet 8-210-4282

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ATTACHMENT C
MW-14 Boring Log and Monitoring Well Installation Log

Terracon
Consulting Engineers and Scientists
25809 I-30 South BRYANT, AR. 72022
PH. (501) 847-9292 FAX. (501) 847-9210

FIELD BORING LOG

BORING NO.: MW-14 PAGE: 1 of 1

TOTAL DEPTH: 76' FEET BELOW GROUND SURFACE (BGS)

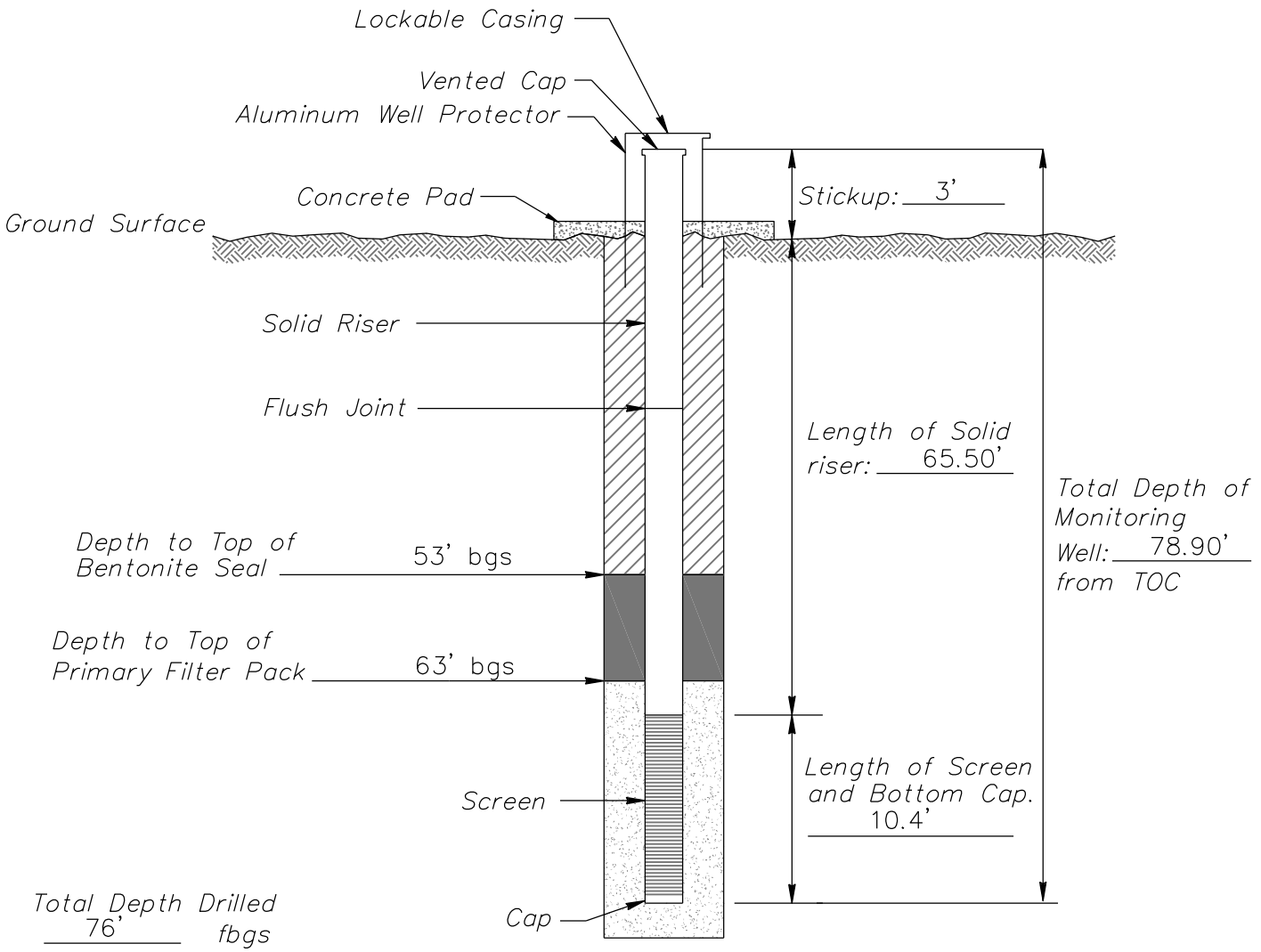
CLIENT: AEP	PROJECT: NE - CCR WELL INSTALL
JOB NO.: 35157183	DRILLING CO.: AECI
LOGGED BY: RAH	DRILLER: GARY MOYERS
DATE DRILLED: 03/01/2016	RIG TYPE: CME 75 BUGGY
DRILLING METHOD: HSA / AIR ROTARY	
SAMPLING METHOD: 5' CONTINUOUS SAMPLER, LOGGED BY CUTTINGS	

N: E: G.S. ELEV.

Depth BGS	DESCRIPTION	Litho. Symbol	% Recovery	RQD	Remarks
0	0'-6' SILTY CLAY W/ LIMESTONE GRAVEL tan and gray clay w/intermitant gravel				
10	6'-43' SILTY CLAY W/ LIMESTONE GRAVEL crystalline to micritie				6' - 76' logged by cuttings
20					
30					
40					
50	43'-76' SHALE light gray to gray, hard				
60					
70					fracture @ 67' w/ moist cuttings
80	Total Depth of Boring at 76' bgs				BoB @ 76'

MONITORING WELL INSTALLATION RECORD

Job Name NORTHEASTERN STATIONS 3+4–CCR WELL INSTALLATION Well Number MW–14
Job Number 35157183 Installation Date 03/01/15 Location AEP–PSONE STATIONS 3+4
Datum Elevation N/A Surface Elevation N/A
Datum for Water Level Measurement T.O.C.
Screen Diameter & Material 2" PVC Slot Size 0.010
Riser Diameter & Material 2" PVC Borehole Diameter 8"
Granular Backfill Material 16/30 SAND Terracon Representative RAH
Drilling Method HSA AND AIR ROTARY Drilling Contractor AECI



Cement/Bentonite Grout

Bentonite Pellet Plug

Granular Backfill

(Not to Scale)

Terracon
Consulting Engineers and Scientists
25809 I-30 South BRYANT, AR. 72022
PH. (501) 847-9292 FAX. (501) 847-9210

MONITORING WELL INSTALLATION RECORD
PROJECT NUMBER: 35157183
WELL NUMBER: MW–14
DRAWING NUMBER: 000 CHECKED BY: 00

ATTACHMENT D

Laboratory Analytical Report – Mineralogy, Inc.

MINERALOGY INC
WHERE SCIENCE GETS DOWN TO EARTH

CHA8462/10/01

Requested by:
Alison Kreinberg
Geosyntec Consultants

Mineralogy, Inc. Number 19051

Date:
March 21, 2019

Submitted by:



Timothy B. Murphy

Mineralogy, Inc.
3321 East 27th Street
Tulsa, Oklahoma 74114
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SP-10-LOG 4 (72-72.4')	19051-04	•	•

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CONDITIONS AND QUALIFICATIONS

Mineralogy, Inc. will endeavor to provide accurate and reliable laboratory measurements of the samples provided by the client. The results of any x-ray diffraction, petrographic or core analysis test are necessarily influenced by the condition and selection of the samples to be analyzed. It should be recognized that geological samples are commonly heterogeneous and lack uniform properties. Mineralogical, geochemical and/or petrographic data obtained for a specific sample provides compositional data pertinent to that specific sampling location. Such "site-specific data" may fail to provide adequate characterization of the range of compositional variability possible within a given project area, thus the "projection" of these laboratory findings and values to adjoining, "untested" areas of the formation or project area is inherently risky, and exceeds the scope of the laboratory work request. Hence, Mineralogy, Inc. shall not assume any liability risk or responsibility for any loss or potential failure associated with the application of "site or sample-specific laboratory data" to "untested" areas of the formation or project area. Unless otherwise directed, the samples selected for analysis will be chosen to reflect a visually representative portion of the bulk sample submitted for analysis. Where provided, the interpretation of x-ray diffraction, petrographic or core analysis results constitutes the best geological judgment of Mineralogy, Inc., and is subject to the sampling limitations described above, and the detection limits inherent to semi-quantitative and/or qualitative mineralogical and microscopic analysis. Mineralogy, Inc. assumes no responsibility nor offers any guarantee of the productivity, suitability or performance of any oil or gas well, hydrocarbon recovery process, dimension stone, and/or ore material based upon the data or conclusions presented in this report.

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Introduction

Four selected core intervals have been submitted for a combination of mineralogical, chemical, and petrographic analysis. The results of the x-ray diffraction mineralogical analysis are summarized in Table I. X-ray fluorescence chemical analysis data for these samples are presented in Table II. Results of the cation exchange capacity analysis (CEC) are summarized in Table III. The CEC results provide exchange capacities for a series of selected cation species, including: lithium, calcium, potassium, magnesium and sodium ions. The results of the thin section petrographic analysis are summarized in the individual thin section descriptions presented following Table III. The descriptive summaries include thin section photomicrographs that offer representative images of the micro-fabric for these core samples.

Sample ID	Mineralogy, Inc. No.	Analysis Requested
SP-10-LOG 1 (32-32.4')	19051-01	XRD / XRF / CEC / TSP
SP-10-LOG 2 (46')	19051-02	XRD / XRF / CEC / TSP
SP-10-LOG 3 (46')	19051-03	XRD / XRF / CEC / TSP
SP-10-LOG 4 (72-72.4')	19051-04	XRD / XRF / CEC / TSP

XRD = X-ray Diffraction | XRF = X-ray Fluorescence | CEC = Cation Exchange Capacity | TSP = Thin Section Petrography

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X-ray Diffraction

Client:	Geosyntec Consultants	MI#:	19051
Project:	CHA8462/10/01	Date:	03/21/19
Location:	N/A	Method:	X-ray Diffraction

Sample ID	SP-10-LOG 1	SP-10-LOG 2	SP-10-LOG 4	SP-10-LOG 4
Depth (ft)	32-32.4	46	46	72-72.4
MI#	19051-01	19051-02	19051-03	19051-04
Mineral Constituent	**Relative Abundance (%)**			
Quartz	1	20	3	6
Albite	ND	4	ND	ND
Microcline	ND	1	ND	ND
Calcite	95	2	93	91
Ferroan Dolomite	4	ND	ND	2
Siderite	ND	1	ND	ND
Pyrite	ND	5	1	ND
Kaolinite	ND	2	1	<0.5
Chlorite	ND	3	<0.5	ND
Illite/Mica	ND	38	1	1
Mixed-Layered Illite/Smectite	ND	24	1	<0.5
Total	**100**	**100**	**100**	**100**
% Illite Layers in ML I/S		*75%*	*75%*	*BDL*

**ND = Not Detected*
BDL = Below Detection Limit

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X-ray Fluorescence

Client:	Geosyntec Consultants	MI#:	19051
Project:	CHA8462/10/01	Date:	03/21/19
Location:	N/A	Method:	X-ray Fluorescence

Sample ID	SP-10-LOG 1	SP-10-LOG 2	SP-10-LOG 4	SP-10-LOG 4
Depth (ft)	32-32.4	46	46	72-72.4
MI#	19051-01	19051-02	19051-03	19051-04
Compound	**Results (mass %)**			
Na2O	ND	0.1895	0.115	0.1679
MgO	0.8658	0.8691	0.6868	1.2152
Al2O3	0.229	2.623	2.8345	1.8392
SiO2	1.8268	9.8542	11.7333	15.4175
P2O5	0.1167	0.2455	0.1844	0.1426
S	0.0281	0.5322	0.3903	0.1484
Cl	0.0366	0.0313	0.0366	0.0309
K2O	0.0729	0.5631	0.36	0.4304
CaO	95.2326	80.3021	79.7826	78.3752
TiO2	ND	0.1647	0.0679	0.1096
MnO	0.0797	0.1224	0.1512	0.1627
Fe2O3	0.7094	2.596	1.912	1.2662
Sr	0.5788	0.8884	0.922	0.3485
Y	ND	ND	0.0116	ND
BaO	0.0758	0.0597	0.056	0.0598

**ND = Not Detected*

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Cation Exchange Capacity

Client:	Geosyntec Consultants	MI#:	19051
Project:	CHA8462/10/01	Date:	03/21/19
Location:	N/A	Method:	C.E.C.

	Lithium		Calcium		Magnesium		Potassium		Sodium	
	Results	PQL**	Results	PQL**	Results	PQL**	Results	PQL**	Results	PQL**
Sample ID	(meg/100g)		(meg/100g)		(meg/100g)		(meg/100g)		(meg/100g)	
SP-10-LOG 1 32 - 32.4'	BPQL	0.05	20.0	0.100	0.567	0.100	BPQL	0.100	0.226	0.100
SP-10-LOG 2 46'	BPQL	0.05	16.2	0.100	3.51	0.100	2.32	0.100	8.85	0.100
SP-10-LOG 3 46'	BPQL	0.05	21.6	0.100	0.642	0.100	0.250	0.100	0.896	0.100
SP-10-LOG 4 72 - 72.4'	BPQL	0.05	21.1	0.100	1.16	0.100	0.313	0.100	0.822	0.100

Method Reference: 40 CFR 136, 261, Method for Chemical Analysis of Water and Waste EPA-600/4-79-020 March 1983

CEC Method Reference: Method of Soil Analysis, Chemical and Microbiological Properties, 2nd Ed.; American Society of Agronomy, Inc.

Soil Science Society of America, Inc. page 160.

**CEC analysis provided by Accurate Laboratories & Training Center; Stillwater, OK*

***PQL= Practical Quantitation Limit | BPQL = Below Practical Quantitation Limit*

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SP-10-LOG 1 (32-32.4'); MI#19051-01 Petrographic Data

This core interval is comprised of non-porous, partially recrystallized, slightly dolomitic, mollusk lime wackstone. Some characteristics of the limestone framework and micro-fabric are noted as follows:

- The limestone is extensively crystalized and exhibits a grain assemblage that includes recrystallized mollusk shells and gastropod fragments, undifferentiated skeletal debris (recrystallized skeletal grains partially to completely replaced with calcite spar and/or dolomite cement), foram tests, and ostracod fragments.
- The sedimentary fabric is burrow mottled and exhibits localized evidence of geopetal sheltering adjoining selected shell fragments. The sheltered portions of the limestone fabric exhibit contrasts in the matrix packing density & the distribution of some secondary cements within this interval.
- The groundmass of this sample is dominated by microcrystalline calcite. Portions of the matrix have been locally replaced with very finely crystalline calcite spar +/- dolomite cement owing to aggrading neomorphism.
- Traces of microcrystalline chert cement are locally present as a late stage secondary cement occupying patches of sheltered inter-crystalline porosity that adjoin the mollusk shell fragments. The chert cement is visually estimated to account for <1% of the mineral volume in this interval.
- Porosity accounts for ~0.5-1.0% of the bulk volume. Void types include scattered secondary dissolution voids (associated with the dolomite-replaced mollusk shell fragments), and traces of inter-crystalline microporosity.

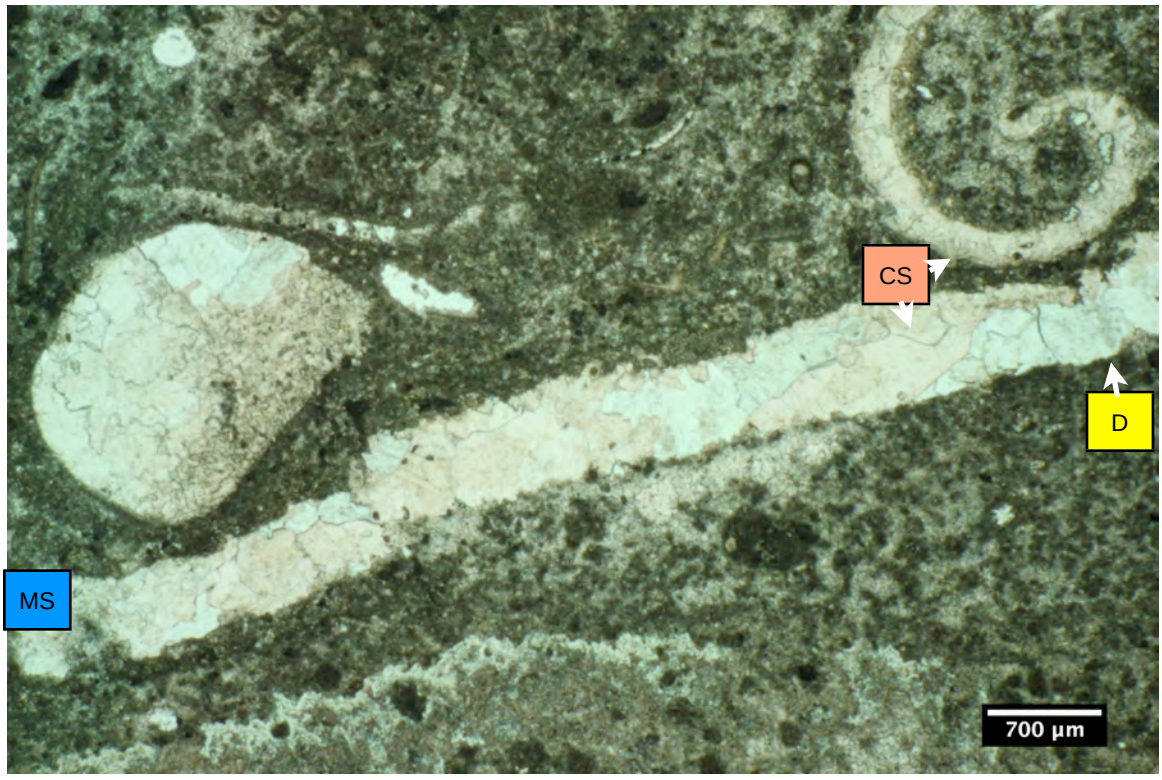
Mineralogical Data

Mineral Constituents	Concentration (%)
Quartz	1
Calcite	95
Ferroan Dolomite	4

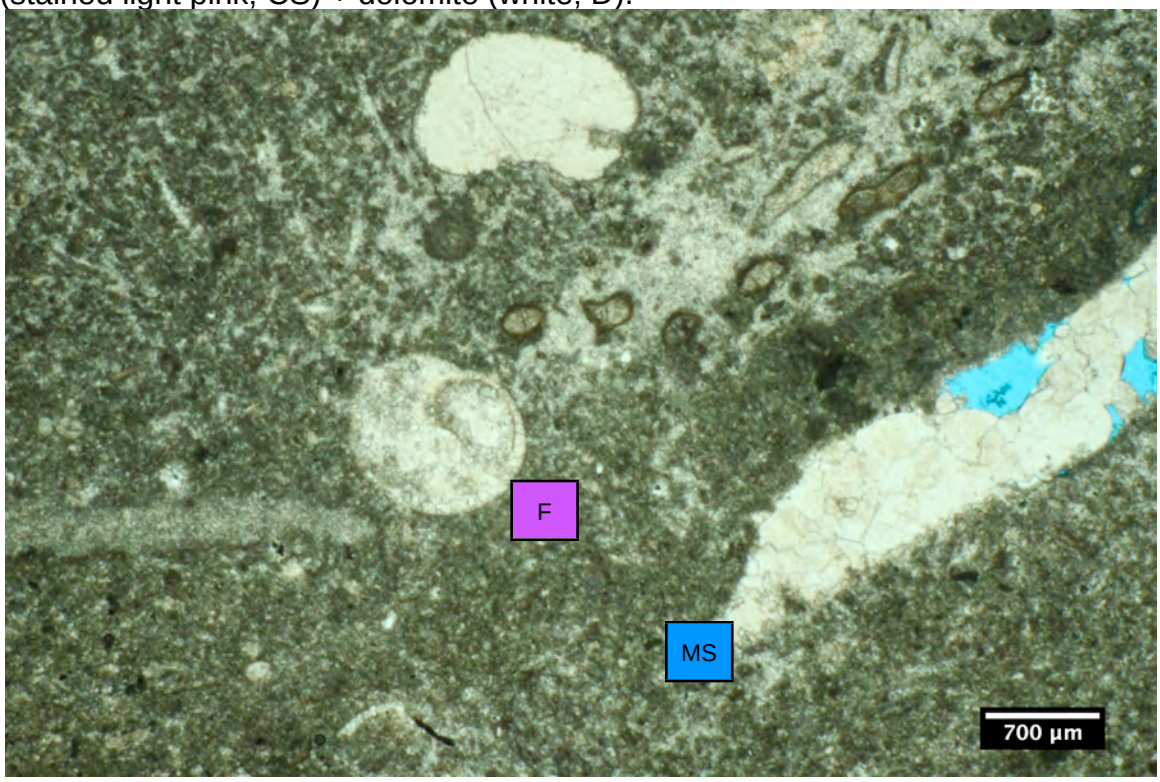
Photo Tags

Calcite spar cement	CS
Dolomite	D
Mollusk shell fragments	MS
Foram test	F

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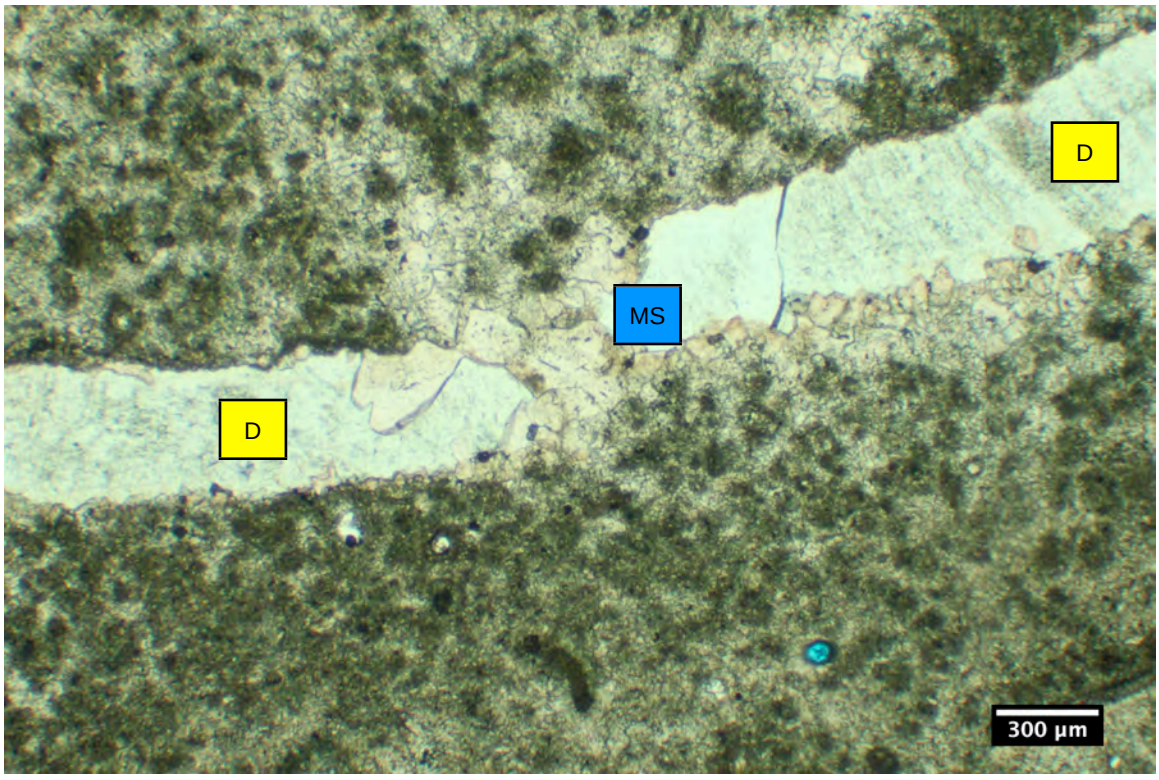
1A. Mollusk shell fragments (MS) recrystallized and replaced with calcite spar (stained light pink; CS) + dolomite (white; D).



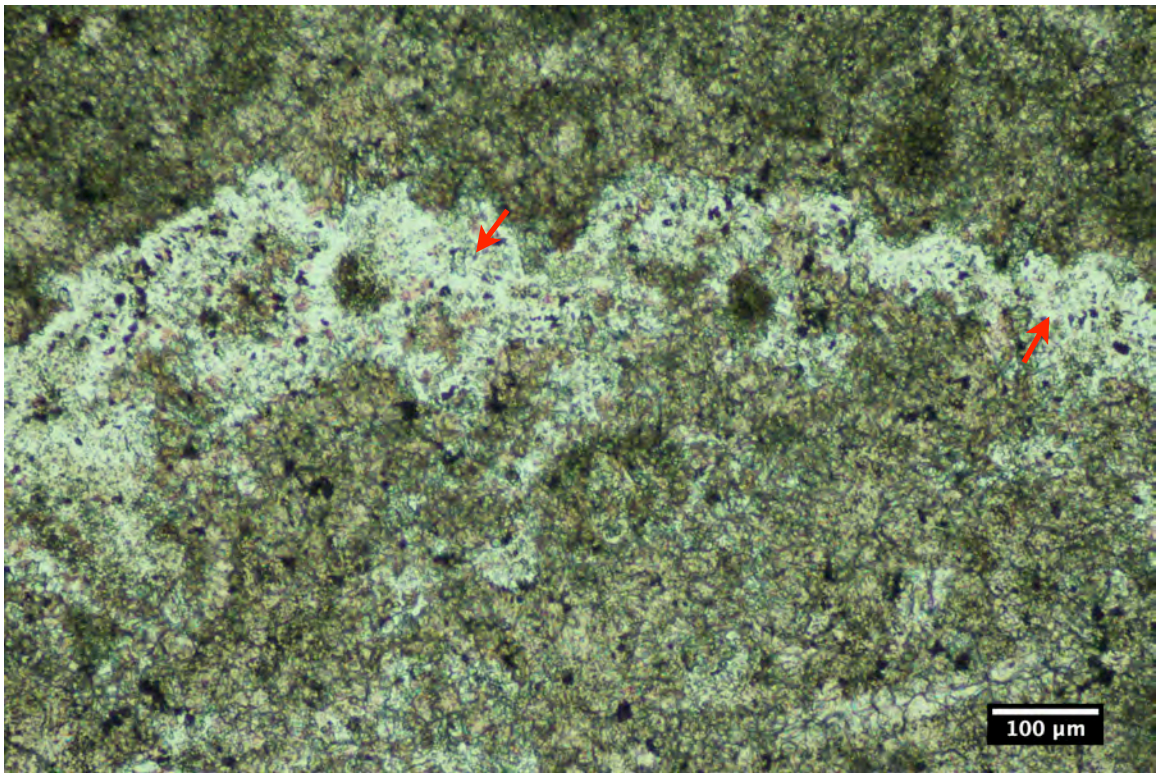
1B. Secondary intraparticle dissolution macroporosity (blue) associated with a leached mollusk shell fragment (MS). Recrystallized foram (?) test (F).

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SP-10-LOG 1 (32-32.4'); MI#19051-01



1C. Dolomite replacement (D) within a re-crystallized mollusk shell fragment (MS).



1D. Chert cement (red arrows) replacing portions of the lime mud groundmass within this limestone sample.

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SP-10-LOG 2 (46'); MI#19051-02 Petrographic Data

This core sample is characterized as a parallel-bedded, organic matter-rich, calcareous and fossiliferous, silty shale. The fabric and mineralogy of this core interval is noted as follows:

- The silty shale groundmass is densely packed & exhibits parallel-bedded lamina of organic matter-rich detrital clay interbedded with limestone skeletal fragments and lens-shaped concentrations of quartz-rich silt. The clay matrix fraction accounts for ~ 67% of the mineral volume & includes illite/mica, mixed-layered illite/smectite, kaolinite and chlorite.
- The silty shale is interbedded with clay matrix-rich skeletal lime wackstone. The interbedded limestone materials are burrow mottled, fossiliferous, and incorporate common lenses of organic-rich clay. The matrix materials locally drape the carbonate grains and fill intercrystalline voids of the limestone. Skeletal allochems include very poorly preserved mollusk shell fragments, calcareous algae plates, and foram tests. Most of the carbonate grains have been completely recrystallized and replaced with calcite spar cement.
- Burial compaction and deformation of the interbedded matrix materials has contributed to the development of pressure solution artifacts including low amplitude stylolites.
- Minor to trace amounts of micro-crack porosity are present within the organic-rich silty-shale materials. The fracture voids are parallel to bedding and likely represent artifacts related to fabric relaxation.

Mineralogical Data

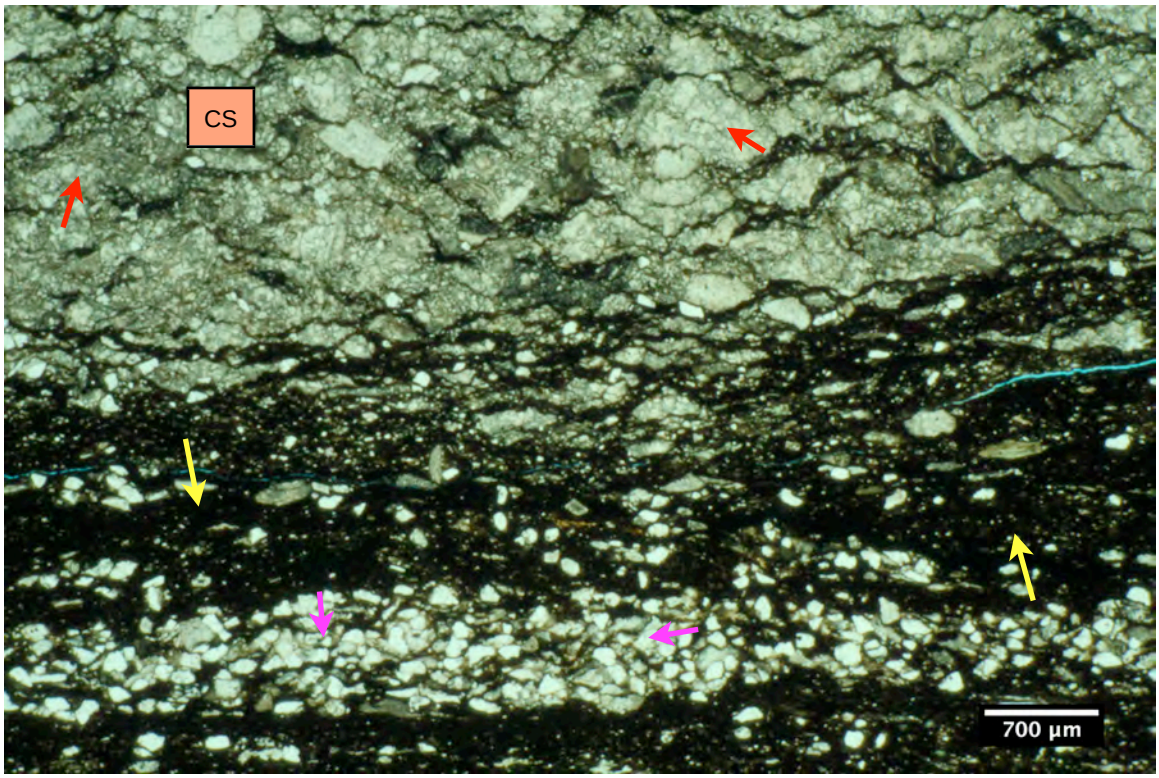
Mineral Constituents	Concentration (%)
Quartz	20
Albite	4
Microcline	1
Calcite	2
Siderite	1
Pyrite	5
Kaolinite	2
Chlorite	3
Illite/Mica	38
Mixed-Layered Illite/Smectite	24

Photo Tags

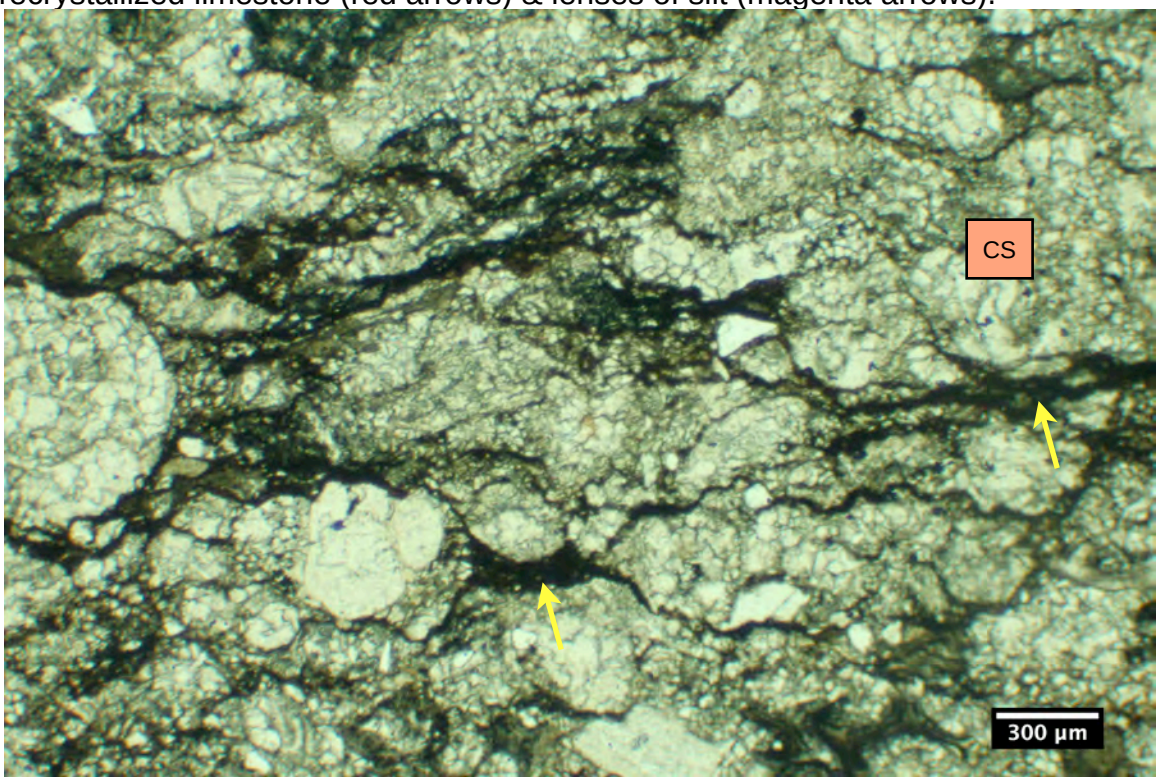
Calcite spar cement	CS
Dolomite	D
Mollusk shell fragments	MS
Foram test	F

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SP-10-LOG 2 (46'); MI#19051-02

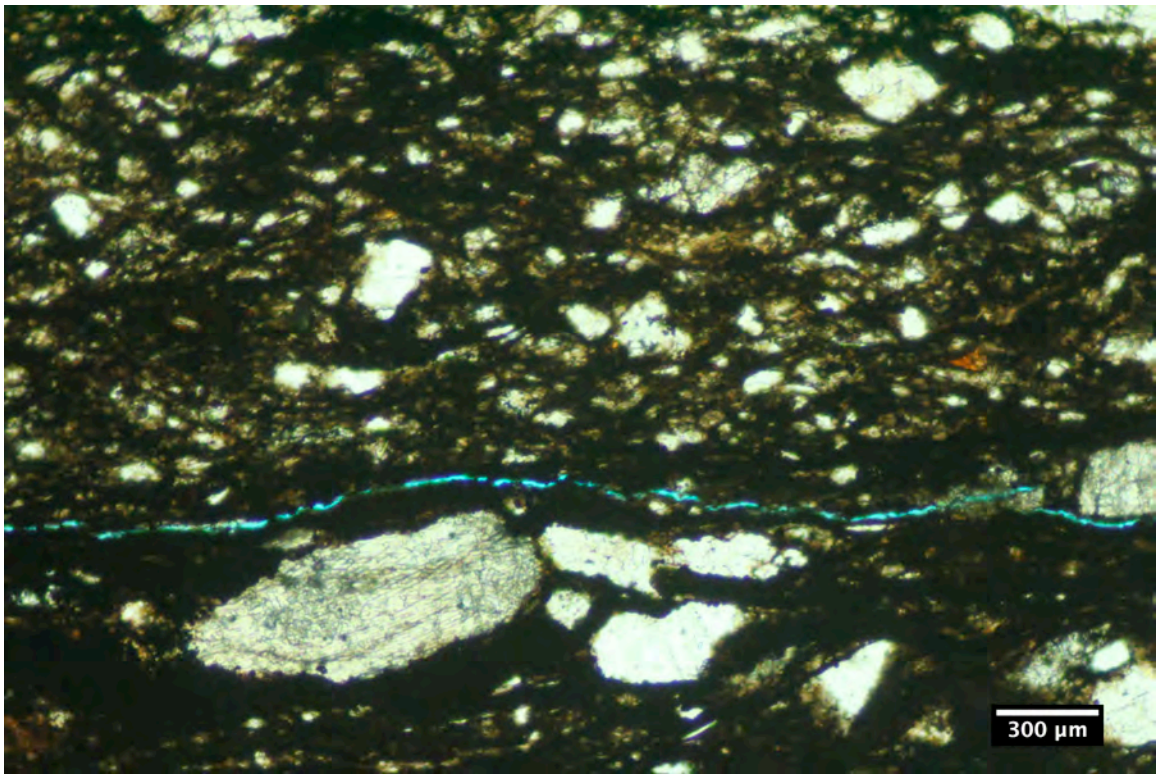


2A. The silty shale (yellow arrows) is organic matter-rich & contains interbeds of recrystallized limestone (red arrows) & lenses of silt (magenta arrows).

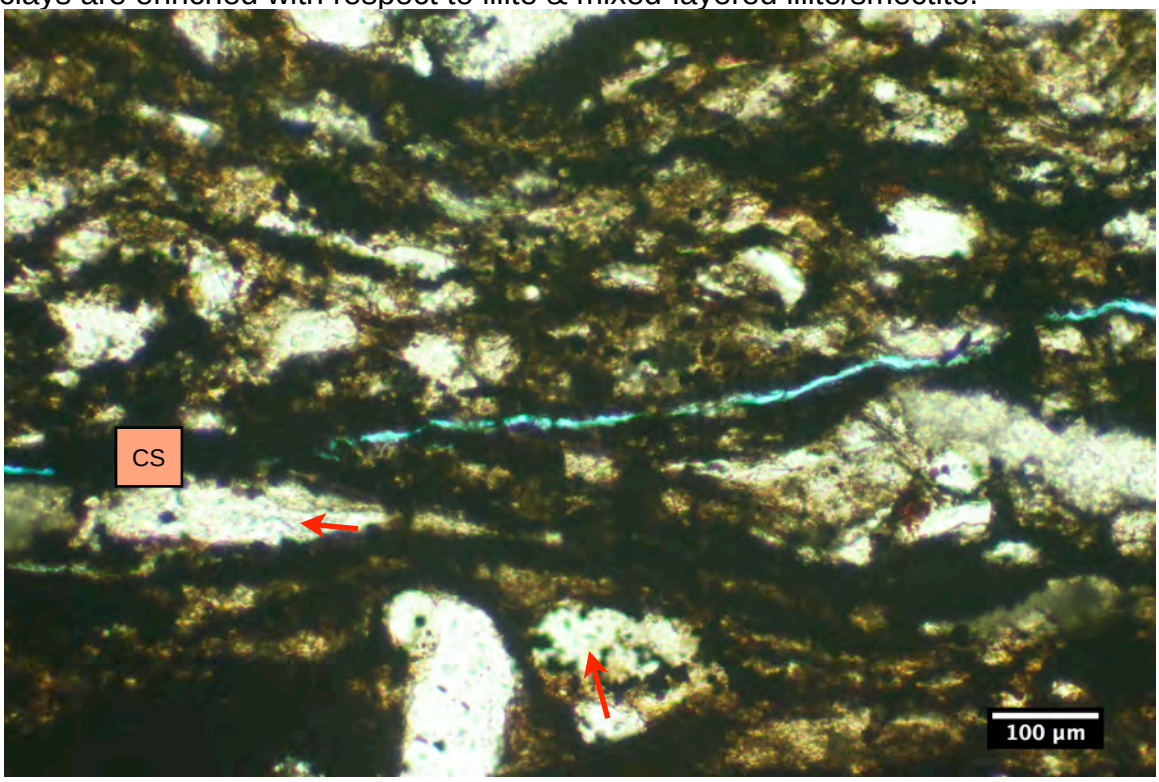


2B. The limestone interbed is flaser-bedded & exhibits lenses of black-colored, organic-rich matrix (yellow arrows) draping the calcite crystals (CS).

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2C. Micro-crack (blue) attributed to fabric relaxation of the compressed shale. The clays are enriched with respect to illite & mixed-layered illite/smectite.



2D. Nearly all of the available intergranular space is choked with organic-rich detrital clay of carbonate cement (red arrows).

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SP-10-LOG 3 (46'); MI#19051-03 Petrographic Data

This core sample is characterized as an organic matter and clay matrix-rich skeletal lime packstone. The limestone is non-porous and exhibits wavy or flaser bedding, with detrital clay matrix locally concentrated in the 'troughs' of the fabric. Clay lenses and lamina are locally deformed along low amplitude pressure solution seams.

- The limestone mineralogy is dominated by calcite (~93%), together with modest amounts of quartz (3%), pyrite (1%), and clay matrix minerals (~3%). The clay mineral suite for this sample includes a mix of illite/mica, mix-layered illite/smectite, kaolinite, and traces of chlorite.
- Skeletal allochems include: undifferentiated and locally recrystallized skeletal grains, mollusk shell fragments, foram tests, intraclasts (lime wackstone and lime mudstone), bryozoan fronds, gastropod fragments, and traces of quartz-rich silt and sand.
- Pyrite cement occurs as a common replacement for organic matter.

Mineralogical Data

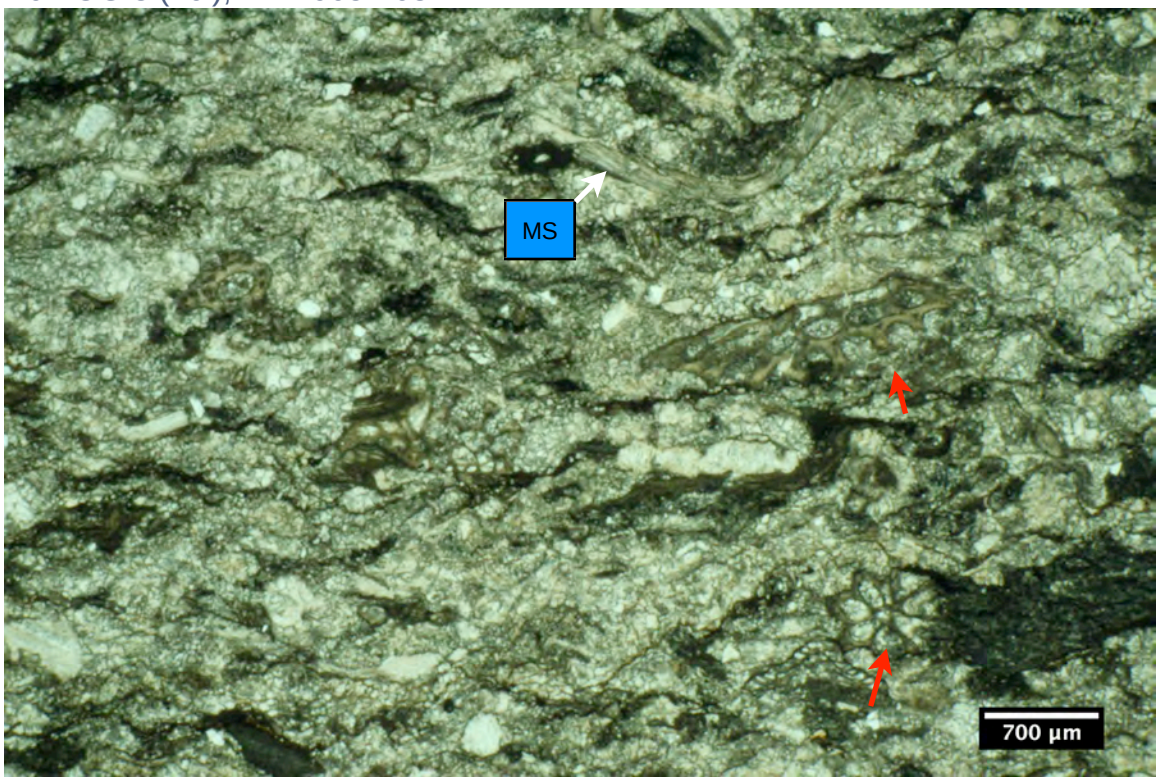
Mineral Constituents	Concentration (%)
Quartz	3
Calcite	93
Pyrite	1
Kaolinite	1
Chlorite	<0.5
Illite/Mica	1
Mixed-Layered Illite/Smectite	1

Photo Tags

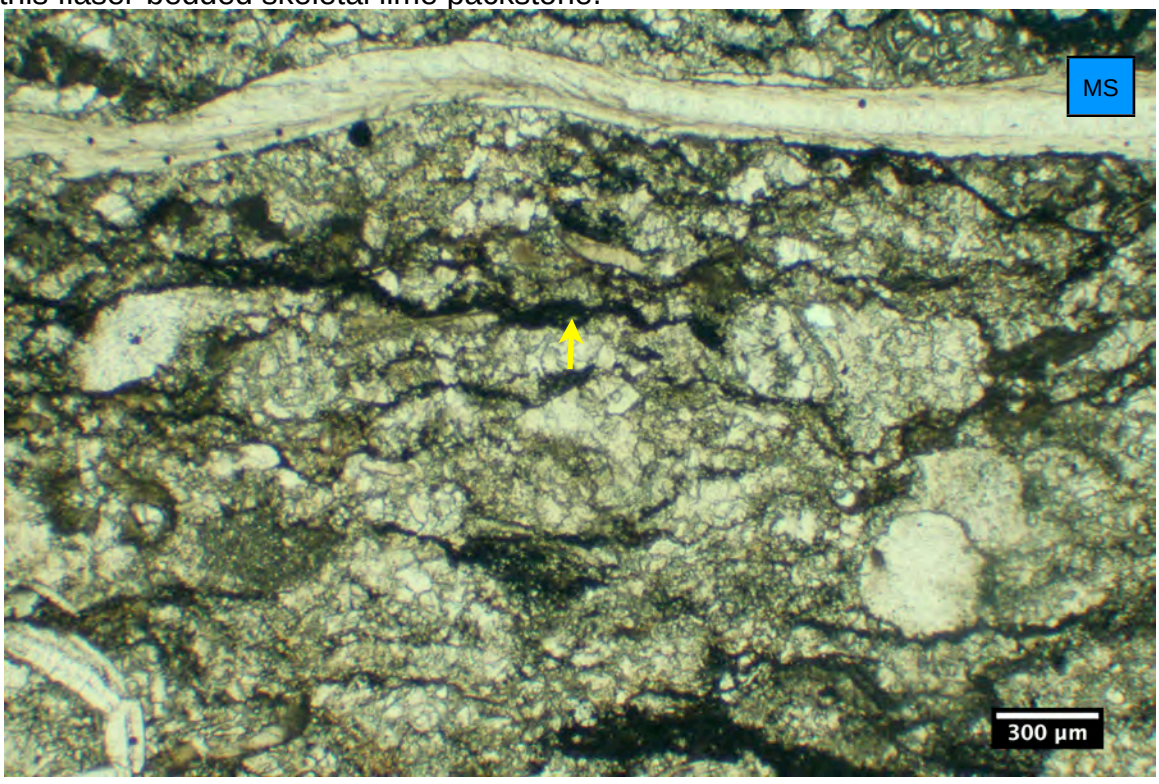
Calcite spar cement	CS
Dolomite	D
Mollusk shell fragments	MS
Foram test	F

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SP-10-LOG 3 (46'); MI#19051-03



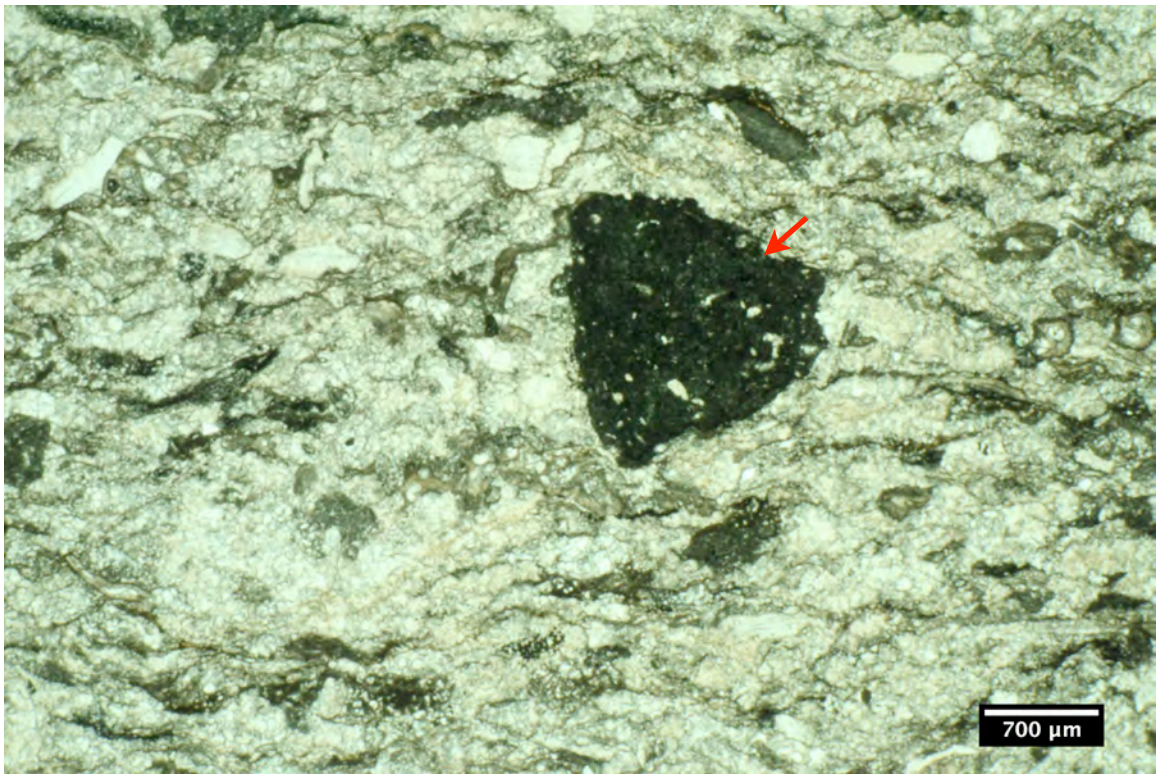
3A. Bryozoan fronds (red arrows) + poorly preserved mollusk shell fragments (MS) in this flaser-bedded skeletal lime packstone.



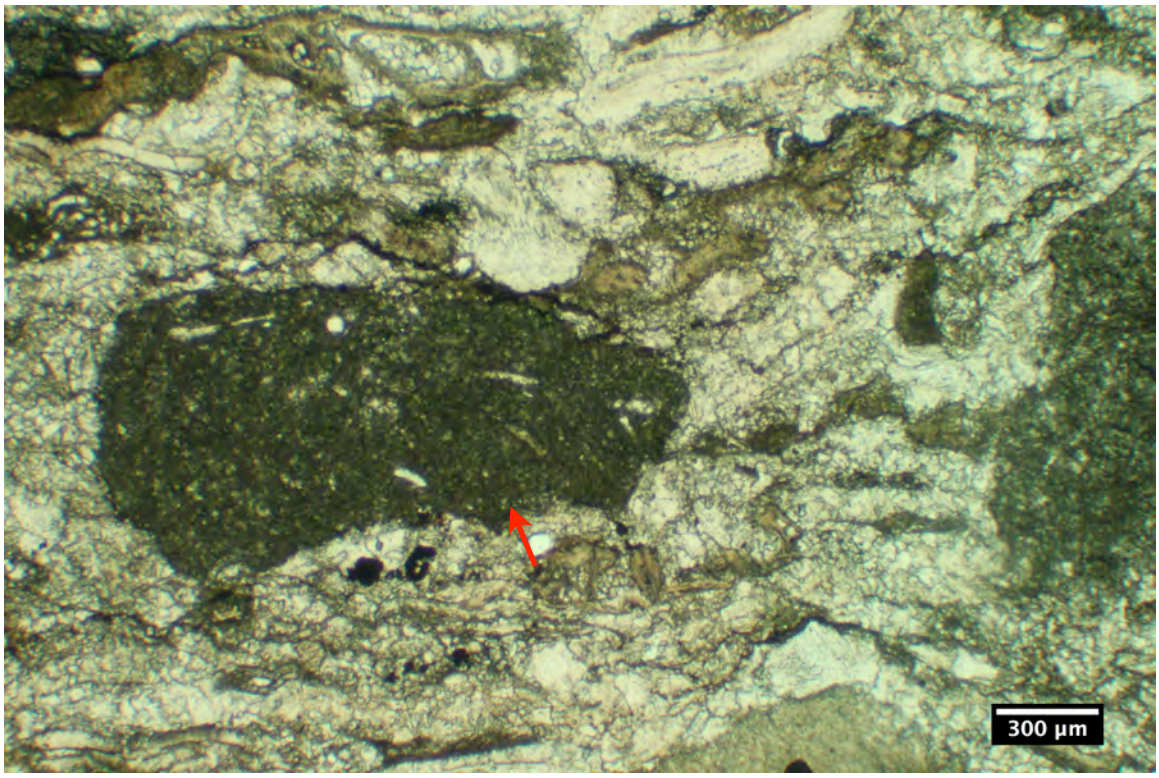
3B. Mollusk shell fragment (MS) + undifferentiated & skeletal fragments. Note the mechanically deformed & compacted matrix lenses (yellow arrow).

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SP-10-LOG 3 (46'); MI#19051-03



3C. Intraclast of lime wackestone (red arrow). The limestone fabric is non-porous.



3D. Intraclast (red arrow) within this extensively recrystallized skeletal lime packstone.

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SP-10-LOG 4 (72-72.4'); MI#19051-04 Petrographic Data

This core interval is comprised of densely-crystallized, burrow mottled, skeletal lime packstone/wackstone. The mineralogy and fabric properties for this sample are noted as follows:

- The sample fabric is parallel-bedded and burrow mottled. The skeletal grain assemblage is comprised of very poorly preserved and locally re-crystallized sponge spicules, calcareous algae plates, pelloids, and undifferentiated skeletal fragments.
- The limestone is locally interbedded with parallel bedded lamina of organic matter-rich silty-shale.
- The mineralogy of the limestone is dominated by calcite (91%), coupled with significant amounts of quartz-rich silt and sand (~6%), ferroan dolomite (~2%), and clay matrix minerals (~1%). The XRD analysis of the clay matrix fraction indicates a mineralogy dominated by illite/mica coupled with minor to accessory amounts of mixed-layered illite/smectite and kaolinite.
- The limestone fabric is described as non-porous and extensively recrystallized. Very finely crystalline calcite spar and patches of dolomite cement are common replacements for skeletal grains present in this sample.

Mineralogical Data

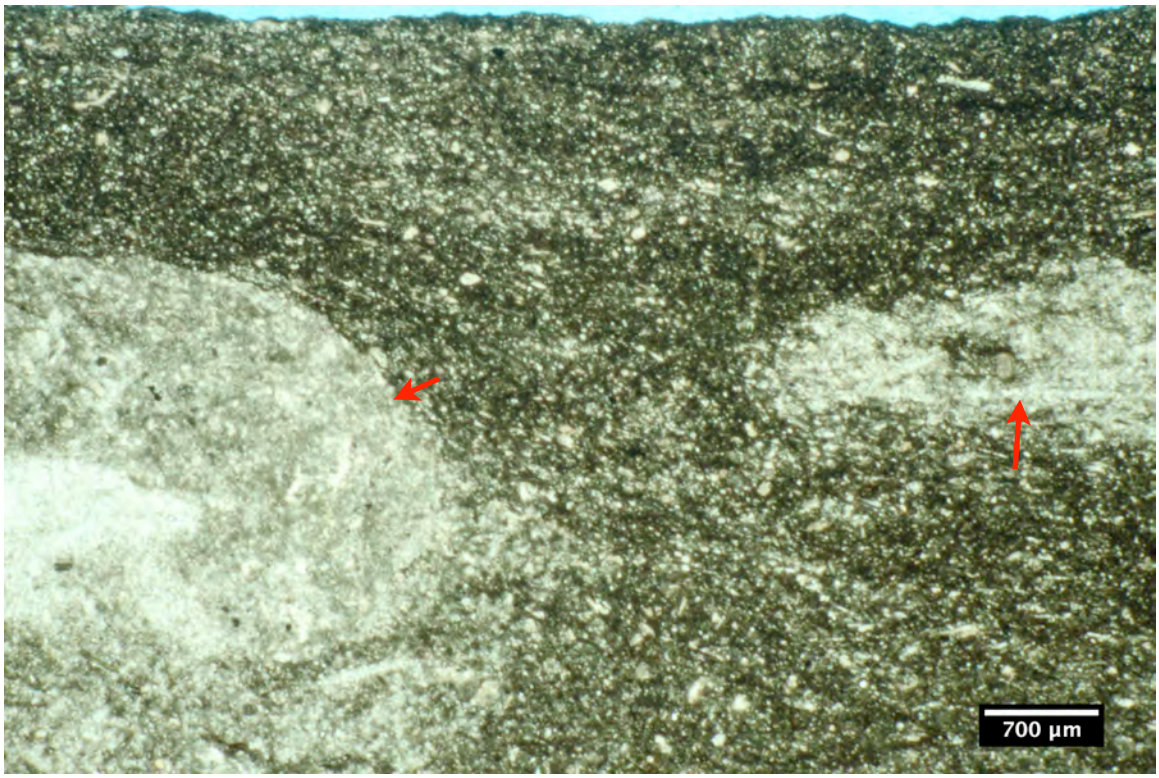
Mineral Constituents	Concentration (%)
Quartz	6
Calcite	91
Ferroan Dolomite	2
Kaolinite	<0.5
Illite/Mica	1
Mixed-Layered Illite/Smectite	<0.5

Photo Tags

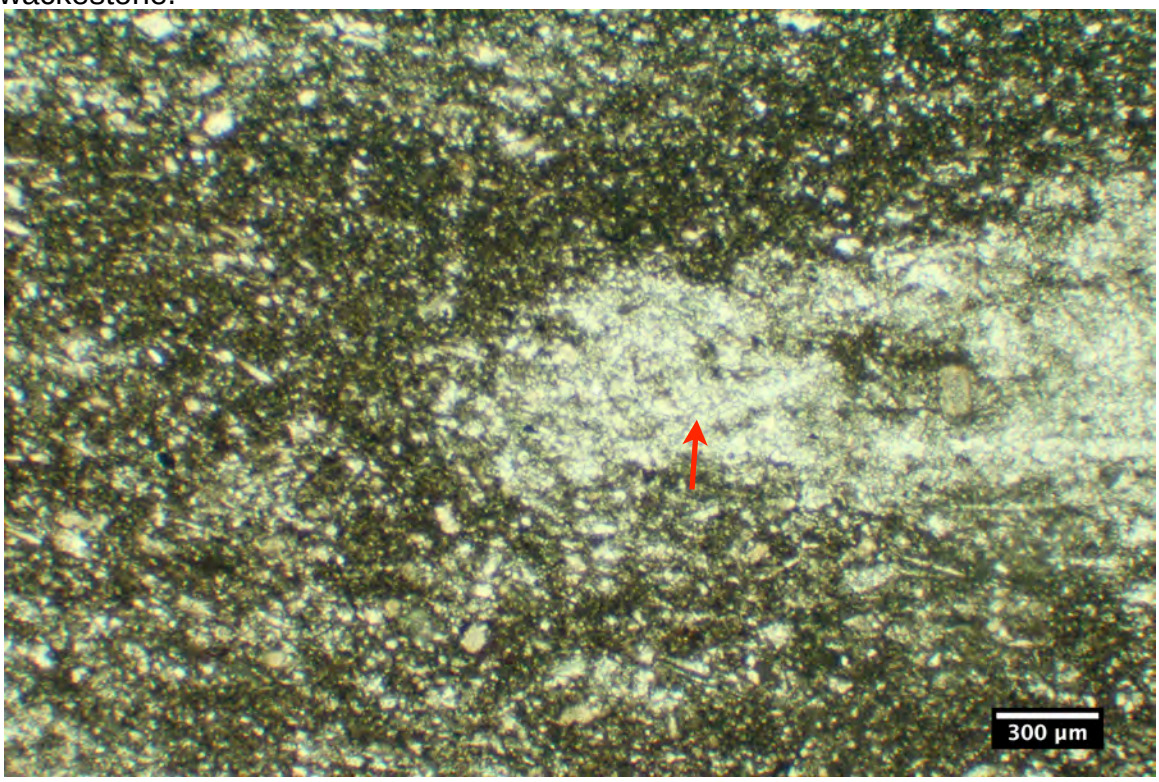
Calcite spar cement	CS
Dolomite	D
Mollusk shell fragments	MS
Foram test	F

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SP-10-LOG 4 (72-72.4'); MI#19051-04

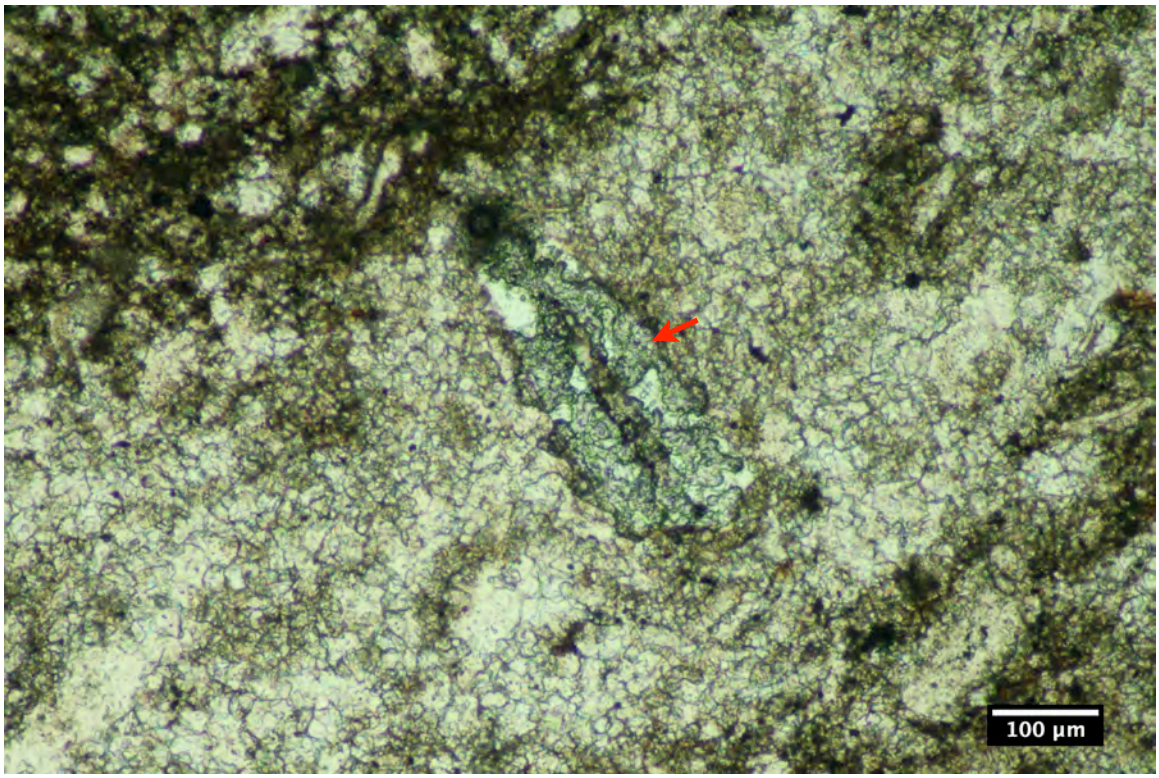


4A. Burrow molds (red arrows) within this sponge spicule-rich lime packstone/ wackestone.

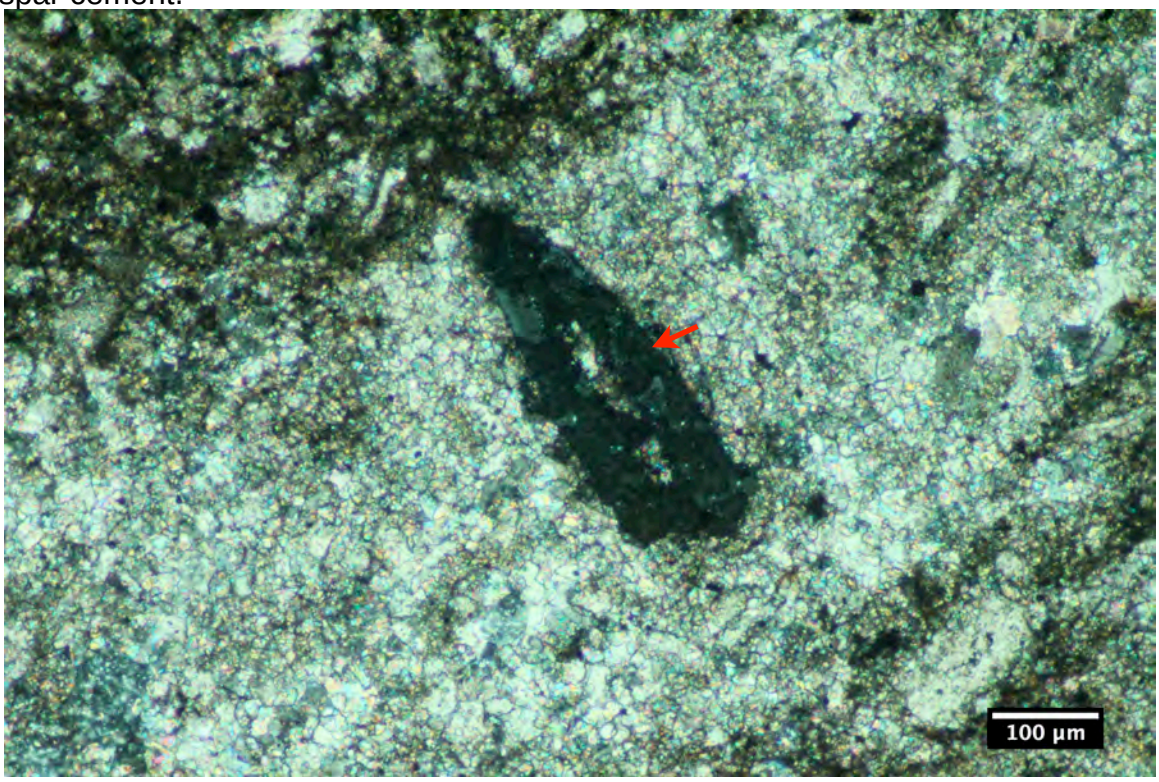


4B. The groundmass of this sample is enriched with respect to lime mud & contains recrystallized skeletal fragments that include sponge fragments, calcareous algae, pelloids, and undifferentiated skeletal fragments.

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4C. A phosphatic bone fragment (red arrows) surrounded by recrystallized calcite spar cement.



4D. As in Figure 4C, with cross polarized light.

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March 08, 2019

Client: Mineralogy Inc.

3321 East 27th Street

Tulsa, OK 74114

Requested By: Kristopher Murphy

National Environmental Laboratory Accreditation Program
Kansas CERT # E-10219

Sample Project Name:	19051
Date Samples Received:	February 25, 2019 Time: 9:15 sample temp upon arrival at lab = 19°C
Matrix:	Solid
Lab Log Numbers:	**BB25007-01 BB25007-02 BB25007-03 BB25007-04**
Work Order:	BB25007
Report #	BB25007-0308191045
EPA Lab ID#'s:	**Stillwater OK00092 Tulsa OK00983 OKC OK00129 ICR OK 001**
Oklahoma Certification:	Stillwater WasteWater, DEQ 8316/ Drinking Water, DEQ D9602 Tulsa WasteWater, DEQ 9905 / Drinking Water, DEQ D9901 Oklahoma City WasteWater DEQ 7202 / Drinking Water, DEQ D9937
Kansas Certification:	Stillwater NELAP CERT # E-10219 Oklahoma City NELAP CERT # E-10414
New Hampshire Cert.:	Oklahoma City Drinking Water NH ELAP Lab ID # 2072
Texas Certification:	Stillwater Drinking Water NELAP CERT # T105704533-14-1
Method Reference:	40 CFR 136, 141, and 261 Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020, March 1983. Test Methods for Evaluating Solid Wastes, SW-846, Final Update III. Standard Methods 1998 (20th Edition), Standard Methods 2005 (21st Edition) and Standard Methods 2011 (22nd Edition) for the Examination of Water and Wastewater.
Analysis Reference:	If qualifiers present in "Prep Info" or "Analysis Info", then analysis performed as follows: @= Tulsa Lab and * = OKC Lab. If no qualifiers present, then analysis performed at Stillwater Lab.

Accurate Environmental Laboratories certify that the test results performed at the Stillwater lab meet all requirements of NELAP. Any exceptions to this can be found in the report footer or Quality Control Section of the report.

This report is to only be replicated in its entirety.

Accurate Environmental sampling protocol was followed for any sampling performed by Accurate Field Services.

Sample: ***19051-01*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 2/25/19 0:00 **Lab Log#** BB25007-01

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Lithium (Li) EPA 6020A	Lithium	BPQL mg/kg dry		10.0	03/04/19 10:15 LF	03/06/19 11:26 LF
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Calcium	20.0 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:17 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Magnesium	0.567 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:17 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Potassium	BPQL meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:17 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Sodium	0.226 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:17 RW

Sample: ***19051-02*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 2/25/19 0:00 **Lab Log#** BB25007-02

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Lithium (Li) EPA 6020A	Lithium	76.0 mg/kg dry		10.0	03/04/19 10:15 LF	03/06/19 11:30 LF
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Calcium	16.2 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:21 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Magnesium	3.51 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:21 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Potassium	2.32 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:21 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Sodium	8.85 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:21 RW

Sample: ***19051-03*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 2/25/19 0:00 **Lab Log#** BB25007-03

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Lithium (Li) EPA 6020A	Lithium	BPQL mg/kg dry		10.0	03/04/19 10:15 LF	03/06/19 11:35 LF
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Calcium	21.6 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:24 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Magnesium	0.642 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:24 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Potassium	0.250 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:24 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Sodium	0.896 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:24 RW

Sample: ***19051-04*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 2/25/19 0:00 **Lab Log#** BB25007-04

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Lithium (Li) EPA 6020A	Lithium	BPQL mg/kg dry		10.0	03/04/19 10:15 LF	03/06/19 11:39 LF
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Calcium	21.1 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:28 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Magnesium	1.16 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:28 RW

Sample: **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 2/25/19 0:00 **Lab Log#** BB25007-04

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Potassium	0.313 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:28 RW
Exchangeable Cations EPA 9081 (No Cert. Avail.)	Sodium	0.822 meq/100g		0.100	02/28/19 09:30 LF	03/01/19 13:28 RW

Notes and Definitions

MCL Analyte concentration may exceed Maximum Contaminant Limit (MCL) for EPA Primary or Secondary Drinking Water Regulations.

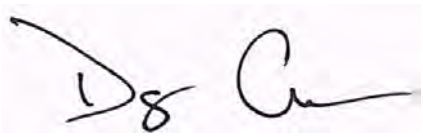
Analyte concentration may exceed regulatory limit.

PQL Practical Quantitation Limit - the method reporting limit (MRL) adjusted for any dilutions or other changes made to the sample to deal with interferences/matrix effects

BPQL Below Practical Quantitation Limit (if applicable).

The "Prep Date" of the QC analysis coincides with the characters of the appropriate QC Lab ID. (Example: 19 A 02 15 - BLK = 2019, Jan 2, Batch #15 - Blank)

Lab Manager



Quality Control Data

Blank Data

QC Lab #	Test Group	Test	Result	PQL	Flags
19C0429-BLK1	Lithium (Li) EPA 6020A	Lithium	BPQL mg/kg dry	10.0	

Duplicate Sample Data

QC Lab #	Test Group	Test Name	Source	Dup Result	Samp Result	% RPD	RPD Limit	Flags
19B2864-DUP1	Exchangeable Cations EPA 9081 (No Cert. Avail.)	Calcium	BB25007-04	21.7	21.1	3	20	
19B2864-DUP1	Exchangeable Cations EPA 9081 (No Cert. Avail.)	Magnesium	BB25007-04	1.19	1.16	3	20	
19B2864-DUP1	Exchangeable Cations EPA 9081 (No Cert. Avail.)	Potassium	BB25007-04	0.318	0.313	2	20	
19B2864-DUP1	Exchangeable Cations EPA 9081 (No Cert. Avail.)	Sodium	BB25007-04	0.896	0.822	9	20	

Laboratory Control Sample Data

Lab QC#	Test Group	Test Name	LCS Result	Spike Level	Units	% Rec.	Control Limits	Flags
19C0429-BS1	Lithium (Li) EPA 6020A	Lithium	491	495.0	mg/kg dry	99	85 - 115	

Matrix Spike Data

QC Lab #	Test Group	Test Name	Source Sample	Sample Result	Units	Spike Result	Spike Level	% Rec.	Acceptance Limits	Flags
19C0429-MS1	Lithium (Li) EPA 6020A	Lithium	BB25007-04	5.29	mg/kg dry	484	478.7	100	85 - 115	

Matrix Spike Duplicate Data

QC Lab #	Test Group	Test Name	Sample Result	Spike Result	Spike Level	Units	% Rec.	Rec. Limits	% RPD	RPD Limit	Flags
19C0429-MSD1	Lithium (Li) EPA 6020A	Lithium	5.29	482	490.2	ng/kg dry	97	85-115	0.5	20	

MINERALOGY- INC

MI NUMBER

BB25007

19051

DATE: Feb 25, 2019

P.O.#

PROJECT: 19051

DATE REQUESTED: Standard

BILL TO:

Mineralogy, Inc.
3321 E 27th ST
Tulsa, OK 74114
mickala@mineralogy-inc.com
kris@mineralogy-inc.com

PROJECT INFORMATION:

19051

M.I.#	SAMPLE ID	LOCATION	TYPE	ANALYSIS
01	19051-01			CEC
02	19051-02			CEC
03	19051-03			CEC
04	19051-04			CEC

No Sample date / time provided to Mineralogy.

19.5°C

SPECIAL INSTRUCTIONS / COMMENTS

RELINQUISHED BY Austin Shearmire — **DATE/TIME** 2/25/19 0915

RECEIVED BY — **DATE/TIME** 2/25/19 0915

MINERALOGY-INC

02/25/19

Accurate Labs
505 S. Lowry St.
Stillwater, OK 74074
Attn: Dr. Ali Fazel

Re: C.E.C. analysis (MI#19051-01 - 19051-04)

Dr. Fazel:

Please provide C.E.C. + leachate analysis for the included samples. The standard protocol you've used for our samples in the past would be great (i.e., calcium, sodium, potassium, magnesium). Results can be sent to kris@mineralogy-inc.com. If you have any questions, please feel free to call or write. Thanks as always for the continued service.

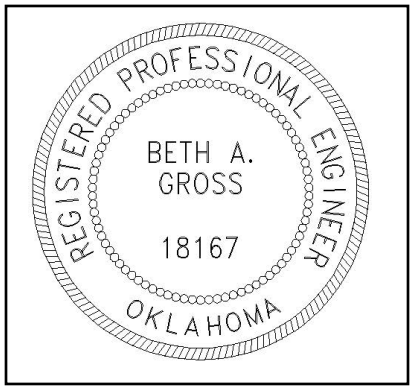
Best regards,

Kristopher Murphy
Mineralogy, Inc.

ATTACHMENT E
Certification by a Qualified Professional Engineer

CERTIFICATION BY A QUALIFIED PROFESSIONAL ENGINEER

I certify that the above described alternative source demonstration is appropriate for evaluating the groundwater monitoring data for the Northeastern Landfill CCR management area and that the requirements of OAC 252:517-9-6(g)(3)(B) have been met.



Beth Ann Gross
Printed Name of Licensed Professional Engineer

Beth Ann Gross
Signature

Geosyntec Consultants
2039 Centre Pointe Blvd, Suite 103
Tallahassee, Florida 32308

Oklahoma Firm Certificate of
Authorization No. 1996
Exp. 6/30/2026

18167	Oklahoma	December 3, 2025
License Number	Licensing State	Date

APPENDIX 4

Notices for Monitoring Program Transitions

Northeastern Power Station

Notice of Establishing Assessment Monitoring Program

Landfill

On December 11, 2024, it was determined that Northeastern Power Station's Landfill had statistically significant increases over background for Boron and Sulfate. Alternative source demonstrations were not successful within the 90-day period as allowed in 252:517-9-5(e)(2) prompting the initiation of an assessment monitoring program, which was established on March 2, 2025. Therefore, this notice is being placed in the operating record in accordance with the requirement of 252:517-9-5(e)(3).

Northeastern Power Station

Notice for Initiating an Assessment of Corrective Measures

Landfill

This notice is being provided, as required by OAC 252:517-9-7 that an Assessment of Corrective Measures was initiated on December 4, 2025 for Northeastern Landfill due to the statistically significant level that exceeds the established groundwater protection standard for Molybdenum.

AEP Internal - Low Risk - Archived - n34_cmp_rpt_esh0000051394.docx

APPENDIX 5

Well Installation/Decommissioning Logs – NA

APPENDIX 6

Groundwater monitoring Field and Laboratory Reports

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . **DATE:** 04/07-08/25 .

Well Identification Number	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-3S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Landfill	NA	Landfill	Slurry Wall	Landfill	Slurry Wall
Depth to Water (ft)	53.59	16.58	42.22	32.92	37.66	22.06
Measured Depth Total Depth of Well (ft.)	58.25	37.76	61.80	36.75	62.95	27.21
Height of Water Column (ft.)	4.66	21.18	19.58	3.83	25.29	5.15
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.76	3.45	3.19	0.62	4.12	0.84
Water Removed From Well (gallons)	1.00	----	10.00	3.00	13.00	1.50
Method of Removal	Pump	----	Pump	Pump	Pump	Pump
Was Well Purged Dry?	Yes	----	No	No	No	Yes
pH (standard units)	8.06	----	10.26	7.93	7.91	7.00
Temperature (°C)	18.49	----	19.88	20.74	18.38	16.62
Conductivity (µmhos/cc)	3,710	----	1910	4,840	1110	4420
Turbidity (NTU)	839	----	14.7	84.1	82.1	128
Appearance	Turbid	----	Clear	Slightly Turbid	Slightly Turbid	Turbid
Odor	None	----	None	None	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	250 mL HNO3 250 mL HCL 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	1517	----	1602	1533	805	842
Sample Date	4/8/2025	----	4/7/2025	4/7/2025	4/8/2025	4/8/2025

Metals & Hg Only

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:** 04/07-08/25 .

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)	43.10	Dry	23.99	15.58	34.27	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.)	10.76	----	34.43	17.57	24.24	----
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.75	----	5.61	2.86	3.95	----
Water Removed From Well (gallons)	6.00	----	17.00	----	12.00	----
Method of Removal	Pump	----	Pump	----	Pump	----
Was Well Purged Dry?	No	----	No	----	No	----
pH (standard units)	6.85	----	7.93	----	7.91	----
Temperature (°C)	19.31	----	18.56	----	18.82	----
Conductivity (µmhos/cc)	1,460	----	929	----	1,440	----
Turbidity (NTU)	19.2	----	8.4	----	92.3	----
Appearance	Clear	----	Clear	----	Slightly Turbid	----
Odor	None	----	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	----	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	1403	----	1117	----	938	----
Sample Date	4/7/2025	----	4/8/2025	----	4/8/2025	----

Landfill Dup
1403

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:** 04/07-08/25 .

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	Landfill	Slurry Wall
Depth to Water (ft)	11.18	10.39	12.94	7.08	43.34	25.85
Measured Depth Total Depth of Well (ft.)	58.70	33.54	64.50	43.30	63.10	36.71
Height of Water Column (ft.)	47.52	23.15	51.56	36.22	19.76	10.86
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	7.75	3.77	8.40	5.90	3.22	1.77
Water Removed From Well (gallons)	----	----	----	----	14.00	6.00
Method of Removal	----	----	----	----	Pump	Pump
Was Well Purged Dry?	----	----	----	----	No	No
pH (standard units)	----	----	----	----	8.59	12.23
Temperature (°C)	----	----	----	----	18.63	18.41
Conductivity (µmhos/cc)	----	----	----	----	1,500	3,680
Turbidity (NTU)	----	----	----	----	184	73.4
Appearance	----	----	----	----	Turbid	Amber
Odor	----	----	----	----	None	None
Containers	----	----	----	----	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	----	----	----	----	1041	1018
Sample Date	----	----	----	----	4/8/2025	4/8/2025

Slurry Wall Dup
1018

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:** 04/07-08/25 .

Well Identification Number	MW-10D	MW-10S	MW-11D	MW-11S	MW-12D	MW-12S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Landfill	NA	Landfill	NA	Landfill	Slurry Wall
Depth to Water (ft)	67.25	14.02	48.19	10.82	10.26	6.90
Measured Depth Total Depth of Well (ft.)	71.33	36.22	50.34	31.02	44.92	22.94
Height of Water Column (ft.)	4.08	22.20	2.15	20.20	34.66	16.04
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.67	3.62	0.35	3.29	5.65	2.61
Water Removed From Well (gallons)	1.50	----	0.25	----	13.50	6.25
Method of Removal	Pump	----	Pump	----	Pump	Pump
Was Well Purged Dry?	Yes	----	Yes	----	Yes	Yes
pH (standard units)	8.44	----	----	----	8.27	7.33
Temperature (°C)	18.22	----	----	----	17.43	18.87
Conductivity (µmhos/cc)	10,100	----	----	----	1,180	1,010
Turbidity (NTU)	75.3	----	----	----	152	79.8
Appearance	Slightly Turbid	----	----	----	Turbid	Slightly Turbid
Odor	None	----	----	----	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	----	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	1308	----	----	----	1408	1421
Sample Date	4/8/2025	----	----	----	4/8/2025	4/8/2025

Metals & Hg Only

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:** 04/07-08/25 .

Well Identification Number	MW-13D	MW-13S	MW-14	MW-15	MW-16	MW-17
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Landfill	Slurry Wall	Landfill	Landfill	Landfill	Landfill
Depth to Water (ft)	30.46	13.49	63.43	42.33	62.48	48.31
Measured Depth Total Depth of Well (ft.)	47.56	18.12	78.96	74.21	64.15	58.41
Height of Water Column (ft.)	17.10	4.63	15.53	31.88	1.67	10.10
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	2.79	0.75	2.53	5.20	0.27	1.65
Water Removed From Well (gallons)	9.00	2.00	8.00	10.75	----	2.50
Method of Removal	Pump	Pump	Pump	Pump	----	Pump
Was Well Purged Dry?	No	Yes	No	Yes	----	Yes
pH (standard units)	7.29	7.42	7.83	8.73	----	7.82
Temperature (°C)	19.02	20.04	18.88	19.11	----	17.15
Conductivity (µmhos/cc)	1,440	1290	5,560	1,430	----	1,670
Turbidity (NTU)	18.5	28.7	14.9	11.6	----	328
Appearance	Clear	Clear	Clear	Clear	----	Turbid
Odor	None	None	None	None	----	None
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C	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	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	1350	1334	1154	1646	----	903
Sample Date	4/8/2025	4/8/2025	4/8/2025	4/7/2025	----	4/8/2025

Metals & Hg Only

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:** 04/07-08/25 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Landfill	Landfill				
Depth to Water (ft)	25.71	20.20				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	68.07	73.60				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	11.10	12.00				
Water Removed From Well (gallons)	15.25	22.50				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	7.30	8.26				
Temperature (°C)	19.48	19.08				
Conductivity (µmhos/cc)	32,900	39,600				
Turbidity (NTU)	12.6	57.2				
Appearance	Clear	Clear/Black Floaters				
Odor	Sulphur	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	1451	1227				
Sample Date	4/8/2025	4/8/2025				

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:** 06/18/25 .

Well Identification Number	MW-1D	MW-10D	MW-17			
Activities	Gauge	Gauge	Gauge			
Samples	Landfill	Landfill	Landfill			
Depth to Water (ft)	55.62	68.88	54.12			
Measured Depth Total Depth of Well (ft.)	58.25	71.33	58.41			
Height of Water Column (ft.)	2.63	2.45	4.29			
Well Size (I.D.) (inches)	2	2	2			
Volume of Water in Well (gallons)	0.43	0.40	0.70			
Water Removed From Well (gallons)	0.25	0.25	0.50			
Method of Removal	Pump	Pump	Pump			
Was Well Purged Dry?	Yes	Yes	Yes			
pH (standard units)	----	----	----			
Temperature (°C)	----	----	----			
Conductivity (µmhos/cc)	----	----	----			
Turbidity (NTU)	----	----	----			
Appearance	----	----	----			
Odor	----	----	----			
Containers	3 x 1L HNO3 1 L Cool 0-6C	3 x 1L HNO3 1 L Cool 0-6C	3 x 1L HNO3 1 L Cool 0-6C			
Sample Time	----	----	----			
Sample Date	----	----	----			

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:** 06/18/25 .

Well Identification Number	SP-1	SP-2	SP-4	SP-5R	SP-10	SP-11
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	BAP	BAP	BAP	BAP	BAP++	BAP
Depth to Water (ft)	14.55	18.37	12.13	3.83	12.29	7.89
Measured Depth Total Depth of Well (ft.)	37.99	38.19	38.30	78.00	54.10	34.51
Height of Water Column (ft.)	23.44	19.82	26.17	74.17	41.81	26.62
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	3.82	3.23	4.27	12.09	6.82	4.34
Water Removed From Well (gallons)	12.00	12.00	10.50	28.00	18.75	9.00
Method of Removal	Pump	Pump	Pump	Pump	Pump	Pump
Was Well Purged Dry?	No	No	Yes	Yes	Yes	Yes
pH (standard units)	7.51	7.61	7.53	7.71	7.80	7.62
Temperature (°C)	20.18	18.96	20.41	20.47	18.94	19.06
Conductivity (µmhos/cc)	926	3,590	2,000	2,880	6,140	1,500
Turbidity (NTU)	16.9	7.9	20.6	17.4	13.8	32.6
Appearance	Clear	Clear	Clear	Clear	Clear	Clear
Odor	None	None	None	None	Sulphur	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	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	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	1249	1223	1400	1454	1138	1157
Sample Date	6/18/2025	6/18/2025	6/18/2025	6/18/2025	6/18/2025	6/18/2025

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:** 06/18/25 .

Well Identification Number	SP-3	SP-6	SP-7	SP-8	SP-9	
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	
Samples	NA	NA	NA	NA	NA	
Depth to Water (ft)	18.17	17.94	23.06	3.25	35.50	
Measured Depth Total Depth of Well (ft.)	37.90	73.93	84.02	74.06	78.82	
Height of Water Column (ft.)	19.73	55.99	60.96	70.81	43.32	
Well Size (I.D.) (inches)	2	2	2	2	2	
Volume of Water in Well (gallons)	3.22	9.13	9.94	11.54	7.06	
Water Removed From Well (gallons)	----	----	----	----	----	
Method of Removal	----	----	----	----	----	
Was Well Purged Dry?	----	----	----	----	----	
pH (standard units)	----	----	----	----	----	
Temperature (°C)	----	----	----	----	----	
Conductivity (µmhos/cc)	----	----	----	----	----	
Turbidity (NTU)	----	----	----	----	----	
Appearance	----	----	----	----	----	
Odor	----	----	----	----	----	
Containers	----	----	----	----	----	
Sample Time	----	----	----	----	----	
Sample Date	----	----	----	----	----	

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:** .

Well Identification Number	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-3S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Landfill	NA	Landfill	Slurry Wall	Landfill	Slurry Wall
Depth to Water (ft)	55.00	18.34	52.28	32.83	37.49	21.26
Measured Depth Total Depth of Well (ft.)	58.25	37.76	61.80	36.75	62.95	27.21
Height of Water Column (ft.)	3.25		9.52	3.92	25.46	5.95
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.53		1.55	0.64	4.15	0.97
Water Removed From Well (gallons)	0.25	----	5.0	3.0	13.0	1.0
Method of Removal	Pump	----	Pump	Pump	Pump	Pump
Was Well Purged Dry?	YES	----	NO	NO	NO	YES
pH (standard units)	—	----	11.24	8.01	7.79	7.55
Temperature (°C)	—	----	17.51	18.23	19.06	18.98
Conductivity (µmhos/cc)	—	----	1800	4060	912	3840
Turbidity (NTU)	—	----	42.6	46.3	12.6	60.1
Appearance	—	----	CLEAR	CLEAR	CLEAR	CLEAR WITH FLOATERS
Odor	—	----	NONE	NONE	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	250 mL HNO3 250 mL HCL 1 L Cool.0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	—	----	1609	1556	0857	0918
Sample Date	—	----	10/28/25	10/28/25	10/28/25	10/28/25

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

METALS + Hg ONLY

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

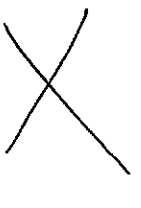
SAMPLED BY: Kenny McDonald . **DATE:** .

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)	43.75	Dry	24.88	20.27	37.85	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.)	10.11	—	33.54	—	20.66	—
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.65	—	5.47	—	3.37	—
Water Removed From Well (gallons)	8.0	----	18.0	----	12.0	—
Method of Removal	Pump	----	Pump	----	Pump	----
Was Well Purged Dry?	No	----	No	----	No	—
pH (standard units)	7.44	----	7.86	----	7.62	—
Temperature (°C)	17.90	----	17.38	----	19.05	—
Conductivity (µmhos/cc)	1130	----	864	----	1146	—
Turbidity (NTU)	25.3	----	18.6	----	216	—
Appearance	Clear	----	Clear	----	Turbid	—
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	----	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	0821	----	1647	----	0949	—
Sample Date	10/28/25	----	10/28/25	----	10/28/25	—

Landfill Duplicate 0821

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:** .

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	Landfill	Slurry Wall
Depth to Water (ft)	10.49	9.43	24.92	7.89	44.14	25.15
Measured Depth Total Depth of Well (ft.)	58.70	33.54	64.50	43.30	63.10	36.71
Height of Water Column (ft.)					18.96	11.56
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)					3.09	1.88
Water Removed From Well (gallons)	----	----	----	----	9.50	6.0
Method of Removal	----	----	----	----	Pump	Pump
Was Well Purged Dry?	----	----	----	----	NO	NO
pH (standard units)	----	----	----	----	8.97	11.96
Temperature (°C)	----	----	----	----	17.04	17.78
Conductivity (µmhos/cc)	----	----	----	----	1360	3270
Turbidity (NTU)	----	----	----	----	171	102
Appearance	----	----	----	----	TURBID	YELLOW TINT
Odor	----	----	----	----	NONE	NONE
Containers	----	----	----	----	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	----	----	----	----	1206	1013
Sample Date	----	----	----	----	10/28/25	10/28/25

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

SLURRY WALL DUP 1013

X

NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . **DATE:** .

Well Identification Number	MW-10D	MW-10S	MW-11D	MW-11S	MW-12D	MW-12S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Landfill	NA	Landfill	NA	Landfill	Slurry Wall
Depth to Water (ft)	68.37	16.45	47.96	11.46	15.12	12.58
Measured Depth Total Depth of Well (ft.)	71.33	36.22	50.34	31.02	44.92	22.94
Height of Water Column (ft.)	2.96	—	—	—	29.80	10.36
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.48	—	—	—	4.86	1.69
Water Removed From Well (gallons)	0.25	----	—	----	11.75	2.5
Method of Removal	Pump	----	Pump	----	Pump	Pump
Was Well Purged Dry?	YES	----	—	----	YES	YES
pH (standard units)	—	----	—	----	9.14	6.99
Temperature (°C)	—	----	—	----	17.13	18.98
Conductivity (µmhos/cc)	—	----	—	----	1080	1290
Turbidity (NTU)	—	----	—	----	124	42.3
Appearance	—	----	—	----	SLIGHTLY 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	----	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C
Sample Time	—	----	—	----	1506	1517
Sample Date	—	----	—	----	10/28/25	10/28/25

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:** .

Well Identification Number	MW-13D	MW-13S	MW-14	MW-15	MW-16	MW-17
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Landfill	Slurry Wall	Landfill	Landfill	Landfill	Landfill
Depth to Water (ft)	38.02	16.36	69.87	53.56	61.75	54.04
Measured Depth Total Depth of Well (ft.)	47.56	18.12	78.96	74.21	64.15	58.41
Height of Water Column (ft.)	9.54	1.76	9.09	20.95	2.40	4.37
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.56	0.28	1.48	3.41	0.39	0.71
Water Removed From Well (gallons)	5.0	0.25	[illegible]	7.75	0.25	0.5
Method of Removal	Pump	----	Pump	Pump	---	Pump
Was Well Purged Dry?	No	Yes	Yes	Yes	Yes	Yes
pH (standard units)	8.08	—	7.90	8.82	—	—
Temperature (°C)	17.04	—	18.78	18.85	—	—
Conductivity (µmhos/cc)	1320	—	7660	1320	—	—
Turbidity (NTU)	144	—	216	47.3	—	—
Appearance	SLIGHTLY TURBID	—	TURBID	CLEAR	—	—
Odor	NONE	—	NONE	NONE	—	—
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 250 mL HCL 1 L Cool 0-6C	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	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	1434	—	0752	1112	—	—
Sample Date	10/28/25	—	10/28/25	10/28/25	—	—

MEANS Hg + 3rd party

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

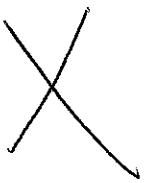
NORTHEASTERN POWER PLANT
GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald . **DATE:** .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Landfill	Landfill				
Depth to Water (ft)	26.43	18.66				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	67.35	75.14				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	10.98	12.25				
Water Removed From Well (gallons)	19.75	29.25				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	7.12	7.68				
Temperature (°C)	18.10	17.79				
Conductivity (µmhos/cc)	32400	38000				
Turbidity (NTU)	0.0	19.2				
Appearance	BLACK TINT	CLEAR - BLACK TINT				
Odor	MINT	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	0734	1753				
Sample Date	10/28/25	10/27/25				

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:** _____.

Well Identification Number	SP-1	SP-2	SP-4	SP-5R	SP-10	SP-11
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	BAP	BAP	BAP	BAP	BAP	BAP
Depth to Water (ft)	15.77	22.69	18.06	4.20	TOC	11.79
Measured Depth Total Depth of Well (ft.)	37.99	38.19	38.30	78.00	54.10	34.51
Height of Water Column (ft.)	22.22	15.50	20.24	~~73.80~~	54.10	22.72
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	3.62	2.53	3.30	12.03	8.82	3.70
Water Removed From Well (gallons)	12.5	10.0	8.25	26.75	20.5	7.75
Method of Removal	Pump	Pump	Pump	Pump	Pump	Pump
Was Well Purged Dry?	NO	NO	YES	YES	YES	YES
pH (standard units)	7.87	7.74	8.04	8.14	7.88	7.91
Temperature (°C)	18.53	17.88	18.23	18.73	19.98	20.13
Conductivity (µmhos/cc)	1140	3510	1930	2610	5750	1400
Turbidity (NTU)	21.4	11.9	21.8	33.9	2.5	18.6
Appearance	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
Odor	NONE	NONE	NONE	NONE	SULFUR	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	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	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	1611	1330	1725	1809	1427	1502
Sample Date	10/27/25	10/27/25	10/28/25	10/28/25	10/27/25	10/27/25

BAP DUP 1611

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:** _____.

Well Identification Number	SP-3	SP-6	SP-7	SP-8	SP-9	
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	
Samples	NA	NA	NA	NA	NA	
Depth to Water (ft)	0.36	18.17	22.50	5.56	33.29	
Measured Depth Total Depth of Well (ft.)	37.90	73.93	84.02	74.06	78.82	
Height of Water Column (ft.)						
Well Size (I.D.) (inches)	2	2	2	2	2	
Volume of Water in Well (gallons)						
Water Removed From Well (gallons)	----	----	----	----	----	
Method of Removal	----	----	----	----	----	
Was Well Purged Dry?	----	----	----	----	----	
pH (standard units)	----	----	----	----	----	
Temperature (°C)	----	----	----	----	----	
Conductivity (µmhos/cc)	----	----	----	----	----	
Turbidity (NTU)	----	----	----	----	----	
Appearance	----	----	----	----	----	
Odor	----	----	----	----	----	
Containers	----	----	----	----	----	
Sample Time	----	----	----	----	----	
Sample Date	----	----	----	----	----	

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: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-1D
Customer Description:
Lab Number: 251010-001
Preparation:
Date Collected: 04/08/2025 16:17 EDT
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.386	µg/L	1	0.100	0.008		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Arsenic	4.91	µg/L	1	0.10	0.03		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Barium	210	µg/L	1	0.20	0.05		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Beryllium	1.07	µg/L	10	0.50	0.07		GES	04/17/2025 18:08	EPA 200.8-1994, Rev. 5.4
Boron	1.01	mg/L	1	0.050	0.007		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Cadmium	0.986	µg/L	1	0.020	0.004		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Calcium	264	mg/L	10	0.5	0.2		GES	04/17/2025 18:08	EPA 200.8-1994, Rev. 5.4
Chromium	13.2	µg/L	1	0.30	0.07		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Cobalt	8.66	µg/L	1	0.020	0.005		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Lead	13.0	µg/L	1	0.20	0.05		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Lithium	0.0877	mg/L	10	0.0030	0.0006		GES	04/17/2025 18:08	EPA 200.8-1994, Rev. 5.4
Magnesium	68.9	mg/L	1	0.100	0.009		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Mercury	19	ng/L	1	5	2		RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	8.4	µg/L	1	0.5	0.1		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Potassium	7.22	mg/L	1	0.10	0.01		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Selenium	5.54	µg/L	1	0.50	0.04		GES	04/16/2025 17:22	EPA 200.8-1994, Rev. 5.4
Sodium	678	mg/L	10	2.0	0.2		GES	04/17/2025 18:08	EPA 200.8-1994, Rev. 5.4
Thallium	0.22	µg/L	1	0.20	0.02		GES	04/16/2025 17:22	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: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-2D
Lab Number: 251010-002
Date Collected: 04/07/2025 17:02 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.380	µg/L	1	0.100	0.008		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Arsenic	14.9	µg/L	1	0.10	0.03		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Barium	17.4	µg/L	1	0.20	0.05		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Boron	9.09	mg/L	1	0.050	0.007		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Cadmium	0.168	µg/L	1	0.020	0.004		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Calcium	14.7	mg/L	1	0.05	0.02		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Chromium	0.43	µg/L	1	0.30	0.07		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Cobalt	0.289	µg/L	1	0.020	0.005		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Lead	1.21	µg/L	1	0.20	0.05		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Lithium	0.00146	mg/L	1	0.00030	0.00006		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Magnesium	1.05	mg/L	1	0.100	0.009		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Mercury	15	ng/L	1	5	2		RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	465	µg/L	1	0.5	0.1		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Potassium	4.43	mg/L	1	0.10	0.01		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Selenium	14.4	µg/L	1	0.50	0.04		GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4
Sodium	359	mg/L	5	1.0	0.1		GES	04/17/2025 18:14	EPA 200.8-1994, Rev. 5.4
Thallium	0.11	µg/L	1	0.20	0.02	J1	GES	04/16/2025 17:28	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.33	pCi/L	0.10	0.18		WCG	05/02/2025 16:11	SW-846 9315-1986, Rev. 0
Carrier Recovery	115	%						
Radium-228	0.69	pCi/L	0.15	0.51		TTP	04/29/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	81.2	%						

* 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.

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: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-3D
Lab Number: 251010-003
Date Collected: 04/08/2025 09:05 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.055	µg/L	1	0.100	0.008	J1	GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Arsenic	8.21	µg/L	1	0.10	0.03		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Barium	115	µg/L	1	0.20	0.05		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Beryllium	0.064	µg/L	1	0.050	0.007		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Boron	0.893	mg/L	1	0.050	0.007		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Cadmium	0.109	µg/L	1	0.020	0.004		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Calcium	116	mg/L	1	0.05	0.02		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Chromium	0.90	µg/L	1	0.30	0.07		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Cobalt	0.381	µg/L	1	0.020	0.005		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Lead	1.01	µg/L	1	0.20	0.05		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Lithium	0.0132	mg/L	1	0.00030	0.00006		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Magnesium	36.7	mg/L	1	0.100	0.009		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Mercury	3	ng/L	1	5	2	J1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	2.9	µg/L	1	0.5	0.1		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Potassium	1.65	mg/L	1	0.10	0.01		GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Selenium	0.20	µg/L	1	0.50	0.04	J1	GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4
Sodium	54.5	mg/L	1	0.20	0.02		GES	04/22/2025 18:55	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/16/2025 17:33	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.82	pCi/L	0.11	0.14	R2	WCG	05/02/2025 16:11	SW-846 9315-1986, Rev. 0
Carrier Recovery	215	%						
Radium-228	2.65	pCi/L	0.15	0.41		TTP	04/29/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	84.3	%						

* 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.

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Water Analysis Report

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Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-4D
Lab Number: 251010-004
Date Collected: 04/07/2025 15:03 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.131	µg/L	1	0.100	0.008		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Arsenic	2.44	µg/L	1	0.10	0.03		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Barium	130	µg/L	1	0.20	0.05		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Beryllium	0.053	µg/L	1	0.050	0.007		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Boron	0.958	mg/L	1	0.050	0.007		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Cadmium	0.467	µg/L	1	0.020	0.004		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Calcium	221	mg/L	5	0.3	0.1		GES	04/17/2025 18:19	EPA 200.8-1994, Rev. 5.4
Chromium	1.62	µg/L	1	0.30	0.07		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Cobalt	3.43	µg/L	1	0.020	0.005		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Lead	1.37	µg/L	1	0.20	0.05		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Lithium	0.00417	mg/L	1	0.00030	0.00006		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Magnesium	26.0	mg/L	1	0.100	0.009		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	3.8	µg/L	1	0.5	0.1		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Potassium	1.74	mg/L	1	0.10	0.01		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Selenium	0.69	µg/L	1	0.50	0.04		GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4
Sodium	94.6	mg/L	5	1.0	0.1		GES	04/17/2025 18:19	EPA 200.8-1994, Rev. 5.4
Thallium	0.09	µg/L	1	0.20	0.02	J1	GES	04/16/2025 17:38	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.57	pCi/L	0.11	0.11	R2	WCG	05/02/2025 16:11	SW-846 9315-1986, Rev. 0
Carrier Recovery	145	%						
Radium-228	0.76	pCi/L	0.14	0.44		TTP	04/29/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	84.4	%						

* 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.

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Water Analysis Report

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Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-5D
Lab Number: 251010-005
Date Collected: 04/08/2025 12:17 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.085	µg/L	1	0.100	0.008	J1	GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Arsenic	0.72	µg/L	1	0.10	0.03		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Barium	127	µg/L	1	0.20	0.05		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Beryllium	0.047	µg/L	1	0.050	0.007	J1	GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Boron	0.425	mg/L	1	0.050	0.007		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Cadmium	0.033	µg/L	1	0.020	0.004		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Calcium	117	mg/L	1	0.05	0.02		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Chromium	0.67	µg/L	1	0.30	0.07		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Cobalt	0.280	µg/L	1	0.020	0.005		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Lead	0.49	µg/L	1	0.20	0.05		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Lithium	0.0104	mg/L	1	0.00030	0.00006		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Magnesium	37.6	mg/L	1	0.100	0.009		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	1.4	µg/L	1	0.5	0.1		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Potassium	0.96	mg/L	1	0.10	0.01		GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Selenium	0.18	µg/L	1	0.50	0.04	J1	GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4
Sodium	33.6	mg/L	1	0.20	0.02		GES	04/22/2025 19:02	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/16/2025 17:44	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.67	pCi/L	0.26	0.31	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	107	%						
Radium-228	1.12	pCi/L	0.14	0.44		TTP	04/29/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	96.8	%						

* 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.

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Water Analysis Report

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Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-6D
Lab Number: 251010-006
Date Collected: 04/08/2025 10:38 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.104	µg/L	1	0.100	0.008		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Arsenic	1.65	µg/L	1	0.10	0.03		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Barium	62.8	µg/L	1	0.20	0.05		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Beryllium	0.084	µg/L	1	0.050	0.007		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Boron	2.76	mg/L	1	0.050	0.007		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Cadmium	0.144	µg/L	1	0.020	0.004		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Calcium	178	mg/L	1	0.05	0.02		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Chromium	1.97	µg/L	1	0.30	0.07		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Cobalt	0.932	µg/L	1	0.020	0.005		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Lead	2.17	µg/L	1	0.20	0.05		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Lithium	0.0165	mg/L	1	0.00030	0.00006		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Magnesium	33.2	mg/L	1	0.100	0.009		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	76.1	µg/L	1	0.5	0.1		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Potassium	2.79	mg/L	1	0.10	0.01		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Selenium	0.60	µg/L	1	0.50	0.04		GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4
Sodium	126	mg/L	5	1.0	0.1		GES	04/17/2025 18:24	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	04/16/2025 17:49	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.95	pCi/L	0.21	0.39	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	108	%						
Radium-228	0.96	pCi/L	0.17	0.54		TTP	04/29/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	76.6	%						

* 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.

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Water Analysis Report

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Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-9D
Lab Number: 251010-007
Date Collected: 04/08/2025 11:41 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.31	µg/L	5	0.50	0.04	J1	GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Arsenic	3.1	µg/L	5	0.5	0.2		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Barium	162	µg/L	5	1.0	0.3		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Beryllium	0.34	µg/L	5	0.25	0.04		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Boron	6.14	mg/L	5	0.25	0.04		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Cadmium	0.52	µg/L	5	0.10	0.02		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Calcium	257	mg/L	5	0.3	0.1		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Chromium	7.0	µg/L	5	1.5	0.4		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Cobalt	5.79	µg/L	5	0.10	0.03		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Lead	12.2	µg/L	5	1.0	0.3		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Lithium	0.0163	mg/L	5	0.0015	0.0003		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Magnesium	78.3	mg/L	5	0.50	0.05		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	104	µg/L	5	2.5	0.5		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Potassium	4.45	mg/L	5	0.50	0.05		GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Selenium	2.4	µg/L	5	2.5	0.2	J1	GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4
Sodium	127	mg/L	10	2.0	0.2		GES	04/17/2025 18:30	EPA 200.8-1994, Rev. 5.4
Thallium	0.1	µg/L	5	1.0	0.1	J1	GES	04/16/2025 17:55	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.08	pCi/L	0.20	0.25	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	123	%						
Radium-228	0.57	pCi/L	0.16	0.52		TTP	04/29/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	87.9	%						

* 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.

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Water Analysis Report

Reissued

Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-10D
Lab Number: 251010-008
Date Collected: 04/08/2025 14:08 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.6	µg/L	20	2.0	0.2	J1	GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Arsenic	3.6	µg/L	20	2.0	0.6		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Barium	91	µg/L	20	4	1		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Beryllium	0.117	µg/L	1	0.050	0.007		GES	04/16/2025 18:00	EPA 200.8-1994, Rev. 5.4
Boron	1.4	mg/L	20	1.0	0.1		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Cadmium	0.09	µg/L	20	0.40	0.08	J1	GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Calcium	131	mg/L	20	1.0	0.4		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Chromium	5	µg/L	20	6	1	J1	GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Cobalt	0.6	µg/L	20	0.4	0.1		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Lead	<1	µg/L	20	4	1	U1	GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Lithium	0.306	mg/L	1	0.00030	0.00006		GES	04/16/2025 18:00	EPA 200.8-1994, Rev. 5.4
Magnesium	62.0	mg/L	20	2.0	0.2		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	17	µg/L	20	10	2		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Potassium	7.7	mg/L	20	2.0	0.2		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Selenium	19.0	µg/L	20	10.0	0.8		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Sodium	2150	mg/L	20	4.0	0.4		GES	04/17/2025 18:35	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	8	1.6	0.2	U1	ELH	06/09/2025 11:21	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-12D
Lab Number: 251010-009
Date Collected: 04/08/2025 15:08 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.07	µg/L	2	0.20	0.02	J1	GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Arsenic	1.63	µg/L	2	0.20	0.06		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Barium	36.8	µg/L	2	0.4	0.1		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Beryllium	0.05	µg/L	2	0.10	0.01	J1	GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Boron	6.09	mg/L	2	0.10	0.01		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Cadmium	0.080	µg/L	2	0.040	0.008		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Calcium	58.4	mg/L	2	0.10	0.04		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Chromium	0.9	µg/L	2	0.6	0.1		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Cobalt	0.46	µg/L	2	0.04	0.01		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Lead	1.7	µg/L	2	0.4	0.1		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Lithium	0.0041	mg/L	2	0.0006	0.0001		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Magnesium	5.55	mg/L	2	0.20	0.02		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	447	µg/L	2	1.0	0.2		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Potassium	1.48	mg/L	2	0.20	0.02		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Selenium	1.14	µg/L	2	1.00	0.08		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Sodium	201	mg/L	2	0.40	0.04		GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	2	0.40	0.04	J1	GES	04/17/2025 11:18	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.52	pCi/L	0.14	0.26	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	125	%						
Radium-228	0.90	pCi/L	0.17	0.57		TTP	04/29/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	93.4	%						

* 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.

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Audinet: 210-4221

Water Analysis Report

Reissued

Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-13D
Lab Number: 251010-010
Date Collected: 04/08/2025 14:50 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.318	µg/L	1	0.100	0.008		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Arsenic	0.59	µg/L	1	0.10	0.03		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Barium	36.3	µg/L	1	0.20	0.05		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Beryllium	0.044	µg/L	1	0.050	0.007	J1	GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Boron	0.602	mg/L	1	0.050	0.007		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Cadmium	0.109	µg/L	1	0.020	0.004		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Calcium	146	mg/L	1	0.05	0.02		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Chromium	0.63	µg/L	1	0.30	0.07		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Cobalt	0.390	µg/L	1	0.020	0.005		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Lead	0.69	µg/L	1	0.20	0.05		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Lithium	0.0309	mg/L	1	0.00030	0.00006		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Magnesium	61.6	mg/L	1	0.100	0.009		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	7.1	µg/L	1	0.5	0.1		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Potassium	1.56	mg/L	1	0.10	0.01		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Selenium	7.80	µg/L	1	0.50	0.04		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Sodium	79.9	mg/L	1	0.20	0.02		GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	04/17/2025 11:24	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.54	pCi/L	0.28	0.43	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	91.9	%						
Radium-228	2.53	pCi/L	0.19	0.57		TTP	04/29/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	85.2	%						

* 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.

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Water Analysis Report

Reissued

Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-14
Lab Number: 251010-011
Date Collected: 04/08/2025 12:54 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.2	µg/L	20	2.0	0.2	U1	GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Arsenic	3.4	µg/L	20	2.0	0.6		GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Barium	352	µg/L	20	4	1		GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.1	µg/L	20	1.0	0.1	U1	GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Boron	1.0	mg/L	20	1.0	0.1		GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.08	µg/L	20	0.40	0.08	U1	GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Calcium	83.0	mg/L	20	1.0	0.4		GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Chromium	3	µg/L	20	6	1	J1	GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Cobalt	2.8	µg/L	20	0.4	0.1		GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Lead	<1	µg/L	20	4	1	U1	GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Lithium	0.229	mg/L	20	0.006	0.001		GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Magnesium	25.5	mg/L	20	2.0	0.2		GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	8	µg/L	20	10	2	J1	GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Potassium	5.6	mg/L	20	2.0	0.2		GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Selenium	<0.8	µg/L	20	10.0	0.8	U1	GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Sodium	1210	mg/L	20	4.0	0.4		GES	04/17/2025 11:29	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	8	1.6	0.2	U1	ELH	06/09/2025 11:27	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.28	pCi/L	0.22	0.25	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	118	%						
Radium-228	0.31	pCi/L	0.12	0.39		TTP	04/29/2025 17:06	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	92.2	%						

* 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.

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Water Analysis Report

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Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-15
Lab Number: 251010-012
Date Collected: 04/08/2025 17:46 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.069	µg/L	1	0.100	0.008	J1	GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Arsenic	2.02	µg/L	1	0.10	0.03		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Barium	57.8	µg/L	1	0.20	0.05		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Beryllium	0.017	µg/L	1	0.050	0.007	J1	GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Boron	7.54	mg/L	1	0.050	0.007		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Cadmium	0.033	µg/L	1	0.020	0.004		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Calcium	93.0	mg/L	1	0.05	0.02		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Chromium	0.68	µg/L	1	0.30	0.07		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Cobalt	0.194	µg/L	1	0.020	0.005		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Lead	0.42	µg/L	1	0.20	0.05		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Lithium	0.00691	mg/L	1	0.00030	0.00006		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Magnesium	27.3	mg/L	1	0.100	0.009		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Mercury	2	ng/L	1	5	2	J1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	434	µg/L	1	0.5	0.1		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Potassium	1.62	mg/L	1	0.10	0.01		GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Selenium	0.46	µg/L	1	0.50	0.04	J1	GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4
Sodium	185	mg/L	2	0.40	0.04		GES	04/17/2025 13:19	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/17/2025 11:35	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.54	pCi/L	0.16	0.31	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.8	%						
Radium-228	0.62	pCi/L	0.15	0.48	O2	TTP	04/28/2025 16:53	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	80.8	%						

* 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.

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Water Analysis Report

Reissued

Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-17
Lab Number: 251010-013
Date Collected: 04/08/2025 10:03 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.4	µg/L	20	2.0	0.2	J1	GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Arsenic	2.0	µg/L	20	2.0	0.6		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Barium	111	µg/L	20	4	1		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Beryllium	0.3	µg/L	20	1.0	0.1	J1	GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Boron	1.0	mg/L	20	1.0	0.1		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Cadmium	0.98	µg/L	20	0.40	0.08		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Calcium	241	mg/L	20	1.0	0.4		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Chromium	8	µg/L	20	6	1		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Cobalt	7.0	µg/L	20	0.4	0.1		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Lead	7	µg/L	20	4	1		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Lithium	0.020	mg/L	20	0.006	0.001		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Magnesium	98.4	mg/L	20	2.0	0.2		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	14	µg/L	20	10	2		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Potassium	2.5	mg/L	20	2.0	0.2		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Selenium	13.9	µg/L	20	10.0	0.8		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Sodium	43.7	mg/L	20	4.0	0.4		GES	04/17/2025 11:40	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	8	1.6	0.2	U1	ELH	06/09/2025 11:32	EPA 200.8-1994, Rev. 5.4

AMERICAN ELECTRIC POWER

Dolan Chemical Laboratory
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Water Analysis Report

Reissued

Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-18
Lab Number: 251010-014
Date Collected: 04/08/2025 15:51 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 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	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Arsenic	24	µg/L	50	5	2		GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Barium	240	µg/L	50	10	3		GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Boron	1.7	mg/L	50	2.5	0.4	J1	GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Calcium	649	mg/L	50	3	1		GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Chromium	<4	µg/L	50	15	4	U1	GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Cobalt	6.8	µg/L	50	1.0	0.3		GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Lithium	1.42	mg/L	50	0.015	0.003		GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Magnesium	237	mg/L	50	5.0	0.5		GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<5	µg/L	50	25	5	U1	GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Potassium	28.6	mg/L	50	5.0	0.5		GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Selenium	<2	µg/L	50	25	2	U1	GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Sodium	6600	mg/L	50	10	1		GES	04/17/2025 11:46	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	8	1.6	0.2	U1	ELH	06/09/2025 11:38	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	3.03	pCi/L	0.33	0.24	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	123	%						
Radium-228	2.01	pCi/L	0.14	0.39	O2	TTP	04/28/2025 16:53	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	106	%						

* 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.

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Water Analysis Report

Reissued

Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: MW-19
Lab Number: 251010-015
Date Collected: 04/08/2025 13:27 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 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	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Arsenic	<2	µg/L	50	5	2	U1	GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Barium	80400	µg/L	50	10	3		GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Boron	1.5	mg/L	50	2.5	0.4	J1	GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Calcium	867	mg/L	50	3	1		GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Chromium	<4	µg/L	50	15	4	U1	GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Cobalt	0.4	µg/L	50	1.0	0.3	J1	GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Lithium	1.63	mg/L	50	0.015	0.003		GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Magnesium	403	mg/L	50	5.0	0.5		GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<5	µg/L	50	25	5	U1	GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Potassium	24.3	mg/L	50	5.0	0.5		GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Selenium	<2	µg/L	50	25	2	U1	GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Sodium	7670	mg/L	50	10	1		GES	04/17/2025 11:51	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	8	1.6	0.2	U1	ELH	06/09/2025 11:49	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	20.70	pCi/L	0.98	0.28	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	150	%						
Radium-228	7.91	pCi/L	0.15	0.24	O2, R2	TTP	04/28/2025 16:53	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	145	%						

* 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.

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: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: Landfill Duplicate
Lab Number: 251010-016
Date Collected: 04/07/2025 15:03 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 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	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Arsenic	2	µg/L	50	5	2	J1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Barium	148	µg/L	50	10	3		GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.4	µg/L	50	2.5	0.4	U1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Boron	1.1	mg/L	50	2.5	0.4	J1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Cadmium	0.4	µg/L	50	1.0	0.2	J1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Calcium	213	mg/L	50	3	1		GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Chromium	<4	µg/L	50	15	4	U1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Cobalt	3.3	µg/L	50	1.0	0.3		GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Lithium	0.008	mg/L	50	0.015	0.003	J1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Magnesium	27.8	mg/L	50	5.0	0.5		GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<5	µg/L	50	25	5	U1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Potassium	1.8	mg/L	50	5.0	0.5	J1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Selenium	<2	µg/L	50	25	2	U1	GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Sodium	91	mg/L	50	10	1		GES	04/17/2025 11:56	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	8	1.6	0.2	U1	ELH	06/09/2025 11:59	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: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: Ladfill Equipment Blank
Customer Description:
Lab Number: 251010-017
Preparation:
Date Collected: 04/07/2025 16:42 EDT
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.060	µg/L	1	0.100	0.008	J1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Barium	0.06	µg/L	1	0.20	0.05	J1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Boron	0.018	mg/L	1	0.050	0.007	J1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Calcium	0.06	mg/L	1	0.05	0.02		GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Chromium	0.19	µg/L	1	0.30	0.07	J1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Cobalt	<0.005	µg/L	1	0.020	0.005	U1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00006	mg/L	1	0.00030	0.00006	U1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Magnesium	0.013	mg/L	1	0.100	0.009	J1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.4	µg/L	1	0.5	0.1	J1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Potassium	<0.01	mg/L	1	0.10	0.01	U1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Sodium	0.11	mg/L	1	0.20	0.02	J1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/17/2025 13:24	EPA 200.8-1994, Rev. 5.4

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

Water Analysis Report

Reissued

Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

Customer Sample ID: Field Blank
Lab Number: 251010-018
Date Collected: 04/08/2025 11:00 EDT

Customer Description:
Preparation:
Date Received: 04/14/2025 10:25 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.063	µg/L	1	0.100	0.008	J1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Barium	<0.05	µg/L	1	0.20	0.05	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Boron	0.008	mg/L	1	0.050	0.007	J1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Calcium	0.02	mg/L	1	0.05	0.02	J1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Chromium	0.25	µg/L	1	0.30	0.07	J1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Cobalt	0.005	µg/L	1	0.020	0.005	J1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00006	mg/L	1	0.00030	0.00006	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.009	mg/L	1	0.100	0.009	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	RLP	04/15/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1	µg/L	1	0.5	0.1	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Potassium	<0.01	mg/L	1	0.10	0.01	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Sodium	0.03	mg/L	1	0.20	0.02	J1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	04/17/2025 13:29	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.57	pCi/L	0.16	0.25	O3	ST	05/01/2025 14:38	SW-846 9315-1986, Rev. 0
Carrier Recovery	94.1	%						
Radium-228	0.08	pCi/L	0.11	0.37	O2	TTP	04/28/2025 16:53	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	101	%						

* 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.

251010
Job Comments:

Original report issued 5/8/25. Report reissued 6/11/25 with reanalysis of Tl at lower dilutions for several samples.

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

Water Analysis Report

Reissued

Job ID: 251010 **Customer: Northeastern 3&4 Power Station** **Date Reported: 06/11/2025**

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

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED. ALL TIMES LISTED ARE IN THE EASTERN TIME ZONE.

Data Qualifer Legend

U1 - Not detected at or below method detection limit (MDL).
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
R2 - Carrier recovery was outside acceptance limits.
O3 - Insufficient sample was received to perform the duplicate analysis with this sample batch.
O2 - Insufficient sample was received to perform the MS and duplicate analyses with this sample batch.

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: Pryce Warren
Contact Phone: 325-310-6668
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 #: 751010

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	17 250 mL bottle, pH<2, HNO_3 As, B, Ba, Be, Ca, Cd, Cr, Co, K, Li, Na, Pb, Mg, Mo, Sb, Se, TL	1 L bottle, Cool, 0-6°C TDS, F, Cl, SO_4, Br, Alkalinity	2 Three (six every 10th*) 1 L bottles, pH<2, HNO_3 Ra-226, Ra-228	1 250 mL Glass bottle, HCL**, pH<2 TOTAL HG	Field-filter 500 mL bottle, then pH<2, HNO_3 dissolved Fe and Mn	Sample Specific Notes:
MW-1D	4/8/2025	1517	G	GW	2			X			X		
MW-2D	4/7/2025	1602	G	GW	5			X		X	X		
MW-3D	4/8/2025	805	G	GW	5			X		X	X		
MW-4D	4/7/2025	1403	G	GW	8			X		X	X		
MW-5D	4/8/2025	1117	G	GW	5			X		X	X		
MW-6D	4/8/2025	938	G	GW	5			X		X	X		
MW-9D	4/8/2025	1041	G	GW	5			X		X	X		
MW-10D	4/8/2025	1308	G	GW	2			X			X		
MW-12D	4/8/2025	1408	G	GW	5			X		X	X		
MW-13D	4/8/2025	1350	G	GW	5			X		X	X		
MW-14	4/8/2025	1154	G	GW	5			X		X	X		
MW-15	4/8/2025	1646	G	GW	5			X		X	X		
MW-17	4/8/2025	903	G	GW	2			X			X		
MW-18	4/8/2025	1451	G	GW	5			X		X	X		
MW-19	4/8/2025	1227	G	GW	5			X		X	X		
LANDFILL DUPLICATE	4/7/2025	1403	G	GW	2			X			X		
LANDFILL EQUIPMENT BLANK	4/7/2025	1542	G	W	2			X			X		
FIELD BLANK	4/8/2025	1000	G	W	5			X		X	X		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____; F= filter in field							4	4	1	4	2		

** 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	04/10/25 1100		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			[signature]	04/14/25 1025

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

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

Plant/Customer Northeastern **Total # of Containers RECEIVED in Job:** 78

Opened By MBH/EHB/MBH

Date/Time 04/14/25 1075

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? Y / N or (N/A)

Initial/Date: MBH 04/14/25 on ice / (no ice)

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 05/20/2025

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)

Were pH requirements met for required samples, per BN-water-900? (Y) / N or N/A

Initial/Date: MBH 04/14/25

pH paper: mfr Lab Rat Supplies, PN RS-4801, LOT# X000RWDG21 EXPIR DATE 05/31/2026

***** Note changes to pH paper in comments below***

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

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

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

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

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

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

Lab ID# 75010 Initial & Date & Time : _____

Logged by MBH Comments: _____

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 78

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 751010 **Initial/ Date:** [illegible] **Peer Review Initial/ Date:** MSO 4/14/25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
18	751010 -001		18
20	-002		20
↓	-003		20
	-004		20
	-005		20
	-006		20
	-007		20
18	-008		18
20	-009		20
↓	-010		20
	-011		20
	-012		20
18	-013		18
20	-014		20
20	-015		20
18	-016		18
18	-017		18
20	-018		20

Water Analysis Report

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

Job ID: 250981 **Customer: Northeastern 3&4 Power Station** **Date Reported: 04/24/2025**

Customer Sample ID: MW-2D
Customer Description:
Lab Number: 250981-001
Preparation:
Date Collected: 04/07/2025 17:02 EDT
Date Received: 04/10/2025 10:15 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.53	mg/L	2	0.10	0.02		CRJ	04/16/2025 13:46	EPA 300.1 -1997, Rev. 1.0
Chloride	13.9	mg/L	2	0.06	0.02		CRJ	04/16/2025 13:46	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.34	mg/L	2	0.06	0.02		CRJ	04/16/2025 13:46	EPA 300.1 -1997, Rev. 1.0
Sulfate	658	mg/L	25	8	2		CRJ	04/15/2025 20:35	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	172	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	1230	mg/L	2	100	40		BLB	04/10/2025 12:43	SM 2540C-2015

Customer Sample ID: MW-3D
Customer Description:
Lab Number: 250981-002
Preparation:
Date Collected: 04/08/2025 09:05 EDT
Date Received: 04/10/2025 10:15 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	04/16/2025 05:55	EPA 300.1 -1997, Rev. 1.0
Chloride	12.9	mg/L	2	0.06	0.02		CRJ	04/16/2025 05:55	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.94	mg/L	2	0.06	0.02		CRJ	04/16/2025 05:55	EPA 300.1 -1997, Rev. 1.0
Sulfate	163	mg/L	10	3.0	0.6		CRJ	04/15/2025 20:56	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	411	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	620	mg/L	1	50	20		BLB	04/10/2025 12:43	SM 2540C-2015

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

Job ID: 250981 **Customer: Northeastern 3&4 Power Station** **Date Reported: 04/24/2025**

Customer Sample ID: MW-4D **Customer Description:**
Lab Number: 250981-003 **Preparation:**
Date Collected: 04/07/2025 15:03 EDT **Date Received: 04/10/2025 10:15 EDT**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.95	mg/L	2	0.10	0.02		CRJ	04/16/2025 14:06	EPA 300.1 -1997, Rev. 1.0
Chloride	36.7	mg/L	2	0.06	0.02		CRJ	04/16/2025 14:06	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.28	mg/L	2	0.06	0.02		CRJ	04/16/2025 14:06	EPA 300.1 -1997, Rev. 1.0
Sulfate	429	mg/L	25	8	2		CRJ	04/15/2025 21:16	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	432	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	1110	mg/L	1	50	20		BLB	04/10/2025 12:49	SM 2540C-2015

Customer Sample ID: MW-5D **Customer Description:**
Lab Number: 250981-004 **Preparation:**
Date Collected: 04/08/2025 12:17 EDT **Date Received: 04/10/2025 10:15 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	04/16/2025 06:16	EPA 300.1 -1997, Rev. 1.0
Chloride	24.8	mg/L	2	0.06	0.02		CRJ	04/16/2025 06:16	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.67	mg/L	2	0.06	0.02		CRJ	04/16/2025 06:16	EPA 300.1 -1997, Rev. 1.0
Sulfate	119	mg/L	10	3.0	0.6		CRJ	04/15/2025 21:37	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	367	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	570	mg/L	1	50	20		BLB	04/10/2025 12:49	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: 250981 **Customer: Northeastern 3&4 Power Station** **Date Reported: 04/24/2025**

Customer Sample ID: MW-6D **Customer Description:**
Lab Number: 250981-005 **Preparation:**
Date Collected: 04/08/2025 10:38 EDT **Date Received: 04/10/2025 10:15 EDT**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.46	mg/L	2	0.10	0.02		CRJ	04/16/2025 14:48	EPA 300.1 -1997, Rev. 1.0
Chloride	27.0	mg/L	2	0.06	0.02		CRJ	04/16/2025 14:48	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.92	mg/L	2	0.06	0.02		CRJ	04/16/2025 14:48	EPA 300.1 -1997, Rev. 1.0
Sulfate	448	mg/L	25	8	2		CRJ	04/15/2025 22:19	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	380	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	1080	mg/L	2	100	40		BLB	04/10/2025 12:55	SM 2540C-2015

Customer Sample ID: MW-9D **Customer Description:**
Lab Number: 250981-006 **Preparation:**
Date Collected: 04/08/2025 11:41 EDT **Date Received: 04/10/2025 10:15 EDT**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.35	mg/L	2	0.10	0.02		CRJ	04/16/2025 15:09	EPA 300.1 -1997, Rev. 1.0
Chloride	23.0	mg/L	2	0.06	0.02		CRJ	04/16/2025 15:09	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.86	mg/L	2	0.06	0.02		CRJ	04/16/2025 15:09	EPA 300.1 -1997, Rev. 1.0
Sulfate	508	mg/L	25	8	2		CRJ	04/15/2025 22:39	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	357	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	1140	mg/L	2	100	40		BLB	04/10/2025 12:55	SM 2540C-2015

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

Job ID: 250981 **Customer: Northeastern 3&4 Power Station** **Date Reported: 04/24/2025**

Customer Sample ID: MW-12D
Lab Number: 250981-007
Date Collected: 04/08/2025 15:08 EDT

Customer Description:
Preparation:
Date Received: 04/10/2025 10:15 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.43	mg/L	2	0.10	0.02		CRJ	04/16/2025 15:50	EPA 300.1 -1997, Rev. 1.0
Chloride	12.2	mg/L	2	0.06	0.02		CRJ	04/16/2025 15:50	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.79	mg/L	2	0.06	0.02		CRJ	04/16/2025 15:50	EPA 300.1 -1997, Rev. 1.0
Sulfate	478	mg/L	25	8	2		CRJ	04/15/2025 23:00	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	144	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	910	mg/L	1	50	20		BLB	04/10/2025 13:01	SM 2540C-2015

Customer Sample ID: MW-13D
Lab Number: 250981-008
Date Collected: 04/08/2025 14:50 EDT

Customer Description:
Preparation:
Date Received: 04/10/2025 10:15 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.07	mg/L	2	0.10	0.02	J1	CRJ	04/16/2025 16:11	EPA 300.1 -1997, Rev. 1.0
Chloride	4.28	mg/L	2	0.06	0.02		CRJ	04/16/2025 16:11	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.38	mg/L	2	0.06	0.02		CRJ	04/16/2025 16:11	EPA 300.1 -1997, Rev. 1.0
Sulfate	348	mg/L	25	8	2		CRJ	04/15/2025 23:21	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	562	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	1010	mg/L	2	100	40		BLB	04/10/2025 13:01	SM 2540C-2015

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

Job ID: 250981 **Customer: Northeastern 3&4 Power Station** **Date Reported: 04/24/2025**

Customer Sample ID: MW-14
Lab Number: 250981-009
Date Collected: 04/08/2025 12:54 EDT
Customer Description:
Preparation:
Date Received: 04/10/2025 10:15 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	6.8	mg/L	25	1.3	0.3		CRJ	04/16/2025 16:52	EPA 300.1 -1997, Rev. 1.0
Chloride	1820	mg/L	250	8	3		CRJ	04/16/2025 00:02	EPA 300.1 -1997, Rev. 1.0
Fluoride	4.4	mg/L	25	0.8	0.3		CRJ	04/16/2025 16:52	EPA 300.1 -1997, Rev. 1.0
Sulfate	68	mg/L	25	8	2		CRJ	04/16/2025 16:52	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	745	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	3890	mg/L	4	200	80		BLB	04/10/2025 13:07	SM 2540C-2015

Customer Sample ID: MW-15
Lab Number: 250981-010
Date Collected: 04/08/2025 17:46 EDT
Customer Description:
Preparation:
Date Received: 04/10/2025 10:15 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	04/16/2025 17:13	EPA 300.1 -1997, Rev. 1.0
Chloride	14.1	mg/L	2	0.06	0.02		CRJ	04/16/2025 17:13	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.55	mg/L	2	0.06	0.02		CRJ	04/16/2025 17:13	EPA 300.1 -1997, Rev. 1.0
Sulfate	644	mg/L	25	8	2		CRJ	04/16/2025 00:23	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	118	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	1090	mg/L	2	100	40		BLB	04/10/2025 13:07	SM 2540C-2015

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

Job ID: 250981 **Customer: Northeastern 3&4 Power Station** **Date Reported: 04/24/2025**

Customer Sample ID: MW-18 **Customer Description:**
Lab Number: 250981-011 **Preparation:**
Date Collected: 04/08/2025 15:51 EDT **Date Received: 04/10/2025 10:15 EDT**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	42.8	mg/L	50	2.5	0.5		CRJ	04/16/2025 04:53	EPA 300.1 -1997, Rev. 1.0
Chloride	11400	mg/L	2500	80	30		CRJ	04/16/2025 03:51	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.9	mg/L	50	1.5	0.5	J1	CRJ	04/16/2025 04:53	EPA 300.1 -1997, Rev. 1.0
Sulfate	1010	mg/L	50	15	3		CRJ	04/16/2025 04:53	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	876	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	20600	mg/L	20	1000	400		BLB	04/10/2025 13:14	SM 2540C-2015

Customer Sample ID: MW-19 **Customer Description:**
Lab Number: 250981-012 **Preparation:**
Date Collected: 04/08/2025 13:27 EDT **Date Received: 04/10/2025 10:15 EDT**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	58.4	mg/L	50	2.5	0.5		CRJ	04/16/2025 05:14	EPA 300.1 -1997, Rev. 1.0
Chloride	14800	mg/L	2500	80	30		CRJ	04/16/2025 04:12	EPA 300.1 -1997, Rev. 1.0
Fluoride	3.9	mg/L	50	1.5	0.5		CRJ	04/16/2025 05:14	EPA 300.1 -1997, Rev. 1.0
Sulfate	4	mg/L	50	15	3	J1	CRJ	04/16/2025 05:14	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	520	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	23400	mg/L	20	1000	400	S7	BLB	04/10/2025 13:14	SM 2540C-2015

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

Job ID: 250981 **Customer: Northeastern 3&4 Power Station** **Date Reported: 04/24/2025**

Customer Sample ID: Landfill Duplicate **Customer Description:**
Lab Number: 250981-013 **Preparation:**
Date Collected: 04/07/2025 15:03 EDT **Date Received: 04/10/2025 10:15 EDT**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.94	mg/L	2	0.10	0.02		CRJ	04/16/2025 06:37	EPA 300.1 -1997, Rev. 1.0
Chloride	36.4	mg/L	2	0.06	0.02		CRJ	04/16/2025 06:37	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.28	mg/L	2	0.06	0.02		CRJ	04/16/2025 06:37	EPA 300.1 -1997, Rev. 1.0
Sulfate	431	mg/L	25	8	2		CRJ	04/16/2025 11:20	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	399	mg/L	1	20	5		MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	1120	mg/L	2	100	40		BLB	04/10/2025 13:19	SM 2540C-2015

Customer Sample ID: Landfill Equipment Blank **Customer Description:**
Lab Number: 250981-014 **Preparation:**
Date Collected: 04/07/2025 16:42 EDT **Date Received: 04/10/2025 10:15 EDT**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	<0.02	mg/L	2	0.10	0.02	U1	CRJ	04/16/2025 11:00	EPA 300.1 -1997, Rev. 1.0
Chloride	0.03	mg/L	2	0.06	0.02	J1	CRJ	04/16/2025 11:00	EPA 300.1 -1997, Rev. 1.0
Fluoride	<0.02	mg/L	2	0.06	0.02	U1	CRJ	04/16/2025 11:00	EPA 300.1 -1997, Rev. 1.0
Sulfate	<0.1	mg/L	2	0.6	0.1	U1	CRJ	04/16/2025 11:00	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	<5	mg/L	1	20	5	J8, U1	MGK	04/10/2025 17:34	SM 2320B-2011
TDS, Filterable Residue	<20	mg/L	1	50	20	U1	BLB	04/10/2025 13:19	SM 2540C-2015

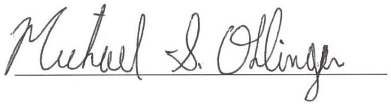
Water Analysis Report

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

Job ID: 250981 **Customer: Northeastern 3&4 Power Station** **Date Reported: 04/24/2025**

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

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED. ALL TIMES LISTED ARE IN THE EASTERN TIME ZONE.

Data Qualifer Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
S7 - Sample did not achieve constant weight.
U1 - Not detected at or below method detection limit (MDL).
J8 - Concentration estimated. Per the method, this Low Alkalinity sample (< 20 mg/L) was titrated to a fixed pH 4.4.

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: Pryce Warren
Contact Phone: 325-310-6668
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 #: 250981

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	250 mL bottle, pH<2, HNO_3 As, B, Ba, Be, Ca,Cd, Cr, Co, K, Li, Na, Pb, Mg, Mo, Sb, Se, Tl	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	4/7/2025	1602	G	GW	1				X				
MW-3D	4/8/2025	805	G	GW	1				X				
MW-4D	4/7/2025	1403	G	GW	1				X				
MW-5D	4/8/2025	1117	G	GW	1				X				
MW-6D	4/8/2025	938	G	GW	1				X				
MW-9D	4/8/2025	1041	G	GW	1				X				
MW-12D	4/8/2025	1408	G	GW	1				X				
MW-13D	4/8/2025	1350	G	GW	1				X				
MW-14	4/8/2025	1154	G	GW	1				X				
MW-15	4/8/2025	1646	G	GW	1				X				
MW-18	4/8/2025	1451	G	GW	1				X				
MW-19	4/8/2025	1227	G	GW	1				X				
LANDFILL DUPLICATE	4/7/2025	1403	G	GW	1				X				
LANDFILL EQUIPMENT BLANK	4/7/2025	1542	G	W	1				X				
~~FIELD BLANK~~ 1000 04/10/25	4/8/2025	1000	G	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]	CHGLF	04/09/25 1400		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Date/Time: 04/10/25 1015

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

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

Plant/Customer Northeastern **Total # of Containers RECEIVED in Job:** 14

Opened By ELH/WCG/KJH/MGK

Date/Time 4.10.25 10:15AM

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? (Y) / N or N/A

Initial/Date: ELH 4.10.25 (on ice) / no ice

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093386, *Expir.* 05/20/2025

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)

Were pH requirements met for required samples, per BN-water-900? (Y) N or N/A

Initial/Date: WCG 4/10/25

***pH paper*:** mfr Lab Rat Supplies, PN RS-4801 LOT# X000RWDG21 EXPIR DATE 05/31/2026

***** Note changes to pH paper in comments below***

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

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

Was COC filled out properly? Y / (N) Comments No field blank sent

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

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

Was the customer contacted? If Yes: Person Contacted: Bryce Warren

Lab ID# 250981 Initial & Date & Time : WCG 04/10/25 1035

Logged by KJH Comments: Missing COC field blank details email attached 4/11/25 per Bryce Warren

(*Record Test Count on back of form*)

Total # of Containers LISTED on COC: 15

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 250981 **Initial/ Date:** KMH 04/10/25 **Peer Review Initial/ Date:** WLG 4/10/25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
6	250981-001		6
	-002		
	-003		
	-004		
	-005		
	-006		
	-007		
	-008		
	-009		
	-010		
	-011		
	-012		

Water Analysis Report

Reissued

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

Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-2D
Lab Number: 252840-001
Date Collected: 10/28/2025 17:09 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.55	µg/L	1	0.10	0.02		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Arsenic	28.6	µg/L	1	0.10	0.03		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Barium	17.8	µg/L	1	0.20	0.05		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.02	µg/L	1	0.05	0.02	U1	GES	11/14/2025 11:52	EPA 200.8-1994, Rev. 5.4
Boron	9.88	mg/L	1	0.050	0.006		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Cadmium	0.336	µg/L	1	0.020	0.004		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Calcium	13.1	mg/L	1	0.10	0.02		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Chromium	0.93	µg/L	1	0.30	0.07		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Cobalt	0.46	µg/L	1	0.03	0.01		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Lead	2.07	µg/L	1	0.20	0.05		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Lithium	0.00134	mg/L	1	0.00030	0.00007		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Magnesium	0.48	mg/L	1	0.10	0.01		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Mercury	44	ng/L	1	5	2		JLD	11/04/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	537	µg/L	1	0.50	0.05		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Potassium	4.28	mg/L	1	0.10	0.02		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Selenium	57.8	µg/L	1	0.50	0.04		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Sodium	408	mg/L	5	1.0	0.1		GES	11/06/2025 01:47	EPA 200.8-1994, Rev. 5.4
Strontium	0.130	mg/L	1	0.00200	0.00006		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4
Thallium	0.50	µg/L	1	0.20	0.02		GES	11/05/2025 13:48	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.09	pCi/L	0.06	0.17		ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	103	%						
Radium-228	0.28	pCi/L	0.15	0.51		ST	11/20/2025 11:04	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	91.6	%						

* 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.

Dolan Chemical Laboratory
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Audinet: 210-4221

Water Analysis Report

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Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-3D
Lab Number: 252840-002
Date Collected: 10/28/2025 09:57 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.09	µg/L	1	0.10	0.02	J1	GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Arsenic	4.00	µg/L	1	0.10	0.03		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Barium	98.3	µg/L	1	0.20	0.05		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Beryllium	0.03	µg/L	1	0.05	0.02	J1	GES	11/14/2025 11:58	EPA 200.8-1994, Rev. 5.4
Boron	0.856	mg/L	1	0.050	0.006		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Cadmium	0.022	µg/L	1	0.020	0.004		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Calcium	111	mg/L	1	0.10	0.02		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Chromium	0.55	µg/L	1	0.30	0.07		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Cobalt	0.11	µg/L	1	0.03	0.01		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Lead	0.26	µg/L	1	0.20	0.05		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Lithium	0.0136	mg/L	1	0.00030	0.00007		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Magnesium	37.4	mg/L	1	0.10	0.01		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/04/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	4.79	µg/L	1	0.50	0.05		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Potassium	1.59	mg/L	1	0.10	0.02		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Selenium	0.34	µg/L	1	0.50	0.04	J1	GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Sodium	60.1	mg/L	1	0.20	0.02		GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4
Strontium	2.75	mg/L	5	0.0100	0.0003		GES	11/06/2025 01:53	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	11/05/2025 13:54	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.55	pCi/L	0.13	0.23		ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.8	%						
Radium-228	2.90	pCi/L	0.22	0.62		ST	11/20/2025 11:04	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	63.2	%						

* 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.

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Water Analysis Report

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Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-4D
Lab Number: 252840-003
Date Collected: 10/28/2025 09:21 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.08	µg/L	1	0.10	0.02	J1	GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Arsenic	2.17	µg/L	1	0.10	0.03		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Barium	118	µg/L	1	0.20	0.05		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Beryllium	0.07	µg/L	1	0.05	0.02		GES	11/14/2025 12:03	EPA 200.8-1994, Rev. 5.4
Boron	0.662	mg/L	1	0.050	0.006		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Cadmium	0.321	µg/L	1	0.020	0.004		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Calcium	175	mg/L	1	0.10	0.02		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Chromium	1.50	µg/L	1	0.30	0.07		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Cobalt	1.69	µg/L	1	0.03	0.01		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Lead	1.15	µg/L	1	0.20	0.05		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Lithium	0.00367	mg/L	1	0.00030	0.00007		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Magnesium	22.6	mg/L	1	0.10	0.01		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/04/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	3.14	µg/L	1	0.50	0.05		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Potassium	1.62	mg/L	1	0.10	0.02		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Selenium	0.36	µg/L	1	0.50	0.04	J1	GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Sodium	70.4	mg/L	1	0.20	0.02		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Strontium	1.23	mg/L	1	0.00200	0.00006		GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.02	J1	GES	11/05/2025 13:59	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.59	pCi/L	0.13	0.18		ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	92.1	%						
Radium-228	0.94	pCi/L	0.17	0.53		ST	11/20/2025 11:04	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	79.0	%						

* 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.

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Water Analysis Report

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Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-5D
Lab Number: 252840-004
Date Collected: 10/28/2025 17:47 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.07	µg/L	1	0.10	0.02	J1	GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Arsenic	0.63	µg/L	1	0.10	0.03		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Barium	97.4	µg/L	1	0.20	0.05		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Beryllium	0.02	µg/L	1	0.05	0.02	J1	GES	11/14/2025 12:09	EPA 200.8-1994, Rev. 5.4
Boron	0.409	mg/L	1	0.050	0.006		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Cadmium	0.015	µg/L	1	0.020	0.004	J1	GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Calcium	118	mg/L	1	0.10	0.02		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Chromium	0.34	µg/L	1	0.30	0.07		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Cobalt	0.11	µg/L	1	0.03	0.01		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Lead	0.19	µg/L	1	0.20	0.05	J1	GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Lithium	0.00974	mg/L	1	0.00030	0.00007		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Magnesium	39.9	mg/L	1	0.10	0.01		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/04/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	1.21	µg/L	1	0.50	0.05		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Potassium	0.91	mg/L	1	0.10	0.02		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Selenium	0.23	µg/L	1	0.50	0.04	J1	GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Sodium	34.5	mg/L	1	0.20	0.02		GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4
Strontium	2.11	mg/L	5	0.0100	0.0003		GES	11/06/2025 01:58	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	11/05/2025 14:05	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.61	pCi/L	0.14	0.22		ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	79.9	%						
Radium-228	1.70	pCi/L	0.19	0.56		ST	11/20/2025 11:04	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	63.0	%						

* 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.

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Water Analysis Report

Reissued

Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-6D
Lab Number: 252840-005
Date Collected: 10/28/2025 10:49 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.17	µg/L	1	0.10	0.02		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Arsenic	1.92	µg/L	1	0.10	0.03		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Barium	119	µg/L	1	0.20	0.05		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Beryllium	0.7	µg/L	5	0.3	0.1		GES	11/14/2025 12:14	EPA 200.8-1994, Rev. 5.4
Boron	2.50	mg/L	1	0.050	0.006		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Cadmium	0.216	µg/L	1	0.020	0.004		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Calcium	200	mg/L	5	0.5	0.1		GES	11/06/2025 02:04	EPA 200.8-1994, Rev. 5.4
Chromium	3.54	µg/L	1	0.30	0.07		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Cobalt	1.66	µg/L	1	0.03	0.01		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Lead	3.50	µg/L	1	0.20	0.05		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Lithium	0.0159	mg/L	1	0.00030	0.00007		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Magnesium	32.9	mg/L	1	0.10	0.01		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/04/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	70.1	µg/L	1	0.50	0.05		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Potassium	3.00	mg/L	1	0.10	0.02		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Selenium	1.27	µg/L	1	0.50	0.04		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Sodium	120	mg/L	1	0.20	0.02		GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4
Strontium	2.32	mg/L	5	0.0100	0.0003		GES	11/06/2025 02:04	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.02	J1	GES	11/05/2025 14:10	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.49	pCi/L	0.11	0.21		ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	103	%						
Radium-228	1.40	pCi/L	0.16	0.46		ST	11/20/2025 11:04	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	83.6	%						

* 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.

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Water Analysis Report

Reissued

Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-9D
Lab Number: 252840-006
Date Collected: 10/28/2025 13:06 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.1	µg/L	5	0.5	0.1	J1	GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Arsenic	1.1	µg/L	5	0.5	0.2		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Barium	95.1	µg/L	5	1.0	0.3		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Beryllium	0.05	µg/L	2	0.10	0.04	J1	GES	11/14/2025 12:20	EPA 200.8-1994, Rev. 5.4
Boron	5.96	mg/L	5	0.25	0.03		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Cadmium	0.15	µg/L	5	0.10	0.02		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Calcium	171	mg/L	5	0.5	0.1		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Chromium	2.6	µg/L	5	1.5	0.4		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Cobalt	2.40	µg/L	5	0.15	0.05		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Lead	2.9	µg/L	5	1.0	0.3		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Lithium	0.0158	mg/L	5	0.0015	0.0004		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Magnesium	64.8	mg/L	5	0.50	0.05		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/04/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	160	µg/L	5	2.5	0.3		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Potassium	3.7	mg/L	5	0.5	0.1		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Selenium	1.0	µg/L	5	2.5	0.2	J1	GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Sodium	132	mg/L	5	1.0	0.1		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Strontium	3.49	mg/L	5	0.0100	0.0003		GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	11/05/2025 14:15	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-12D
Lab Number: 252840-007
Date Collected: 10/28/2025 16:06 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.14	µg/L	2	0.20	0.04	J1	GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Arsenic	2.24	µg/L	2	0.20	0.06		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Barium	37.0	µg/L	2	0.4	0.1		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.02	µg/L	1	0.05	0.02	U1	GES	11/14/2025 12:25	EPA 200.8-1994, Rev. 5.4
Boron	7.03	mg/L	2	0.10	0.01		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Cadmium	0.067	µg/L	2	0.040	0.008		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Calcium	57.8	mg/L	2	0.20	0.04		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Chromium	1.1	µg/L	2	0.6	0.1		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Cobalt	0.43	µg/L	2	0.06	0.02		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Lead	2.3	µg/L	2	0.4	0.1		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Lithium	0.0033	mg/L	2	0.0006	0.0001		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Magnesium	5.75	mg/L	2	0.20	0.02		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Mercury	5	ng/L	1	5	2		JLD	11/04/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	498	µg/L	2	1.0	0.1		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Potassium	1.72	mg/L	2	0.20	0.04		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Selenium	1.28	µg/L	2	1.00	0.08		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Sodium	222	mg/L	2	0.40	0.04		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Strontium	0.724	mg/L	2	0.0040	0.0001		GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4
Thallium	0.04	µg/L	2	0.40	0.04	J1	GES	11/05/2025 14:21	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.24	pCi/L	0.08	0.16		ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	96.1	%						
Radium-228	1.40	pCi/L	0.32	1.03	R7	ST	11/20/2025 11:04	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	42.7	%						

* 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.

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Water Analysis Report

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Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-13D
Lab Number: 252840-008
Date Collected: 10/28/2025 15:34 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.31	µg/L	1	0.10	0.02		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Arsenic	1.86	µg/L	1	0.10	0.03		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Barium	56.9	µg/L	1	0.20	0.05		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Beryllium	2.5	µg/L	20	1.0	0.4		GES	11/14/2025 12:31	EPA 200.8-1994, Rev. 5.4
Boron	0.649	mg/L	1	0.050	0.006		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Cadmium	0.171	µg/L	1	0.020	0.004		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Calcium	166	mg/L	1	0.10	0.02		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Chromium	1.41	µg/L	1	0.30	0.07		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Cobalt	2.04	µg/L	1	0.03	0.01		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Lead	1.17	µg/L	1	0.20	0.05		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Lithium	0.0257	mg/L	1	0.00030	0.00007		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Magnesium	71.4	mg/L	1	0.10	0.01		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/04/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	6.78	µg/L	1	0.50	0.05		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Potassium	1.78	mg/L	1	0.10	0.02		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Selenium	5.70	µg/L	1	0.50	0.04		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Sodium	76.8	mg/L	1	0.20	0.02		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Strontium	1.73	mg/L	1	0.00200	0.00006		GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4
Thallium	0.06	µg/L	1	0.20	0.02	J1	GES	11/05/2025 14:26	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.85	pCi/L	0.15	0.18		ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	92.6	%						
Radium-228	2.14	pCi/L	0.20	0.61		ST	12/01/2025 13:27	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	76.2	%						

* 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.

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Water Analysis Report

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Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-14
Lab Number: 252840-009
Date Collected: 10/28/2025 08:52 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.6	µg/L	20	2.0	0.4	J1	GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Arsenic	2.2	µg/L	20	2.0	0.6		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Barium	309	µg/L	20	4	1		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.02	µg/L	1	0.05	0.02	U1	GES	11/14/2025 12:36	EPA 200.8-1994, Rev. 5.4
Boron	1.4	mg/L	20	1.0	0.1		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Cadmium	0.19	µg/L	20	0.40	0.08	J1	GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Calcium	100	mg/L	20	2.0	0.4		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Chromium	5	µg/L	20	6	1	J1	GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Cobalt	2.5	µg/L	20	0.6	0.2		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Lead	4	µg/L	20	4	1		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Lithium	0.273	mg/L	20	0.006	0.001		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Magnesium	36.0	mg/L	20	2.0	0.2		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Mercury	6	ng/L	1	5	2		JLD	11/10/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	13	µg/L	20	10	1		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Potassium	6.6	mg/L	20	2.0	0.4		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Selenium	1.4	µg/L	20	10.0	0.8	J1	GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Sodium	1780	mg/L	20	4.0	0.4		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Strontium	7.45	mg/L	20	0.040	0.001		GES	11/05/2025 14:32	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	8	1.6	0.2	U1	GES	01/12/2026 15:21	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

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Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-15
Lab Number: 252840-010
Date Collected: 10/28/2025 12:12 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.16	µg/L	1	0.10	0.02		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Arsenic	3.07	µg/L	1	0.10	0.03		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Barium	110	µg/L	1	0.20	0.05		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Beryllium	0.06	µg/L	1	0.05	0.02		GES	11/14/2025 12:42	EPA 200.8-1994, Rev. 5.4
Boron	7.66	mg/L	1	0.050	0.006		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Cadmium	0.056	µg/L	1	0.020	0.004		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Calcium	102	mg/L	1	0.10	0.02		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Chromium	1.46	µg/L	1	0.30	0.07		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Cobalt	0.51	µg/L	1	0.03	0.01		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Lead	1.56	µg/L	1	0.20	0.05		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Lithium	0.00695	mg/L	1	0.00030	0.00007		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Magnesium	29.0	mg/L	1	0.10	0.01		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/10/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	500	µg/L	1	0.50	0.05		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Potassium	1.89	mg/L	1	0.10	0.02		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Selenium	1.30	µg/L	1	0.50	0.04		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Sodium	204	mg/L	2	0.40	0.04		GES	11/06/2025 02:09	EPA 200.8-1994, Rev. 5.4
Strontium	1.61	mg/L	1	0.00200	0.00006		GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4
Thallium	0.02	µg/L	1	0.20	0.02	J1	GES	11/05/2025 14:37	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.45	pCi/L	0.11	0.16		ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	100	%						
Radium-228	1.42	pCi/L	0.26	0.84		ST	11/20/2025 11:04	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	55.7	%						

* 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.

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Water Analysis Report

Reissued

Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-18
Lab Number: 252840-011
Date Collected: 10/28/2025 08:34 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<1	µg/L	50	5	1	U1	GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Arsenic	25	µg/L	50	5	2		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Barium	125	µg/L	50	10	3		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Beryllium	<1	µg/L	50	3	1	U1	GES	11/14/2025 12:47	EPA 200.8-1994, Rev. 5.4
Boron	2.5	mg/L	50	2.5	0.3		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Calcium	655	mg/L	50	5	1		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Chromium	<4	µg/L	50	15	4	U1	GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Cobalt	3.2	µg/L	50	1.5	0.5		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Lithium	1.24	mg/L	50	0.015	0.004		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Magnesium	262	mg/L	50	5.0	0.5		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/10/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<3	µg/L	50	25	3	U1	GES	12/04/2025 19:35	EPA 200.8-1994, Rev. 5.4
Potassium	27	mg/L	50	5	1		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Selenium	<2	µg/L	50	25	2	U1	GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Sodium	6830	mg/L	50	10	1		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Strontium	47.2	mg/L	50	0.100	0.003		GES	11/05/2025 14:43	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	8	1.6	0.2	U1	GES	01/12/2026 15:27	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.35	pCi/L	0.07	0.12	R2	ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	186	%						
Radium-228	0.61	pCi/L	0.11	0.36	R2	ST	11/20/2025 11:04	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	149	%						

* 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.

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Water Analysis Report

Reissued

Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: MW-19
Lab Number: 252840-012
Date Collected: 10/27/2025 18:53 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<1	µg/L	50	5	1	U1	GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Arsenic	<2	µg/L	50	5	2	U1	GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Barium	87700	µg/L	50	10	3		GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Beryllium	<1	µg/L	50	3	1	U1	GES	11/14/2025 12:53	EPA 200.8-1994, Rev. 5.4
Boron	2.0	mg/L	50	2.5	0.3	J1	GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.2	µg/L	50	1.0	0.2	U1	GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Calcium	893	mg/L	50	5	1		GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Chromium	<4	µg/L	50	15	4	U1	GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Cobalt	<0.5	µg/L	50	1.5	0.5	U1	GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Lead	<3	µg/L	50	10	3	U1	GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Lithium	1.52	mg/L	50	0.015	0.004		GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Magnesium	435	mg/L	50	5.0	0.5		GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/10/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	6	µg/L	50	25	3	J1	GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Potassium	27	mg/L	50	5	1		GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Selenium	<2	µg/L	50	25	2	U1	GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Sodium	8230	mg/L	50	10	1		GES	11/05/2025 14:48	EPA 200.8-1994, Rev. 5.4
Strontium	99.4	mg/L	100	0.200	0.006		GES	11/06/2025 02:15	EPA 200.8-1994, Rev. 5.4
Thallium	<0.2	µg/L	8	1.6	0.2	U1	GES	01/12/2026 15:32	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.76	pCi/L	0.07	0.03	R2	ST	11/26/2025 06:46	SW-846 9315-1986, Rev. 0
Carrier Recovery	459	%						
Radium-228	0.38	pCi/L	0.04	0.13	R2	ST	11/20/2025 11:04	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	380	%						

* 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.

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Water Analysis Report

Reissued

Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: LANDFILL DUPLICATE
Customer Description:
Lab Number: 252840-013
Preparation:
Date Collected: 10/28/2025 09:21 EDT
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.1	µg/L	5	0.5	0.1	J1	GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Arsenic	2.5	µg/L	5	0.5	0.2		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Barium	121	µg/L	5	1.0	0.3		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Beryllium	0.1	µg/L	5	0.3	0.1	J1	GES	11/11/2025 17:53	EPA 200.8-1994, Rev. 5.4
Boron	0.71	mg/L	5	0.25	0.03		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Cadmium	0.37	µg/L	5	0.10	0.02		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Calcium	185	mg/L	5	0.5	0.1		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Chromium	1.8	µg/L	5	1.5	0.4		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Cobalt	2.11	µg/L	5	0.15	0.05		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Lead	1.7	µg/L	5	1.0	0.3		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Lithium	0.0044	mg/L	5	0.0015	0.0004		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Magnesium	24.6	mg/L	5	0.50	0.05		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/10/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	3.1	µg/L	5	2.5	0.3		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Potassium	1.6	mg/L	5	0.5	0.1		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Selenium	0.5	µg/L	5	2.5	0.2	J1	GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Sodium	72.7	mg/L	5	1.0	0.1		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Strontium	1.33	mg/L	5	0.0100	0.0003		GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4
Thallium	<0.1	µg/L	5	1.0	0.1	U1	GES	11/05/2025 19:03	EPA 200.8-1994, Rev. 5.4

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Water Analysis Report

Reissued

Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: LANDFILL EQUIP. BLANK
Customer Description:
Lab Number: 252840-014
Preparation:
Date Collected: 10/28/2025 13:52 EDT
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.08	µg/L	1	0.10	0.02	J1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Barium	0.07	µg/L	1	0.20	0.05	J1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.02	µg/L	1	0.05	0.02	U1	GES	11/11/2025 17:59	EPA 200.8-1994, Rev. 5.4
Boron	<0.006	mg/L	1	0.050	0.006	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Calcium	0.05	mg/L	1	0.10	0.02	J1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Chromium	0.31	µg/L	1	0.30	0.07		GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Cobalt	0.02	µg/L	1	0.03	0.01	J1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00007	mg/L	1	0.00030	0.00007	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.01	mg/L	1	0.10	0.01	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2	U1	JLD	11/10/2025 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Potassium	<0.02	mg/L	1	0.10	0.02	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Sodium	<0.02	mg/L	1	0.20	0.02	U1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Strontium	0.00033	mg/L	1	0.00200	0.00006	J1	GES	11/05/2025 19:08	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	11/05/2025 19:08	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: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

Customer Sample ID: FIELD BLANK
Lab Number: 252840-015
Date Collected: 10/28/2025 13:13 EDT

Customer Description:
Preparation:
Date Received: 11/03/2025 11:10 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.08	µg/L	1	0.10	0.02	J1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Barium	<0.05	µg/L	1	0.20	0.05	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.02	µg/L	1	0.05	0.02	U1	GES	11/11/2025 18:04	EPA 200.8-1994, Rev. 5.4
Boron	<0.006	mg/L	1	0.050	0.006	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02	mg/L	1	0.10	0.02	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Chromium	0.29	µg/L	1	0.30	0.07	J1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Cobalt	0.01	µg/L	1	0.03	0.01	J1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00007	mg/L	1	0.00030	0.00007	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.01	mg/L	1	0.10	0.01	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Molybdenum	<0.05	µg/L	1	0.50	0.05	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Potassium	<0.02	mg/L	1	0.10	0.02	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Selenium	<0.04	µg/L	1	0.50	0.04	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Sodium	<0.02	mg/L	1	0.20	0.02	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Strontium	<0.00006	mg/L	1	0.00200	0.00006	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4
Thallium	<0.02	µg/L	1	0.20	0.02	U1	GES	11/05/2025 19:13	EPA 200.8-1994, Rev. 5.4

252840
Job Comments:

Original report issued 12/08/2025. Report reissued 01/13/2026 with reanalysis of 252840-009, 011, and 012 at a lower dilution for thallium.

Dolan Chemical Laboratory
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Groveport, OH 43125
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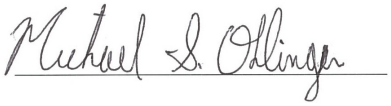
Water Analysis Report

Reissued

Job ID: 252840 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/13/2026**

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

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED. ALL TIMES LISTED ARE IN THE EASTERN TIME ZONE.

Data Qualifer Legend

U1 - Not detected at or below method detection limit (MDL).
J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
R7 - The MDA exceeds the critical value of 0.95 pCi/L.
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: NE LF Semi-Annual CCR sampling
Contact Name: Pryce Warren
Contact Phone: 325-310-6668
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 #: 257840

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 As, B, Ba, Be, Ca,Cd, Cr, Co,K, Li, Na, Pb, Mg, Mo, Sb, Se, Sr, TL	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	250 mL bottle, pH<2, HNO_3 As, B, Ba, Be, Ca,Cd, Cr, Co,K, Li, Na, Pb, Mg, Mo, Sb, Se, TL	Sample Specific Notes:
MW-2D	10/28/2025	1609	G	GW	5		X		X	X		
MW-3D	10/28/2025	857	G	GW	5		X		X	X		
MW-4D	10/28/2025	821	G	GW	8		X		X	X		
MW-5D	10/28/2025	1647	G	GW	5		X		X	X		
MW-6D	10/28/2025	949	G	GW	5		X		X	X		
MW-9D	10/28/2025	1206	G	GW	5		X		X	X		
MW-12D	10/28/2025	1506	G	GW	5		X		X	X		
MW-13D	10/28/2025	1434	G	GW	5		X		X	X		
MW-14	10/28/2025	752	G	GW	5		X			X		
MW-15	10/28/2025	1112	G	GW	5		X		X	X		
MW-18	10/28/2025	734	G	GW	5		X		X	X		
MW-19	10/27/2025	1753	G	GW	5		X		X	X		
LANDFILL DUPLICATE	10/28/2025	821	G	GW	2		X			X		
LANDFILL EQUIPMENT BLANK	10/28/2025	1252	G	W	2		X			X		
FIELD BLANK	10/28/2025	1213	G	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:

* Note: added Strontium to list of metals

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EAGLE	10/30/25 1200		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			[signature]	11·3·25 1110

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

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

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

Plant/Customer Northeastern **Total # of Containers RECEIVED in Job:** 62

Opened By AMR | KJH

Date/Time 11·3·25 1110

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? Y / N or (N/A)

Initial/Date: NA on ice / (no ice) (IR Gun Ser# 240093386, *Expir.* 01/31/2026)

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093379, *Expir.* 01/31/2026)

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)

Were pH requirements met for required samples, per BN-water-900? (Y) / N or N/A

Initial/Date: KJH 11/03/25 -008→-015 ; AMR 11·3·25 -001→-007

KJH 110325

pH paper: mfr LabRat ,PN LRS-4801 ,LOT# X000RWDG21 ,EXPIR DATE 09/30/2026

**** Note changes to pH paper in comments below**

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

(Dissolved) Is sample filtration requested? Y / (N) Comments n/a (See Prep Book)

Was COC filled out properly? (Y) (N) Comments * Wrong # of containers on CoC for MW-140

KJH 110325

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

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

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

Lab ID# 752840 Initial & Date & Time : _____

Logged by KJH Comments: N AMR

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 62 *

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 752840 **Initial/ Date:** 11/03/25 **Peer Review Initial/ Date:** AMR 11.3.25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
21	-001		21
↓	-002		↓
	-003		
	-004		
	-005		
	-006		
	-007		
↓	-008		↓
19	-009	NA	19
21	-010		21
21	-011		21
21	-012		21
19	-013		19
19	-014		19
18	-015		18

Water Analysis Report

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

Job ID: 252801 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/13/2025**

Customer Sample ID: MW-2D
Customer Description:
Lab Number: 252801-001
Preparation:
Date Collected: 10/28/2025 17:09 EDT
Date Received: 11/03/2025 13:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.39	mg/L	2	0.10	0.02		JCF	11/06/2025 02:01	EPA 300.1 -1997, Rev. 1.0
Chloride	12.4	mg/L	2	0.06	0.02		JCF	11/06/2025 02:01	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.72	mg/L	2	0.06	0.02		JCF	11/06/2025 02:01	EPA 300.1 -1997, Rev. 1.0
Sulfate	665	mg/L	25	7.5	0.5		JCF	11/05/2025 18:23	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	186	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	1270	mg/L	2	100	40		BLB	11/04/2025 07:34	SM 2540C-2020

Customer Sample ID: MW-3D
Customer Description:
Lab Number: 252801-002
Preparation:
Date Collected: 10/28/2025 09:57 EDT
Date Received: 11/03/2025 13:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.30	mg/L	2	0.10	0.02		JCF	11/06/2025 02:24	EPA 300.1 -1997, Rev. 1.0
Chloride	13.3	mg/L	2	0.06	0.02		JCF	11/06/2025 02:24	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.88	mg/L	2	0.06	0.02		JCF	11/06/2025 02:24	EPA 300.1 -1997, Rev. 1.0
Sulfate	167	mg/L	10	3.0	0.2		JCF	11/05/2025 17:37	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	360	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	680	mg/L	2	100	40		LM	11/03/2025 14:09	SM 2540C-2020

AMERICAN ELECTRIC POWER

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

Water Analysis Report

Job ID: 252801 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/13/2025**

Customer Sample ID: MW-4D **Customer Description:**
Lab Number: 252801-003 **Preparation:**
Date Collected: 10/28/2025 09:21 EDT **Date Received: 11/03/2025 13:30 EST**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.63	mg/L	2	0.10	0.02		JCF	11/06/2025 02:47	EPA 300.1 -1997, Rev. 1.0
Chloride	37.5	mg/L	25	0.8	0.3		JCF	11/05/2025 18:46	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.26	mg/L	2	0.06	0.02		JCF	11/06/2025 02:47	EPA 300.1 -1997, Rev. 1.0
Sulfate	308	mg/L	25	7.5	0.5		JCF	11/05/2025 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	379	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	870	mg/L	2	100	40		LM	11/03/2025 14:09	SM 2540C-2020

Customer Sample ID: MW-5D **Customer Description:**
Lab Number: 252801-004 **Preparation:**
Date Collected: 10/28/2025 17:47 EDT **Date Received: 11/03/2025 13:30 EST**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.15	mg/L	2	0.10	0.02		JCF	11/06/2025 03:10	EPA 300.1 -1997, Rev. 1.0
Chloride	24.5	mg/L	2	0.06	0.02		JCF	11/06/2025 03:10	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.62	mg/L	2	0.06	0.02		JCF	11/06/2025 03:10	EPA 300.1 -1997, Rev. 1.0
Sulfate	124	mg/L	10	3.0	0.2		JCF	11/05/2025 18:00	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	404	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	590	mg/L	1	50	20		BLB	11/04/2025 07:34	SM 2540C-2020

Water Analysis Report

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

Job ID: 252801 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/13/2025**

Customer Sample ID: MW-6D
Lab Number: 252801-005
Date Collected: 10/28/2025 10:49 EDT
Customer Description:
Preparation:
Date Received: 11/03/2025 13:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.36	mg/L	2	0.10	0.02		JCF	11/06/2025 03:56	EPA 300.1 -1997, Rev. 1.0
Chloride	24.5	mg/L	2	0.06	0.02		JCF	11/06/2025 03:56	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.79	mg/L	2	0.06	0.02		JCF	11/06/2025 03:56	EPA 300.1 -1997, Rev. 1.0
Sulfate	400	mg/L	25	7.5	0.5		JCF	11/05/2025 19:31	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		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	1000	mg/L	2	100	40		BLB	11/04/2025 07:40	SM 2540C-2020

Customer Sample ID: MW-9D
Lab Number: 252801-006
Date Collected: 10/28/2025 13:06 EDT
Customer Description:
Preparation:
Date Received: 11/03/2025 13:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.30	mg/L	2	0.10	0.02		JCF	11/06/2025 04:19	EPA 300.1 -1997, Rev. 1.0
Chloride	24.0	mg/L	2	0.06	0.02		JCF	11/06/2025 04:19	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.87	mg/L	2	0.06	0.02		JCF	11/06/2025 04:19	EPA 300.1 -1997, Rev. 1.0
Sulfate	527	mg/L	25	7.5	0.5		JCF	11/05/2025 19:54	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	287	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	1140	mg/L	2	100	40	S7	BLB	11/04/2025 07:40	SM 2540C-2020

AMERICAN ELECTRIC POWER

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

Water Analysis Report

Job ID: 252801 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/13/2025**

Customer Sample ID: MW-12D **Customer Description:**
Lab Number: 252801-007 **Preparation:**
Date Collected: 10/28/2025 16:06 EDT **Date Received: 11/03/2025 13:30 EST**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.34	mg/L	2	0.10	0.02		JCF	11/06/2025 04:42	EPA 300.1 -1997, Rev. 1.0
Chloride	10.6	mg/L	2	0.06	0.02		JCF	11/06/2025 04:42	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.90	mg/L	2	0.06	0.02		JCF	11/06/2025 04:42	EPA 300.1 -1997, Rev. 1.0
Sulfate	408	mg/L	25	7.5	0.5		JCF	11/05/2025 20:17	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	169	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	810	mg/L	1	50	20		BLB	11/04/2025 07:40	SM 2540C-2020

Customer Sample ID: MW-13D **Customer Description:**
Lab Number: 252801-008 **Preparation:**
Date Collected: 10/28/2025 15:34 EDT **Date Received: 11/03/2025 13:30 EST**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.10	mg/L	2	0.10	0.02		JCF	11/06/2025 05:05	EPA 300.1 -1997, Rev. 1.0
Chloride	5.02	mg/L	2	0.06	0.02		JCF	11/06/2025 05:05	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.37	mg/L	2	0.06	0.02		JCF	11/06/2025 05:05	EPA 300.1 -1997, Rev. 1.0
Sulfate	423	mg/L	25	7.5	0.5		JCF	11/05/2025 20:40	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	535	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	1130	mg/L	2	100	40		BLB	11/04/2025 07:40	SM 2540C-2020

AMERICAN ELECTRIC POWER

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

Water Analysis Report

Job ID: 252801 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/13/2025**

Customer Sample ID: MW-15
Lab Number: 252801-009
Date Collected: 10/28/2025 12:12 EDT
Customer Description:
Preparation:
Date Received: 11/03/2025 13:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.32	mg/L	2	0.10	0.02		JCF	11/06/2025 05:51	EPA 300.1 -1997, Rev. 1.0
Chloride	14.1	mg/L	2	0.06	0.02		JCF	11/06/2025 05:51	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.58	mg/L	2	0.06	0.02		JCF	11/06/2025 05:51	EPA 300.1 -1997, Rev. 1.0
Sulfate	650	mg/L	25	7.5	0.5		JCF	11/05/2025 21:26	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	116	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	1180	mg/L	2	100	40	S7	BLB	11/04/2025 07:46	SM 2540C-2020

Customer Sample ID: MW-18
Lab Number: 252801-010
Date Collected: 10/28/2025 08:34 EDT
Customer Description:
Preparation:
Date Received: 11/03/2025 13:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	39.9	mg/L	50	2.5	0.5		JCF	11/06/2025 11:38	EPA 300.1 -1997, Rev. 1.0
Chloride	11800	mg/L	2500	80	30		JCF	11/06/2025 09:21	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.1	mg/L	50	1.5	0.5	J1	JCF	11/06/2025 11:38	EPA 300.1 -1997, Rev. 1.0
Sulfate	1490	mg/L	50	15	1		JCF	11/06/2025 11:38	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	981	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	21700	mg/L	20	1000	400	S7	LM	11/03/2025 14:18	SM 2540C-2020

AMERICAN ELECTRIC POWER

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

Water Analysis Report

Job ID: 252801 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/13/2025**

Customer Sample ID: MW-19 **Customer Description:**
Lab Number: 252801-011 **Preparation:**
Date Collected: 10/27/2025 18:53 EDT **Date Received: 11/03/2025 13:30 EST**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	54.4	mg/L	50	2.5	0.5		JCF	11/06/2025 11:15	EPA 300.1 -1997, Rev. 1.0
Chloride	14600	mg/L	2500	80	30		JCF	11/06/2025 08:58	EPA 300.1 -1997, Rev. 1.0
Fluoride	3.1	mg/L	50	1.5	0.5		JCF	11/06/2025 11:15	EPA 300.1 -1997, Rev. 1.0
Sulfate	8	mg/L	50	15	1	J1	JCF	11/06/2025 11:15	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	487	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	22800	mg/L	20	1000	400		LM	11/03/2025 14:18	SM 2540C-2020

Customer Sample ID: LANDFILL DUPLICATE **Customer Description:**
Lab Number: 252801-012 **Preparation:**
Date Collected: 10/28/2025 09:21 EDT **Date Received: 11/03/2025 13:30 EST**

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.68	mg/L	2	0.10	0.02		JCF	11/06/2025 06:13	EPA 300.1 -1997, Rev. 1.0
Chloride	38.0	mg/L	25	0.8	0.3		JCF	11/05/2025 21:49	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.27	mg/L	2	0.06	0.02		JCF	11/06/2025 06:13	EPA 300.1 -1997, Rev. 1.0
Sulfate	307	mg/L	25	7.5	0.5		JCF	11/05/2025 21:49	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	414	mg/L	1	20	5		GES	11/06/2025 17:37	SM 2320B-2021
TDS, Filterable Residue	880	mg/L	2	100	40		LM	11/03/2025 14:24	SM 2540C-2020

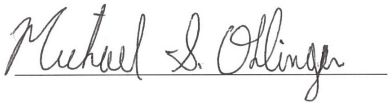
Water Analysis Report

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

Job ID: 252801 **Customer: Northeastern 3&4 Power Station** **Date Reported: 11/13/2025**

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

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED. ALL TIMES LISTED ARE IN THE EASTERN TIME ZONE.

Data Qualifer Legend

S7 - Sample did not achieve constant weight.

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: Pryce Warren
Contact Phone: 325-310-6668
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 #: 752801

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	250 mL bottle, pH<2, HNO_3 As, B, Ba, Be, Ca,Cd, Cr, Co,K, Li, Na, Pb, Mg, Mo, Sb, Se, TL	Sample Specific Notes:
MW-2D	10/28/2025	1609	G	GW	1			X				
MW-3D	10/28/2025	857	G	GW	1			X				
MW-4D	10/28/2025	821	G	GW	1			X				
MW-5D	10/28/2025	1647	G	GW	1			X				
MW-6D	10/28/2025	949	G	GW	1			X				
MW-9D	10/28/2025	1206	G	GW	1			X				
MW-12D	10/28/2025	1506	G	GW	1			X				
MW-13D	10/28/2025	1434	G	GW	1			X				
MW-15	10/28/2025	1112	G	GW	1			X				
MW-18	10/28/2025	734	G	GW	1			X				
MW-19	10/27/2025	1753	G	GW	1			X				
LANDFILL DUPLICATE	10/28/2025	821	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:
KA MW	EAGLE	10/29/25 1500		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
				11/03/25 1335

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

Package Type: (Cooler) Box Bag Envelope

Delivery Type: UPS (FedEX) USPS Other _____

Plant/Customer Northeastern **Total # of Containers RECEIVED in Job:** 12

Opened By KMA/AMR

Date/Time 11/03/25 1330

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? (Y)/ N or N/A

Initial/Date: AMR 11.3.25 (on ice) / no ice (IR Gun Ser# 240093386, *Expir.* 01/31/2026)

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093379, *Expir.* 01/31/2026)

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

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

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

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)

Were pH requirements met for required samples, per BN-water-900? (Y)/ N or N/A

Initial/Date: AMR 11.3.25

***pH paper:* mfr LabRat ,PN LRS-4801 ,LOT# X000RWDG21 ,EXPIR DATE 09/30/2026

*** Note changes to pH paper in comments below*

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

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

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

Were samples labeled properly? Y / (N) Comments 12D labeled 3 COC times do not match

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

Was the customer contacted? If Yes: Person Contacted: Bryce Warren

Lab ID# 757801 Initial & Date & Time : KMA 11/03/25 1345

Logged by KMA Comments: See attached

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 12

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below:**

i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

AMP 11·3·25

JOB # : 757801 **Initial/ Date:** [illegible] 11/03/25 **Peer Review Initial/ Date:** AMP 11·3·25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
6	757801-001		6
	-002		
	-003		
	-004		
	-005		
	-006		
	-007		
	-008	N/A	
	-009		
	-010		
	-011		
	-012		

Water Analysis Report

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

Job ID: 253176 **Customer: Northeastern 3&4 Power Station** **Date Reported: 01/05/2026**

Customer Sample ID: MW-9D
Lab Number: 253176-001
Date Collected: 12/09/2025 09:46 EST

Customer Description:
Preparation:
Date Received: 12/15/2025 10:50 EST

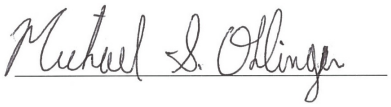
Radiochemistry

Parameter	Result	Units	UNC*(+/-)	MDA*	Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.30	pCi/L	0.07	0.10	O2	WCG	12/31/2025 06:49	SW-846 9315-1986, Rev. 0
Carrier Recovery	104	%						
Radium-228	0.16	pCi/L	0.13	0.43	O2	WCG	12/19/2025 17:15	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	87.5	%						

* 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.

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

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED. ALL TIMES LISTED ARE IN THE EASTERN TIME ZONE.

Data Qualifer Legend

O2 - Insufficient sample was received to perform the MS and duplicate analyses with this sample batch.

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: Pryce Warren

Contact Phone: 325-310-6668

Sampler(s): Matt Hamilton

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

Site Contact:

Date:

For Lab Use Only:
COC/Order #: 253174

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 As, B, Ba, Be, Ca,Cd, Cr, Co,K, Li, Na, Pb, Mg, Mo, Sb, Se, Sr, Tl	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	250 mL bottle, pH<2, HNO_3 As, B, Ba, Be, Ca,Cd, Cr, Co,K, Li, Na, Pb, Mg, Mo, Sb, Se, Tl	Sample Specific Notes:
MW-9D	12/9/2025	846	G	GW	6				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
Matt Hamilton	Eagle	12-10-25 1500		
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:
			Aleem Pandor	12-15-25 1050

WATER & WASTE SAMPLE RECEIPT FORM

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

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

Plant/Customer Northeastern **Total # of Containers RECEIVED in Job:** 6

Opened By AMR

Date/Time 12.15.25 1050

Were all required temperatures, per BN-water-900, T≤6°C *w/o sample freezing*? Y / N or (N/A)

Initial/Date: NA on ice / (no ice) (IR Gun Ser# 240093386, *Expir.* 02/28/2026)

If No, specify each deviation(s) on back of form. (IR Gun Ser# 240093379, *Expir.* 02/28/2026)

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

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

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

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)

Were pH requirements met for required samples, per BN-water-900? (Y) / N or N/A

Initial/Date: AMR 12.15.25

pH paper: mfr LabRat ,PN LRS-4801 ,LOT# X000RWDG21 ,EXPIR DATE 09/30/2026

*** Note changes to pH paper in comments below***

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

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

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

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

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

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

Lab ID# 253176 Initial & Date & Time : NA

Logged by AMR Comments: _____

(Record Test Count on back of form)

Total # of Containers LISTED on COC: 6

WATER & WASTE SAMPLE RECEIPT FORM (CONT)

Form SOP-7102 Sample Receipt Form Rev.10, 01/03/25

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the Sample or Job "Comments" field in the LIMS. **Comments below**:
i.e. Mark "LF" if needs Lab filtered, Temperature or Preservative deviation, Preserved upon arrival , etc.

JOB # : 253176 **Initial/ Date:** AMR 12.15.25 **Peer Review Initial/ Date:** EGM 12.16.25

Login Test Count from COC	LIMS Sample ID (or COC Sample Name)	Comments /Nonconformities	Peer Review Test Count from COC
2	253176 -001	NA	2