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November 25, 2025

Mr. Brian Rath
Land Quality Bureau
Iowa Department of Natural Resources
6200 Park Ave
Des Moines, IA 50321

**Subject: 2025 Annual Water Quality Report
Interstate Power and Light Company – Lansing Landfill
Permit #03-SDP-05-01C**

Dear Mr. Rath:

On behalf of Interstate Power and Light Company (IPL), Alliant Energy is providing the enclosed 2025 Annual Water Quality Report for the landfill at the Lansing Generating Station, as required by Permit #03-SDP-05-01C.

Please call me at (515) 558-9704 or email me at jennycoughlin@alliantenergy.com with any questions regarding the enclosed report.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jenny Coughlin", is written over a light blue rectangular background.

Jenny Coughlin
Sr. Environmental Specialist
Alliant Energy Corporate Services, Inc.

Enclosures

Cc: IDNR Field Office #1
Meghan Blodgett, Thomas Karwoski – SCS Engineers

2025 Annual Water Quality Report

Interstate Power and Light Company Lansing Generating Station CCR Landfill Permit #03-SDP-05-01C

Prepared for:

Alliant Energy
4902 North Biltmore Lane
Madison, Wisconsin 53718

SCS ENGINEERS

25225070.00 | November 25, 2025

2830 Dairy Drive
Madison, WI 53718
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CERTIFICATION

I, Thomas J. Karwoski, hereby certify that this report was prepared by me, or under my direct supervision, and that I am a qualified ground water scientist as defined in IAC SS 113.10(1)d.



Signature

November 25, 2025

Date

Pages or Sheets Covered by this Certification:

2025 Annual Water Quality Report and Additional Groundwater Assessment Report – November 2025, Interstate Power and Light Company, Lansing Generating Station CCR Landfill

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EXECUTIVE SUMMARY

Period of Report Coverage

The period of coverage for this report is 2025 and includes the April 2025 annual groundwater sampling event conducted at the Lansing Generating Station Coal Combustion Residual (CCR) Landfill (Site) located in Lansing, Iowa (**Figure 1**).

Report Priority

Exceedances of the Groundwater Protection Standards (GWPSs) detected in 2025 were consistent with previous results. There were no new GWPS exceedances.

There were no new background Upper Prediction Limit (UPL) exceedances identified during the 2025 groundwater monitoring event.

The total number of well/constituent pairs with UPL exceedances did not increase from 2024 to 2025. There were three exceedances in 2024 for which the 2025 results did not exceed the 2025 UPLs. There was one exceedance in 2025 which did not exceed the UPL in 2024.

SCS Engineers recommends that the current monitoring program be continued during 2026, with the modification that monitoring wells MW-13R and MW-15R replace MW-13 and MW-15 in the monitoring program. MW-13 and MW-15 were dry in 2024 and contained insufficient water for sample collection in 2025 following dewatering and closure construction activities at the adjacent impoundment. MW-13 and MW-15 were replaced with deeper wells MW-13R and MW-15R in September 2025. An amendment to Special Provision X.7.a. of Permit 03-SDP-05-01C, replacing MW-13 and MW-15 with MW-13R and MW-15R, was previously requested in a letter submitted to Iowa Department of Natural Resources (IDNR) on August 18, 2025, and IDNR issued an email concurring with the well replacement plan on September 5, 2025. MW-13R and MW-15R were installed in September 2025, and documentation will be transmitted to IDNR under separate cover. The replacement wells will be sampled for the first time prior to April 2026, and will also be sampled during the routine monitoring event in April 2026. Results of these two sampling events will be included in the 2026 AWQR.

No additional requests or amendments to the permit are needed at this time.

Site Status and Applicable Rules

The following summarizes the site status and applicable rules associated with groundwater sampling at the Site:

- **Landfill Status:** Closed. Permit #03-SDP-05-01C. The landfill was closed in 2023. Closure documentation was submitted with the 2023 Annual Water Quality Report (AWQR) under separate cover, and IDNR issued a closure permit on December 21, 2023, initiating post-closure monitoring activities.
- **Types of Wastes Accepted:** The Lansing landfill is a monofill that primarily accepted CCR generated from coal combustion at the Lansing Generating Station.
- **Applicable Iowa Administrative Code (IAC) Rules:** The monitoring was performed, and this report was prepared, in accordance with the requirements of IAC Chapter 567-103, and

certain provisions of 567-115.26(6). IAC 567-115.21 was referenced for monitoring well maintenance and evaluation requirements, in place of the rescinded 567-110.9. The monitoring and reporting were also performed in accordance with the special provisions of the landfill closure permit, dated December 21, 2023.

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ACRONYMS/ABBREVIATIONS

AWQR = Annual Water Quality Report
CCR = Coal Combustion Residual
COC = Chain of Custody
DO = Dissolved Oxygen
GWPS = Groundwater Protection Standard
IAC = Iowa Administrative Code
IDNR = Iowa Department of Natural Resources
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
ORP = Oxidation Reduction Potential
QA/QC = Quality Assurance/Quality Control
RCRA = Resource Conservation and Recovery Act
SSI = Statistically Significant Increase over background
Site = Lansing Generating Station Coal Combustion Residual Landfill
UPL = Upper Prediction Limits
U.S. EPA = U.S. Environmental Protection Agency
Unified Guidance = U.S. Environmental Protection Agency Unified Guidance for Statistical
Analysis of Groundwater Monitoring Data at Resource Conservation and
Recovery Act Facilities

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1.0 SITE BACKGROUND

1.1 SITE HISTORY

The Lansing Generating Station Coal Combustion Residual (CCR) Landfill (Site) is located on Power Plant Drive, approximately 3 miles southeast of the City of Lansing, Iowa. The site of the current CCR landfill first received CCR between 1985 and 1987 and was temporarily closed in 1994. On September 11, 2003, a new disposal permit (03-SDP-05-01C) was issued for the Site and CCR placement resumed. The landfill permit was renewed by the Iowa Department of Natural Resources (IDNR) on October 10, 2013. CCR generated from the Lansing Generating Station was the primary material disposed in the landfill. An aerial photo of the Site is shown on **Figure 2**. Note that **Figure 2** shows the monitoring network configuration as it existed during the April 2025 sampling event discussed in this report; well replacements and installations completed in September 2025 are not shown on this figure.

The landfill and adjacent settling pond were closed in 2023. The construction of the landfill final cover was substantially complete on September 15, 2023. Closure construction documentation for the landfill was submitted to IDNR on November 27, 2023, and IDNR issued the closure permit on December 21, 2023. Post-closure activities for the landfill were initiated in December 2023 and continued through 2025.

The landfill is also subject to the federal CCR Rule (40 CFR 257.50-107), including the federal groundwater monitoring requirements. Some wells shown on **Figure 2** were installed to meet the federal requirements but are not currently sampled as part of the state monitoring program. Additional information on the CCR Rule monitoring wells, including sampling results, can be found on the Alliant Energy CCR Rule Compliance Data and Information web site (<https://ccr.alliantenergy.com>).

1.2 SITE HYDROGEOLOGY

1.2.1 Geology

The landfill is bordered on the northeast by bedrock bluffs and on the southwest by an intermittent creek. Historically, the Site was used for farming.

Based upon the soil boring logs from MW-11 (abandoned), MW-11R, and MW-12P, located in the soil berm along the Site, the native soils below the berm include sand, silt, silty clay, organic silt, and silt with gravel. At MW-14, TW-15, TW-16, and TW-17, near the creek located to the southwest of the landfill, silty sand with gravel was encountered from the ground surface to the final boring depths.

On the northeast side of the CCR landfill, in the vicinity of former wells MW-4 and MW-5, the stratigraphy includes a fill layer of 0 to 1.5 feet, underlain by a talus material made up of sandy silt with dolomite or quartz gravel. This talus layer extends to a depth of 6 feet and is underlain by interbedded sandstone and siltstone, to the maximum boring depth of 78 feet. At MW-13, located at the base of the bluff to the east of the CCR settling pond, the talus layer extends to a depth of at least 32 feet; bedrock was not encountered during drilling at this location.

1.2.2 Hydrogeology/Groundwater Flow Conditions

Groundwater levels were measured in April 2025 prior to purging the wells for sampling. The groundwater elevation data, including calculated vertical gradients at monitoring well nests, are

presented in **Table 4**. The 2025 water level data were used to create a groundwater flow map (**Figure 3**).

The groundwater flow direction within the landfill area in April 2025 appears to be to the west-northwest, generally parallel to the valley in which the landfill is constructed. The water table elevation contours are consistent with those mapped during previous sampling events at the site. As evidenced by the fact that MW-13 and MW-15 contained too little water to sample during consecutive years and were replaced by deeper wells MW-13R and MW-15R, groundwater elevations in the immediate vicinity of the former settling pond have decreased following closure of the pond.

Vertical groundwater flow gradients were calculated for the three well clusters at the site, MW-2/MW-3, MW-12/MW-12P, and MW-22/MW-22P. The calculated gradients are shown in **Table 4** and are consistent with historical results.

- Monitoring wells MW-4 and MW-5 were abandoned in 2018; historical vertical gradients at this cluster were consistently upward.
- The vertical gradient at MW-2/MW-3 was upward during the April 2025 monitoring event.
- The vertical gradients at MW-12/MW-12P and MW-22/MW-22P were downward during the April 2025 monitoring event.

2.0 SAMPLING STATUS SUMMARY

The IDNR has requested that sampling data be summarized in a series of tables to consistently convey information related to groundwater monitoring at CCR landfills throughout Iowa. These tables are discussed within the text in appropriate sections as noted and included in the Tables section at the end of the text. **Table 1** provides an overview of the sampling status for the Site, including the monitoring points in the program, current monitoring program, comparative statistics findings, and the number of samples collected. **Figure 2** depicts the monitoring network for the Site.

Field sheets from 2025 are included in **Appendix A**. Sampling completed in 2019 through 2025 and anticipated sampling for 2026 are summarized in **Table 2**. The laboratory analytical report from 2025 is included in **Appendix B**. Historical groundwater chemistry summary tables for sampling performed before 2019 are included in **Appendix C**. Summary tables of groundwater chemistry data for sampling performed since transitioning to unfiltered sampling in 2016 are included with the statistical analysis in **Appendix D**.

Monitoring wells MW-13 and MW-15 had an insufficient quantity of water to sample during the April 2025 sampling event. During the April 2024 sampling event, these also had an insufficient amount of water. Low water levels at these wells in 2024 and 2025 are attributed to the end of ash sluicing and closure of the settling pond. An amendment to Special Provision X.7.a. of Permit 03-SDP-05-01C, replacing MW-13 and MW-15 with planned wells MW-13R and MW-15R, was previously requested in a letter submitted to IDNR on August 18, 2025, and IDNR issued an email concurring with the well replacement plan on September 5, 2025. MW-13R and MW-15R were installed in September 2025, and documentation will be transmitted to IDNR under separate cover. These replacement wells will be sampled for the first time prior to April 2026, and will also be sampled during the routine monitoring event in April 2026. Results of these two sampling events will be included in the 2026 AWQR.

3.0 MONITORING WELL MAINTENANCE AND PERFORMANCE SUMMARY

Iowa Administrative Code (IAC) 67-115.21 was referenced for monitoring well maintenance and evaluation, in place of the rescinded 567-110.9. **Table 3** provides the year in which each requirement was previously met and for which it is next scheduled.

- a. *A biennial examination of high and low water levels accompanied by a discussion of the acceptability of well location (vertically and horizontally) and exposure of the screened interval to the atmosphere.*

Water levels are measured once annually at the Site. The locations and screened intervals of site monitoring wells appear to be appropriate. Deeper replacement wells MW-13R and MW-15R were installed in September 2025 to address lack of horizontal coverage in the vicinity of the settling pond area post-closure. Vertical gradients at monitoring well nests MW-2/MW-3, MW-12/MW-12P, and MW-22/MW-22P are presented in **Table 4**.

- b. *A biennial evaluation of water level conditions in the monitoring wells to ensure that the effects of waste disposal or well operation have not resulted in changes in the hydrologic setting and resultant flow paths.*

As described in **Section 1.2.2**, comparison of the 2025 groundwater contour map and calculated vertical gradients to previous data indicates that the April 2025 groundwater flow conditions are consistent with historical conditions, with the exception of generally lower groundwater elevations in the vicinity of the closed pond following closure. The dominant groundwater flow direction for the Site is to the northwest along the axis of the valley in which the Site is located. MW-13 and MW-15 were replaced with deeper wells in September 2025 as discussed above.

- c. *Annual measurement of well depths to ensure that wells are physically intact and not filling with sediment.*

Well depths measured during 2025 in all wells that do not contain dedicated pumps are summarized in **Table 4**. The difference between the as-installed total depths and the measured total depths for all wells without pumps was less than 1 foot, with the exception of MW-1, MW-2, MW-18, MW-22P, and TW-19. At MW-2, MW-18, and MW-22P the measured depths in 2025 were deeper than the previously-recorded depths, indicating that the discrepancies are likely the result of measurement error rather than sediment accumulation in the wells. The wells at which depth discrepancies greater than 1 foot were noted are used only for groundwater elevation measurements, and the measurements do not indicate that any well screen is fully obstructed or that these wells are not providing reliable groundwater elevation data.

- d. *Every five years conduct in-situ permeability tests on monitoring wells to compare test data with those collected originally to determine if well deterioration is occurring.*

The monitoring wells appear to be functioning as intended and are yielding representative samples. Monitoring wells will be repaired or replaced if they are damaged, become dry, or fill with sediment. In-situ permeability testing is not a requirement of IAC 567-103, and IDNR staff confirmed via email on January 25, 2021, that in-situ permeability testing is not required for wells at the Site.

3.1 WELL MAINTENANCE RECOMMENDATIONS

No well maintenance activities are recommended at this time. Monitoring wells MW-13 and MW-15, which contained insufficient water for sample collection, were replaced by deeper wells in September 2025.

4.0 2025 QUALITY ASSURANCE/QUALITY CONTROL SUMMARY

Data validation quality assurance/quality control (QA/QC) procedures are performed on analytical results for laboratory quality control samples, and a quality assurance assessment of the data is conducted as the data are generated. The QA/QC review procedure provides documentation of the accuracy and precision of the analytical data and confirms that the analyses are sufficiently sensitive to detect constituents at levels below regulatory standards, where such standards exist. QA/QC data validation includes review of sample handling, analytical sensitivity, blanks, accuracy, and precision. The QA/QC and data validation procedures and findings are discussed in more detail below.

4.1 SAMPLE COLLECTION AND HANDLING

Groundwater samples are collected using dedicated low-flow pumps. Samples are not field filtered. A water level measurement tape is the only down-hole equipment used in multiple wells and is decontaminated between wells. All samples are placed on ice after collection and are transported to the laboratory in sealed coolers under Chain of Custody (COC).

Sample receipt forms were reviewed and checked to verify that samples were received in good condition and within the acceptable temperature range. COC records were reviewed to confirm that information was complete.

4.2 ANALYTICAL SENSITIVITY AND BLANKS

Laboratory QA/QC procedures and post-analysis data validation assist in producing data of acceptable quality and reliability. Eurofins - Cedar Falls is a certified laboratory in Iowa and performed QA/QC procedures, including analyzing laboratory method blanks in association with samples collected for the project to check for contributions to the analytical results possibly attributable to laboratory-based contamination. Field blanks were submitted with groundwater samples to assess whether cross-contamination occurred during sample handling and transport.

There were no detections in the April 2025 field blank samples or laboratory method blanks.

4.3 ACCURACY

Laboratory analytical accuracy can be assessed by evaluating the constituent recoveries from the following laboratory QA/QC samples: laboratory control sample (LCS), LCS duplicate (LCSD), matrix spike (MS), and MS duplicate (MSD). LCS/LCSD samples assess the accuracy of analytical procedures by checking the ability to recover constituents added to clean aqueous matrices. MS/MSD samples check the ability to recover constituents added to the sample matrix. Because the QC samples are run by the laboratory on a per-batch basis, MS/MSD samples are not reported for every sample set and are not included in the 2025 analytical reports for the Site. LCS results reported in the April 2025 analytical laboratory reports were within control limits. No flags indicating QA/QC issues were attached to the results.

4.4 DATA QUALITY SUMMARY

Based on the above QA/QC procedures and the field sampling standard operating procedures, the samples collected during this reporting period are considered to be representative of site conditions at the locations and times they were obtained. Based on the QA/QC review, no laboratory samples were rejected as unusable due to QC failures.

5.0 COMPARISON TO STANDARDS

5.1 STATISTICAL ANALYSIS

Historically, statistical analysis was completed for the Site on an annual basis. Following the eight sampling rounds conducted in 2023, the schedule for conducting statistical analysis shifted from annual updates to every 2-3 years. The next statistical update is planned for 2026. The 2023 Annual Statistical Summary Report is included in **Appendix D**, including a summary table of data used for the statistical analysis for each parameter. **Table 5** provides the background and Groundwater Protection Standard (GWPS) summary for the Site.

Groundwater samples collected in 2025 were unfiltered, in accordance with the variance to 567 103.1(2)f, and Amendment #3 to the Sanitary Disposal Permit, granted on December 14, 2015. The 2025 sampling event was the tenth round of unfiltered samples collected at the site, and 2025 was the seventh reporting period during which the statistical approach described below was applied at the Site.

The selected statistical analysis method uses a prediction interval approach as recommended for detection monitoring in the March 2009 U.S. Environmental Protection Agency (U.S. EPA) Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities (Unified Guidance).

Interwell testing was selected for the prediction interval evaluation, with monitoring well MW-6 used as the background well. Monitoring results from the downgradient wells were compared to the upper prediction limits (UPLs) to evaluate whether a statistically significant increase (SSI) over background has occurred. UPL calculations were last updated in 2023 to incorporate the April 2023 sample results at MW-6.

Detection of an SSI at a compliance well indicates that the groundwater quality is different from the background groundwater quality, but does not necessarily indicate an impact to public health or the environment. To evaluate potential health impacts, the monitoring results were compared to health-based standards consistent with previous AWQRs.

5.2 2025 RESULTS

Table 6 is a summary of monitoring points/detected constituents from the 2025 sampling events that did not exceed a UPL. **Table 7** provides a summary of ongoing and newly identified SSIs and compares these concentrations to regulatory standards.

Table 8 provides a visualization of historic SSIs and regulatory standard exceedances since 2016, the first year during which unfiltered samples were collected at the site. **Table 8** does not identify SSI exceedances prior to 2019, as that was the first year UPLs were calculated.

The April 2025 sampling event was the tenth round of samples collected since the site transitioned to unfiltered sampling. Trend analyses were performed for parameters with regulatory exceedances. Trend analyses for well/constituent pairs with GWPS exceedances are summarized in **Table 10**. No significant increasing trends were identified for these well/constituent pairs. Trend test results and associated graphs are included in **Appendix E**.

5.3 STANDARDS HISTORY

The standards history for 2019 to 2025 is summarized in **Table 9**. Graphs of standards history are included in **Appendix F**. There were no changes to the GWPSs in 2025. The UPLs were not updated in 2025; UPLs calculated based on the eight rounds of data available in 2023 were applied to the 2025 sampling results.

6.0 ANNUAL ENGINEERING REPORT

An Annual Engineering Report is included as **Appendix G** to this report. The Annual Engineering Report addresses the requirements in Special Provisions X.4 through X.6 of the December 21, 2023, Closure Permit and is based on observations made during the monthly post-closure inspections of the CCR landfill required in Special Provision X.3.

7.0 SUMMARY OF FINDINGS

There were no new background UPL exceedances identified during the 2025 groundwater monitoring event.

The total number of well/constituent pairs with UPL exceedances did not increase from 2024 to 2025. There were three exceedances in 2024 for which the 2025 results did not exceed the UPLs and three exceedances in 2025 for which the 2024 results did not exceed the UPLs.

GWPS exceedances identified in **Table 8** are consistent with data from previous years. Wells with GWPS exceedances in 2025 were MW-11R, MW-12, and TW-18. Standards exceedances identified at MW-11R and MW-12 (arsenic, manganese, and/or cobalt) appear to reflect impacts from both the CCR landfill and reducing conditions related to organic soils. An evaluation of reducing conditions was presented in the 2014 AWQR, and subsequent field dissolved oxygen (DO) and oxidation reduction potential (ORP) measurements show that reducing conditions persist at MW-11R and MW-12.

8.0 RECOMMENDATIONS

SCS Engineers recommends that the current monitoring program be continued during 2026. As noted in this report, an Amendment replacing MW-13 and MW-15 in the monitoring program with MW-13R and MW-15R has been requested. Monitoring results for these wells will be included in the 2026 AWQR. Quarterly baseline sampling at these wells is not currently planned because groundwater results will be compared to historical data at MW-13 and MW-15; however, data from the initial sampling events will be evaluated to assess whether baseline sampling at the replacement wells may be appropriate.

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- 9 Historic Prediction Limits and Groundwater Protection
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- 10 Groundwater Quality Trend Summary

Table 1 - Monitoring Program Summary
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Monitoring Well	Formation	Current Monitoring Program	Change for Next Sampling Event	Constituent(s) with SSI	Constituent(s) with GWPS Exceedance	Total # of Samples in Each Monitoring Program Since January 1, 2018
						Routine
Sampled Monitoring Wells						
MW-6	Bedrock	Routine	NC	None	None	8
MW-11R	Unconsolidated	Routine	NC	Alkalinity, arsenic, barium, boron, calcium, chloride, cobalt, iron, magnesium, manganese, potassium, sodium, strontium	Arsenic, cobalt, manganese	8
MW-12	Unconsolidated	Routine	NC	Alkalinity, arsenic, barium, boron, cobalt, iron, manganese, potassium, sodium, sulfate	Arsenic, manganese	8
MW-12P	Unconsolidated	Routine	NC	Barium, boron, calcium, chloride, potassium, sodium, strontium, sulfate	None	8
MW-13 ⁽²⁾	Unconsolidated	Routine	NC	--	--	5
MW-14	Unconsolidated	Routine	NC	Iron	None	8
MW-15 ⁽²⁾	Unconsolidated	Routine	NC	--	--	5
TW-18	Unconsolidated	Routine	NC	Alkalinity, arsenic, barium, boron, calcium, chloride, cobalt, iron, manganese, nickel, potassium, sodium, strontium	Cobalt, manganese	8

Table 1 - Monitoring Program Summary
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Monitoring Well	Formation	Current Monitoring Program	Change for Next Sampling Event	Constituent(s) with SSI	Constituent(s) with GWPS Exceedance	Total # of Samples in Each Monitoring Program Since January 1, 2018
						Routine
Water Level Only Monitoring Wells						
MW-1	Bedrock	Routine ⁽¹⁾	NC	N/A	N/A	8
MW-2	Bedrock	Routine ⁽¹⁾	NC	N/A	N/A	8
MW-3	Bedrock	Routine ⁽¹⁾	NC	N/A	N/A	8
MW-18	Bedrock	Routine	NC	N/A	N/A	8
MW-19	Bedrock	Routine	NC	N/A	N/A	8
MW-22	Bedrock	Routine	NC	N/A	N/A	8
MW-22P	Bedrock	Routine	NC	N/A	N/A	8
TW-17	Unconsolidated	Routine	NC	N/A	N/A	8
TW-19	Unconsolidated	Routine	NC	N/A	N/A	8

Notes and Abbreviations:

SSI = Statistically Significant Increase

GWPS = Groundwater Protection Standard

NC = No Change

N/A = Not Applicable

1: MW-1, MW-2, and MW-3 are not sampled but are used voluntarily as groundwater elevation measurement points, in accordance with the October 10, 2013 Permit Renewal.

2: MW-13 and MW-15 were dry during the April 2024 and April 2025 sampling events.

Updated by: BAS 8/28/2025

Checked by: RM, 9/10/2025

Table 2 - Monitoring Program Implementation Schedule
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Monitoring Well	Recent Sampling Dates and Constituents							Upcoming Sampling Dates and Constituents
	April 15-16, 2019	May 20-22, 2020*	April 7-9, 2021	April 4-7, 2022, June 2, 2022**	April 10-11, 2023	April 1-2, 2024	April 1-2, 2025, April 16, 2025^^	April 2026
MW-6	List A	List A	List A	List A	List A	List A	List A	List A
MW-11R								
MW-12								
MW-12P								
MW-13/MW-13R^								
MW-14								
MW-15/MW-15R^								
TW-18	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level
MW-1								
MW-2								
MW-3								
MW-18								
MW-19								
MW-22								
MW-22P	TW-17	TW-19						
TW-17								
TW-19								

Comments:

*: April 2020 sampling was delayed to May 2020 due to the COVID-19 pandemic. IDNR approval for the delay was granted by email on April 10, 2020.

** : Alkalinity was inadvertently left off the analysis list by the laboratory in April 2022 for all samples except MW-6. The affected wells were resampled in June 2022 for alkalinity and field parameters.

^: MW-13 and MW-15R were replaced by MW-13R and MW-15R in September 2025.

^^: MW-6 and MW-12P were sampled on April 16, 2025. The April 1-2, 2025 samples at these wells were inadvertently collected before all field parameters met stability criteria, and these samples were therefore not analyzed.

List A: Alkalinity, chloride, sulfate, arsenic, barium, boron, calcium, cobalt, copper, iron, magnesium, manganese, nickel, potassium, selenium, sodium, strontium, field parameters (dissolved oxygen, redox, pH, temperature, specific conductance)

Updated by: EMS, 6/26/2025
Checked by: MDB 10/22/2025

Table 3 - Monitoring Well Maintenance and Performance Reevaluation Schedule
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Code Reference:	Monitoring Calendar Year					
	2020	2021	2022	2023	2024	2025
567 IAC 115.21(2)a. high and low water levels (biennial)		Completed		Completed		Completed
567 IAC 115.21(2)b. changes in the hydrologic setting and flow paths (biennial)		Completed		Completed		Completed
567 IAC 115.21(2)c. well depths (annual)	(1)	(1)	(1)	(1)	(1)	(1)
567 IAC 115.21(2)d. in-situ permeability tests (every 5 years)	(2)	(2)	(2)	(2)	(2)	(2)

Comments:

(1) To avoid the potential for cross-contamination and increased sample turbidity associated with removing and re-installing dedicated pumps, well depths are not measured annually at wells with dedicated pumps. Depths are checked when pumps are pulled for maintenance or replacement.

(2) In-situ permeability testing is not a requirement of IAC 567-103, and IDNR staff confirmed via email on January 25, 2021 that in-situ permeability testing is not required for wells at the Site. Therefore, in situ permeability tests are not performed every five years. Each monitoring well is inspected annually to evaluate if the monitoring well appears to be functioning as intended. Monitoring wells will be repaired or replaced if they become dry or if they fill with sediment.

Updated by: EMS, 6/26/2025
Checked by: RM, 7/28/2025

Table 4 - Monitoring Well Maintenance and Performance Summary
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Well	Top of Casing (ft amsl)	Top of Screen (ft amsl)	Total Depth (ft)		Date of Measurement	Depth Discrepancy (ft)	Vertical Gradient
					April 1-2, 2025		
MW-1	636.67	626.50	30.17	Groundwater Level (ft)	9.64	1.17	--
				Groundwater Elevation (Ft MSL)	627.03		
				Measured Well Depth (ft)	29.00		
				Submerged screen	Y		
MW-2	657.36	620.50	46.86	Groundwater Level (ft)	36.74	-1.99	0.033 ft/ft Upward
				Groundwater Elevation (Ft MSL)	620.62		
				Measured Well Depth (ft)	48.85		
				Submerged screen	Y		
MW-3	656.78	600.00	63.4^	Groundwater Level (ft)	35.49	-0.20	
				Groundwater Elevation (Ft MSL)	621.29		
				Measured Well Depth (ft)	63.60		
				Submerged screen	Y		
MW-6	741.33	656.00	95.3	Groundwater Level (ft)	76.98	0.00	--
				Groundwater Elevation (Ft MSL)	664.35		
				Measured Well Depth (ft)*	95.30		
				Submerged screen	Y		
MW-11R	686.42	646.94	49.48	Groundwater Level (ft)	41.78	0.00	--
				Groundwater Elevation (Ft MSL)	644.64		
				Measured Well Depth (ft)*	49.48		
				Submerged screen	N		

Table 4 - Monitoring Well Maintenance and Performance Summary
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Well	Top of Casing (ft amsl)	Top of Screen (ft amsl)	Total Depth (ft)		Date of Measurement	Depth Discrepancy (ft)	Vertical Gradient
					April 1-2, 2025		
MW-12	691.40	657.70	48.70	Groundwater Level (ft)	40.95	0.00	0.025 ft/ft Downward
				Groundwater Elevation (Ft MSL)	650.45		
				Measured Well Depth (ft)*	48.70		
				Submerged screen	N		
MW-12P	691.58	627.98	68.60	Groundwater Level (ft)	41.65	0.00	
				Groundwater Elevation (Ft MSL)	649.93		
				Measured Well Depth (ft)*	68.60		
				Submerged screen	Y		
MW-13	658.38	649.48	23.90	Groundwater Level (ft)	20.47	0.30	--
				Groundwater Elevation (Ft MSL)	637.91		
				Measured Well Depth (ft)*	23.60		
				Submerged screen	N		
MW-14	646.06	636.96	24.10	Groundwater Level (ft)	4.29	0.00	--
				Groundwater Elevation (Ft MSL)	641.77		
				Measured Well Depth (ft)*	24.10		
				Submerged screen	Y		
MW-15	656.82	640.82	31.40	Groundwater Level (ft)	27.07	0.20	--
				Groundwater Elevation (Ft MSL)	629.75		
				Measured Well Depth (ft)*	31.20		
				Submerged screen	N		

Table 4 - Monitoring Well Maintenance and Performance Summary
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Well	Top of Casing (ft amsl)	Top of Screen (ft amsl)	Total Depth (ft)		Date of Measurement	Depth Discrepancy (ft)	Vertical Gradient
					April 1-2, 2025		
MW-16	700.26	662.18	53.08	Groundwater Level (ft)	43.94	0.38	--
				Groundwater Elevation (Ft MSL)	656.32		
				Measured Well Depth (ft)	52.70		
				Submerged screen	N		
MW-18	771.09	669.23	116.86	Groundwater Level (ft)	106.78	-1.87	--
				Groundwater Elevation (Ft MSL)	664.31		
				Measured Well Depth (ft)	118.73		
				Submerged screen	N		
MW-19	716.07	651.69	79.38	Groundwater Level (ft)	71.11	-0.32	--
				Groundwater Elevation (Ft MSL)	644.96		
				Measured Well Depth (ft)	79.70		
				Submerged screen	N		
MW-22	702.55	665.27	52.28	Groundwater Level (ft)	39.63	-0.12	0.023 ft/ft Downward
				Groundwater Elevation (Ft MSL)	662.92		
				Measured Well Depth (ft)	52.40		
				Submerged screen	N		
MW-22P	702.17	625.14	82.03	Groundwater Level (ft)	40.03	-1.17	
				Groundwater Elevation (Ft MSL)	662.14		
				Measured Well Depth (ft)	83.20		
				Submerged screen	Y		

Table 4 - Monitoring Well Maintenance and Performance Summary
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Well	Top of Casing (ft amsl)	Top of Screen (ft amsl)	Total Depth (ft)		Date of Measurement	Depth Discrepancy (ft)	Vertical Gradient
					April 1-2, 2025		
TW-17	659.59	649.39	25.20	Groundwater Level (ft)	11.56	0.10	--
				Groundwater Elevation (Ft MSL)	648.03		
				Measured Well Depth (ft)	25.10		
				Submerged screen	N		
TW-18	659.15	650.55	23.60	Groundwater Level (ft)	10.45	0.00	--
				Groundwater Elevation (Ft MSL)	648.7		
				Measured Well Depth (ft)*	23.60		
				Submerged screen	N		
TW-19	659.05	648.95	25.10	Groundwater Level (ft)	10.96	2.60	--
				Groundwater Elevation (Ft MSL)	648.09		
				Measured Well Depth (ft)	22.50		
				Submerged screen	N		

Comments:

*: Well depths measured prior to installation of dedicated pumps. To minimize turbidity and risk of cross-contamination, pumps are not pulled during regular sampling events. Most recent measurement or pre-pump install measurements are displayed.

^: Updated following the April 2021 sampling event. A hard bottom without appreciable sediment was identified at this depth.

Updated by: EMS, 6/26/2025

Checked by: RM, 8/25/2025

Table 5 - Background and GWPS Summary
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Interwell Background Limit (MW-6)								
Constituent	Units	Samples ⁽¹⁾	Detections ⁽¹⁾	UPL	Statistical Test	GWPS	Source	Other Standards
Alkalinity	mg/L	14	14	386	PL(P)	none	--	--
Arsenic	µg/L	10	3	0.880	PL(NP)	10	MCL	--
Barium	µg/L	10	10	53.4	PL(P)	2,000	MCL	--
Boron	µg/L	10	2	110	PL(NP)	6,000	SWS	--
Calcium	mg/L	10	10	86.6	PL(P)	none	--	--
Chloride	mg/L	24	24	9.29	PL(P)	none	--	SMCL 250
Cobalt	µg/L	10	2	0.500	PL(NP)	2.1	SWS	--
Copper	µg/L	10	3	3.20	PL(NP)	1,300	SWS	SMCL 1,000
Iron	µg/L	10	1	66.0	PL(NP)	none	--	SMCL 300
Magnesium	µg/L	10	10	44,800	PL(P)	none	--	--
Manganese	µg/L	10	3	4.40	PL(NP)	300	SWS	SMCL 50
Nickel	µg/L	10	2	1.90	PL(NP)	100	SWS	--
Potassium	µg/L	10	10	1,400	PL(P)	none	--	--
Selenium	µg/L	10	3	1.40	PL(NP)	50	MCL	--
Sodium	µg/L	10	10	5,570	PL(P)	none	--	DWA 20
Strontium	µg/L	10	10	74.1	PL(P)	4,000	SWS	--
Sulfate	mg/L	27	27	34.5	PL(P)	none	--	SMCL 250

PL(NP) - Prediction Limit (Non-Parametric)
PL(P) - Prediction Limit (Parametric)
UPL - Upper Prediction Limit

MCL - Maximum Contaminant Level
SWS - Statewide Standard
GWPS - Groundwater Protection Standard

SMCL - Secondary Maximum Contaminant Level
DWA - Drinking Water Advisory

Comments:

1. Number of samples and detections for metals are based on sampling events since the sampling program was changed from filtered to unfiltered sample collection in 2016. Additional background data are included for chloride, sulfate, and alkalinity.
2. No changes to the previous statistical methods were made in this reporting period.
3. Upper Prediction Limits (UPLs) are calculated based on data collected from 2016 to 2023.

Updated by: EMS 7/11/2025
Checked by: RM, 8/26/2025

Table 6 - Summary of Well/Detected Constituent Pairs With No Immediately Preceding UPL Exceedances

**2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P**

Well	Constituent	Units	Most Recent Result	Background Level (UPL)
MW-6	Alkalinity	mg/L	320	N/A
MW-6	Arsenic	µg/L	<0.53	N/A
MW-6	Barium	µg/L	47	N/A
MW-6	Boron	µg/L	<82	N/A
MW-6	Calcium	mg/L	75	N/A
MW-6	Chloride	mg/L	6.6	N/A
MW-6	Cobalt	µg/L	<0.17	N/A
MW-6	Copper	µg/L	<3.2	N/A
MW-6	Iron	µg/L	<50	N/A
MW-6	Magnesium	µg/L	39000	N/A
MW-6	Manganese	µg/L	<3.6	N/A
MW-6	Nickel	µg/L	<2.3	N/A
MW-6	Potassium	µg/L	1100	N/A
MW-6	Selenium	µg/L	<1.4	N/A
MW-6	Sodium	µg/L	4600	N/A
MW-6	Strontium	µg/L	63	N/A
MW-6	Sulfate	mg/L	23	N/A
MW-12	Calcium	mg/L	66	86.6
MW-12	Chloride	mg/L	7.4	9.29
MW-12	Magnesium	µg/L	34000	44800
MW-12	Nickel	µg/L	3.2 J	1.9
MW-12	Strontium	µg/L	73	74.1
MW-12P	Alkalinity	mg/L	380	386.0
MW-12P	Magnesium	µg/L	41000	44800
MW-12P	Selenium	µg/L	1.9 J	1.4
MW-14	Alkalinity	mg/L	300	386
MW-14	Barium	µg/L	38	53.4
MW-14	Calcium	mg/L	63	86.6
MW-14	Chloride	mg/L	7.1	9.29
MW-14	Cobalt	µg/L	0.20 J	0.50
MW-14	Magnesium	µg/L	34000	44800
MW-14	Manganese	µg/L	9.7 J	4
MW-14	Potassium	µg/L	1100	1400
MW-14	Sodium	µg/L	3000	5570
MW-14	Strontium	µg/L	57	74.1
MW-14	Sulfate	mg/L	18	34.5
TW-18	Magnesium	µg/L	39000	44800
TW-18	Potassium	µg/L	1400	1400
TW-18	Sulfate	mg/L	16	34.5

**Table 6 - Summary of Well/Detected Constituent Pairs With No Immediately Preceding UPL
Exceedances
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P**

Comments:

1. This table provides a summary of detected constituents from the current sampling period that did not exceed a UPL. The background levels listed are interwell prediction limits calculated using MW-6 data from 2016 through 2023.
2. Results below the limit of quantitation (J flags) are estimated values and are not compared to the UPL or GPS. They are included in this table regardless of whether the estimated value is higher or lower than the UPL.
3. MW-6 is a background well. UPLs do not apply.

Updated by: EMS, 6/26/2025
Checked by: RM, 8/26/2025

Table 7 - Summary of Ongoing and Newly Identified SSIs
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Well	Constituent	Units	Most Recent Result	Background Standard (UPL)	Action Level or Statewide Standard
MW-11R	Alkalinity	mg/L	940	386	none
MW-11R	Arsenic	µg/L	39	0.88	10
MW-11R	Barium	µg/L	480	53.4	2,000
MW-11R	Boron	µg/L	260	110	6,000
MW-11R	Calcium	mg/L	150	86.6	none
MW-11R	Chloride	mg/L	14	9.29	none
MW-11R	Cobalt	µg/L	8.3	0.5	2.1
MW-11R	Iron	µg/L	56000	66	none
MW-11R	Magnesium	µg/L	97000	44800	none
MW-11R	Manganese	µg/L	2300	4.4	300
MW-11R	Potassium	µg/L	7200	1400	none
MW-11R	Sodium	µg/L	26000	5570	none
MW-11R	Strontium	µg/L	440	74.1	4,000
MW-12	Alkalinity	mg/L	420	386	none
MW-12	Arsenic	µg/L	22	0.88	10
MW-12	Barium	µg/L	200	53.4	2,000
MW-12	Boron	µg/L	1300	110	6,000
MW-12	Cobalt	µg/L	1.1	0.5	2.1
MW-12	Iron	µg/L	8100	66	none
MW-12	Manganese	µg/L	1000	4.4	300
MW-12	Potassium	µg/L	2500	1400	none
MW-12	Sodium	µg/L	110000	5570	none
MW-12	Sulfate	mg/L	160	34.5	none

Table 7 - Summary of Ongoing and Newly Identified SSIs
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Well	Constituent	Units	Most Recent Result	Background Standard (UPL)	Action Level or Statewide Standard
MW-12P	Barium	µg/L	74	53.4	2,000
MW-12P	Boron	µg/L	880	110	6,000
MW-12P	Calcium	mg/L	100	86.6	none
MW-12P	Chloride	mg/L	26	9.29	none
MW-12P	Potassium	µg/L	4100	1400	none
MW-12P	Sodium	µg/L	33000	5570	none
MW-12P	Strontium	µg/L	140	74.1	4,000
MW-12P	Sulfate	mg/L	70	34.5	none
MW-14	Iron	µg/L	230	66	none
TW-18	Alkalinity	mg/L	420	386	none
TW-18	Arsenic	µg/L	2.3	0.88	10
TW-18	Barium	µg/L	180	53.4	2,000
TW-18	Boron	µg/L	200	110	6,000
TW-18	Calcium	mg/L	96	86.6	none
TW-18	Chloride	mg/L	41	9.29	none
TW-18	Cobalt	µg/L	3.7	0.5	2.1
TW-18	Iron	µg/L	6900	66	none
TW-18	Manganese	µg/L	3100	4.4	300
TW-18	Nickel	µg/L	5.1	1.9	100
TW-18	Potassium	µg/L	1400	1400	none
TW-18	Sodium	µg/L	33000	5570	none
TW-18	Strontium	µg/L	150	74.1	4,000

Comments:

1. This table includes results for wells/constituents that exceeded the UPL in 2025.
2. Results below the limit of quantitation (J flags) are estimated values and are not compared to the UPL or GWPS.

Updated by: BAS, 8/28/2025

QC check by: RM, 9/10/2025

Table 8 - Historic SSIs & Groundwater Protection Standard Exceedances
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Key: gray = SSI ⁽¹⁾ ; black = >GWPS		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Well	Constituent										
MW-11R	Alkalinity										
	Arsenic										
	Barium										
	Boron										
	Calcium										
	Chloride										
	Cobalt										
	Iron										
	Magnesium										
	Manganese										
	Nickel										
	Potassium										
	Sodium										
	Strontium										
MW-12	Alkalinity										
	Arsenic										
	Barium										
	Boron										
	Cobalt										
	Iron										
	Manganese										
	Nickel										
	Potassium										
	Sodium										
	Strontium										
	Sulfate										
MW-12P	Alkalinity										
	Barium										
	Boron										
	Calcium										
	Chloride										
	Iron										
	Magnesium										
	Manganese										
	Potassium										
	Sodium										
	Strontium										
	Sulfate										

Table 8 - Historic SSIs & Groundwater Protection Standard Exceedances
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Key: gray = SSI ⁽¹⁾ ; black = >GWPS		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Well	Constituent										
MW-13	Boron								Well Dry	Not Enough Water to Sample	Not Enough Water to Sample
	Calcium										
	Chloride										
	Cobalt										
	Iron										
	Manganese										
	Potassium										
	Selenium										
	Sodium										
	Strontium										
	Sulfate										
MW-14	Chloride										
	Iron										
	Manganese										
	Sodium										
	Strontium										
MW-15	Sulfate										
	Barium								Well Dry	Not Enough Water to Sample	Not Enough Water to Sample
	Boron										
	Chloride										
	Manganese										
	Potassium										
	Sodium										
	Strontium										
TW-18	Sulfate										
	Alkalinity	Not sampled									
	Arsenic										
	Barium										
	Boron										
	Calcium										
	Chloride										
	Cobalt										
	Iron										
	Manganese										
	Nickel										
	Potassium										
	Sodium										
	Strontium										
	Sulfate										

Comments:

1: UPLs were calculated annually beginning in 2019 when at least four sampling events with unfiltered (total) data. UPLs are only applied to 2019 through 2025 results in this table.

Updated by: BAS, 8/28/2025

Checked by: RM, 9/10/2025

Table 9 - Historic Prediction Limits and Groundwater Protection Standards
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Constituent	Units	UPL							GWPS						
		2019	2020	2021	2022	2023	2024	2025	2019	2020	2021	2022	2023	2024	2025
Alkalinity	mg/L	398	390	382	379	386	386	386	none	none	none	none	none	none	none
Arsenic	µg/L	0.72	1.99	0.88	0.88	0.88	0.88	0.88	10	10	10	10	10	10	10
Barium	µg/L	56.0	55.2	54.0	53.2	53.4	53.4	53.4	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Boron	µg/L	55	110	55.0	55.0	110.0	110.0	110.0	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Calcium	mg/L	75.7	82.2	79.1	84.6	86.6	86.6	86.6	none	none	none	none	none	none	none
Chloride	mg/L	9.42	9.54	9.44	9.38	9.29	9.29	9.29	none	none	none	none	none	none	none
Cobalt	µg/L	0.25	0.50	0.50	0.50	0.50	0.50	0.50	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Copper	µg/L	2.73	7.69	3.20	3.20	3.20	3.20	3.20	1,300	1,300	1,300	1,300	1,300	1,300	1,300
Iron	µg/L	33.0	66.0	66.0	66.0	66.0	66.0	66.0	none	none	none	none	none	none	none
Magnesium	µg/L	47,000	49,300	45,600	43,500	44,800	44,800	44,800	none	none	none	none	none	none	none
Manganese	µg/L	5.06	4.55	2.20	2.20	4.40	4.40	4.40	300	300	300	300	300	300	300
Nickel	µg/L	0.85	1.90	1.90	1.90	1.90	1.90	1.90	100	100	100	100	100	100	100
Potassium	µg/L	1,400	1,530	1,380	1,410	1,400	1,400	1,400	none	none	none	none	none	none	none
Selenium	µg/L	1.11	2.28	1.00	1.00	1.40	1.40	1.40	50	50	50	50	50	50	50
Sodium	µg/L	5,570	5,880	5,620	5,680	5,570	5,570	5,570	none	none	none	none	none	none	none
Strontium	µg/L	74.8	84.3	78.9	76.2	74.1	74.1	74.1	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Sulfate	mg/L	35.4	35.2	34.9	34.6	34.5	34.5	34.5	none	none	none	none	none	none	none

Updated by: EMS 7/11/2025
Checked by: BAS 8/28/2025

Table 10 - Groundwater Quality Trend Summary
2025 Annual Water Quality Report
IPL - Lansing Generating Station - SCS Engineers Project No. 25225070.00
Permit No. 03-SDP-05-01P

Well	Current GWPS Exceedances	Trend
MW-11R	Arsenic	No significant trend
	Cobalt	No significant trend
	Manganese	No significant trend
MW-12	Arsenic	No significant trend
	Manganese	No significant trend
TW-18	Cobalt	No significant trend
	Manganese	No significant trend

Comments:

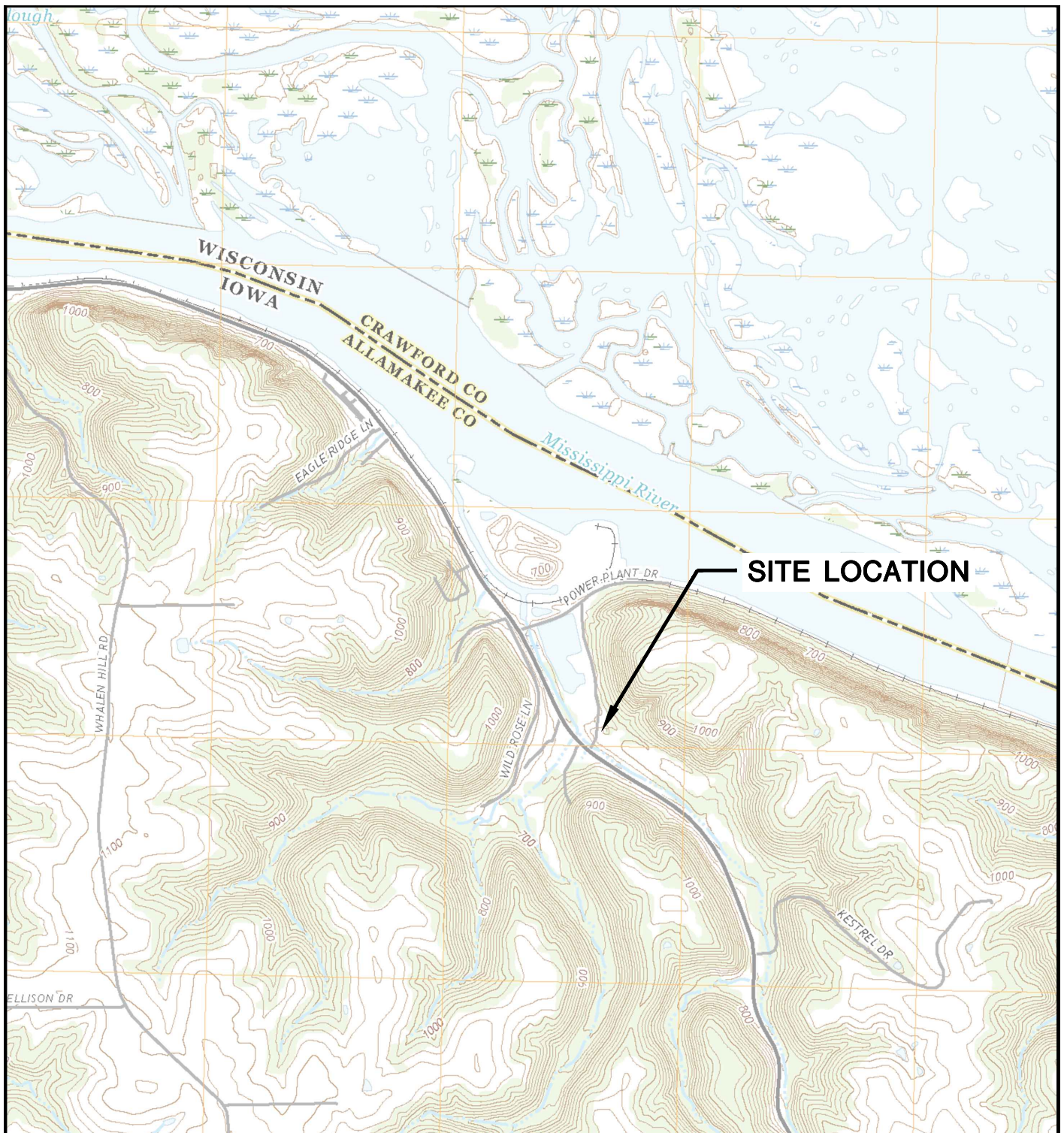
Only well/constituent pairs with GWPS exceedances are included in this summary.

Updated by: EMS, 7/11/2025

Checked by: BAS, 8/28/2025

Figures

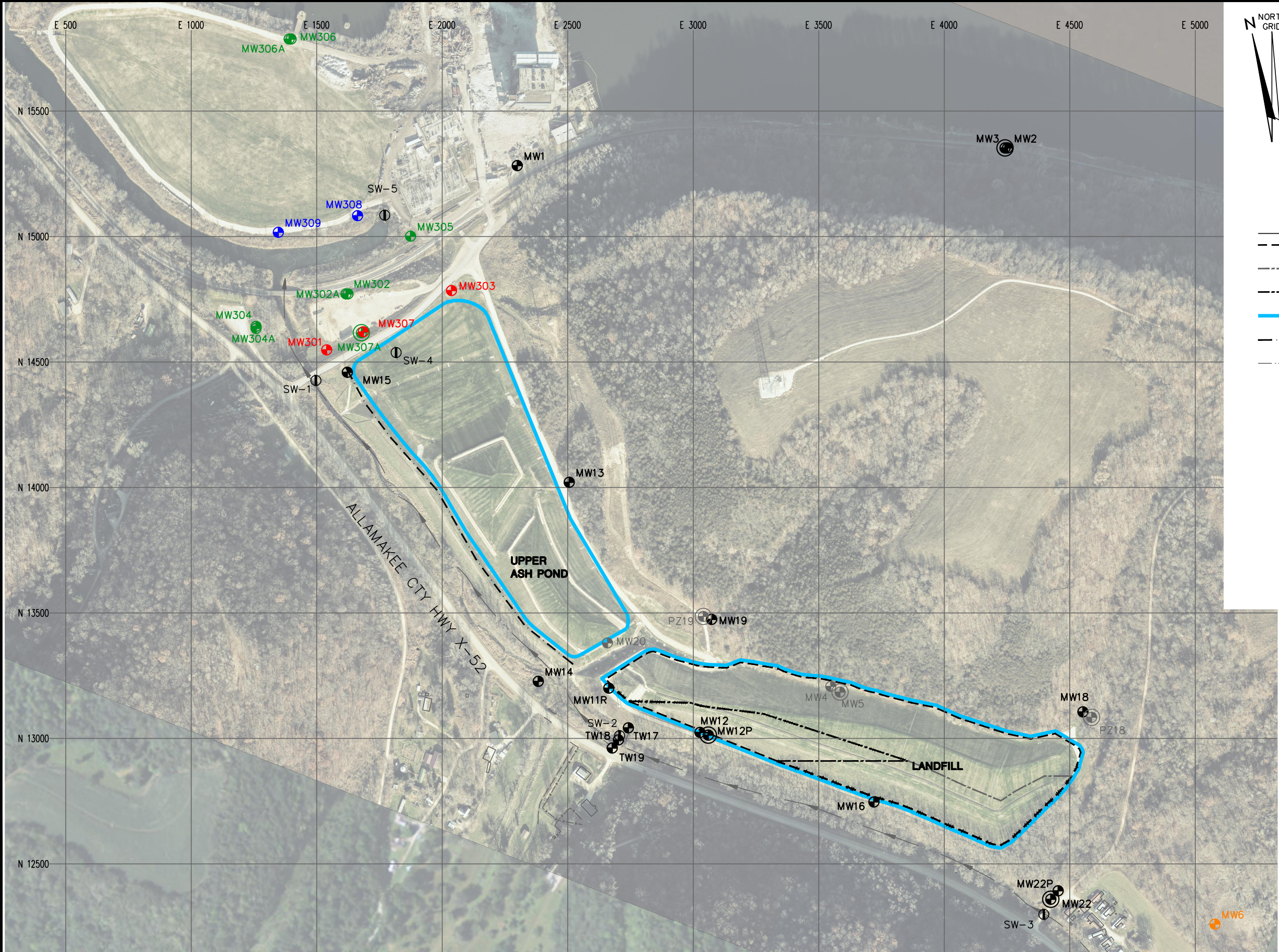
- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations
- 3 Water Table Map, April 1-2, 2025



LANSING QUADRANGLE
IOWA-ALLAMAKEE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

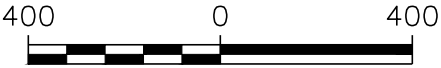


CLIENT INTERSTATE POWER AND LIGHT 2320 POWER PLANT DRIVE LANSING, IA 52151-9733	SITE ALLIANT ENERGY LANSING GENERATING STATION LANSING, IOWA	SITE LOCATION MAP	
PROJECT NO. 25219070.00	DRAWN BY: BSS	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE
DRAWN: 11/27/2019	CHECKED BY: MDB		
REVISED: 03/12/2020	APPROVED BY: JR, 8/9/2022		1



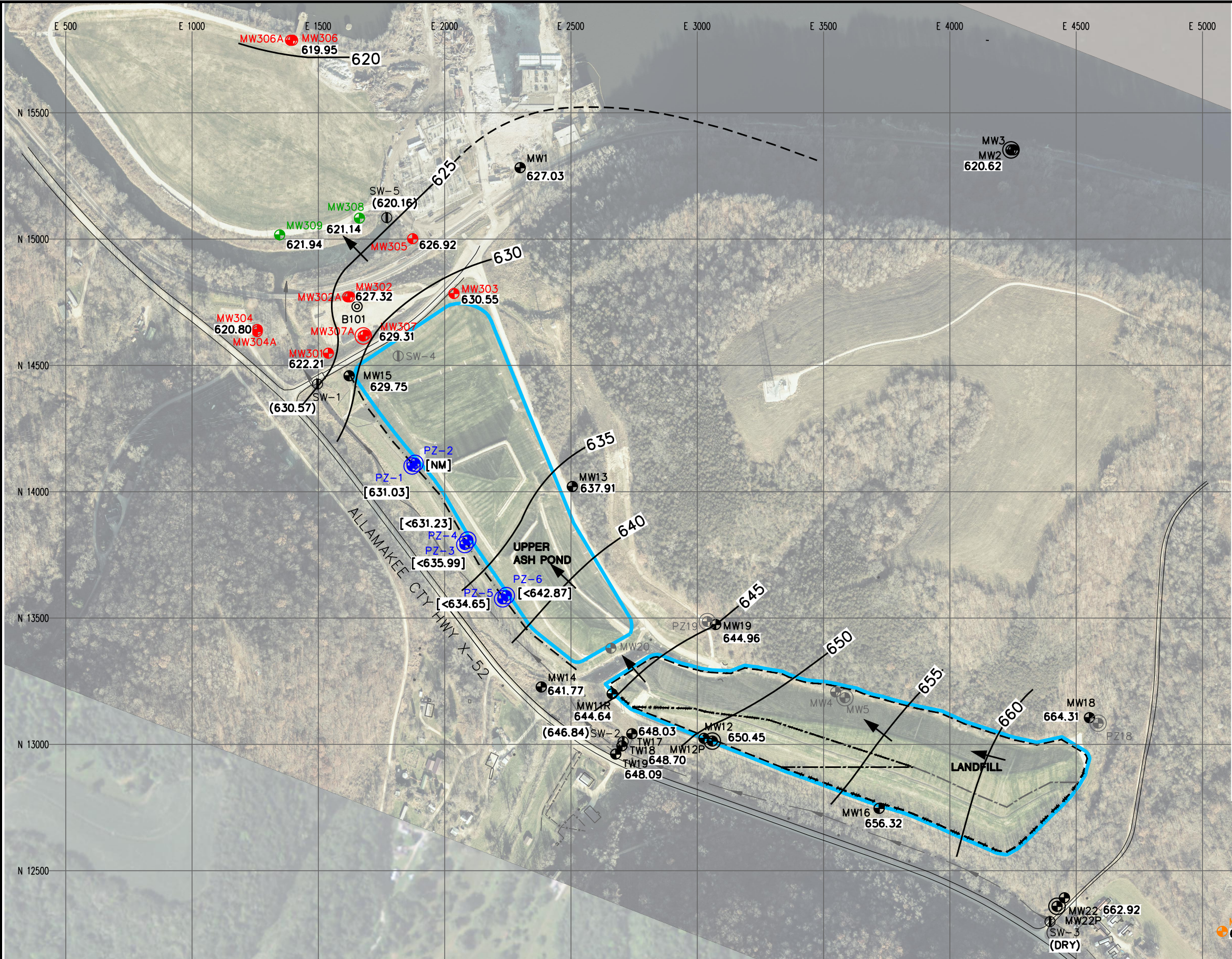
LEGEND	
	APPROVED LIMITS OF WASTE
	LIMITS OF PHASE 1 FINAL COVER
	LIMITS OF PHASE 2 FINAL COVER
	CCR LIMITS
	SLURRY WALL
	EXISTING STREAM
	SW-1 EXISTING STAFF GAUGE
	MW17 EXISTING MONITORING WELL
	MW12P EXISTING PIEZOMETER
	MW4 ABANDONED MONITORING WELL
	MW5 ABANDONED PIEZOMETER
	MW301 CCR DELINEATION MONITORING WELL
	MW307 CCR COMPLIANCE MONITORING WELL
	MW6 CCR BACKGROUND MONITORING WELL
	MW308 WATER LEVEL WELL (NOT PART OF CCR RULE MONITORING SYSTEM)

- NOTES:
1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
 2. MONITORING WELL MW20 WAS ABANDONED ON MAY 5, 2022.
 3. BACKGROUND AERIAL IMAGE IS A COMPOSITE OF A PHOTOGRAPH FROM DRONEVIEW MAPPING DATED NOVEMBER 25, 2023 AND 2011 AERIAL IMAGERY.



SCALE: 1" = 400'

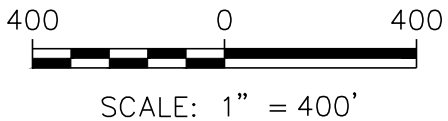
PROJECT NO. 25220082.00		DRAWN BY: KP/SB		ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	CLIENT	INTERSTATE POWER AND LIGHT 2320 POWER PLANT DRIVE LANSING, IA 52151-9733	SITE	ALLIANT ENERGY LANSING POWER STATION LANSING, IOWA	SITE PLAN AND MONITORING WELL LOCATIONS	FIGURE
DRAWN: 05/26/2021		CHECKED BY: RM									2
REVISED: 08/01/2024		APPROVED BY: E.JN 08/01/2024									



- LEGEND
- LIMITS OF PHASE 1 FINAL COVER
 - LIMITS OF PHASE 2 FINAL COVER
 - - - SLURRY WALL
 - - - - - EXISTING STREAM
 - SW-1 EXISTING STAFF GAUGE
 - B101 EXISTING BORING
 - MW17 EXISTING MONITORING WELL
 - MW4 ABANDONED MONITORING WELL
 - MW5 ABANDONED PIEZOMETER
 - SW-4 ABANDONED STAFF GAUGE
 - MW301 CCR MONITORING WELL
 - MW6 CCR BACKGROUND MONITORING WELL
 - MW308 WATER LEVEL WELL (NOT PART OF CCR RULE MONITORING SYSTEM)
 - PZ-4 PIEZOMETER
 - CCR UNITS
 - (NM) NOT MEASURED
 - 666.58 WATER TABLE ELEVATION
 - [630.76] GROUNDWATER ELEVATION NOT USED FOR CONTOUR DEVELOPMENT
 - (630.61) SURFACE WATER ELEVATION
 - WATER TABLE ELEVATION CONTOUR LINE (CONTOUR INTERVAL = 5 FT) (DASHED WHERE INFERRED)
 - APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.



PROJECT NO.	25225070.00	DRAWN BY:	RAR	ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	CLIENT	INTERSTATE POWER AND LIGHT 2320 POWER PLANT DRIVE LANSING, IA 52151-9733	SITE	ALLIANT ENERGY LANSING POWER STATION LANSING, IOWA	WATER TABLE CONTOUR MAP APRIL 1-2, 2025	FIGURE
DRAWN:	04/10/2025	CHECKED BY:	NLB 4/10/2025								5
REVISED:	04/15/2025	APPROVED BY:	TK 11/24/2025								



Appendix A

Groundwater Sampling Field Sheets



Groundwater Sampling Field Sheet

Disposal Site Name: IPL - Lansing Generating Station Permit No.: 03-SDP-05-01P

Well/Piezometer: MW-6 Weather: 48 F/No precipitation/sunny/E wind

Date: 4/16/2025 Sampler Name: Colin Gloede

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.25" Depth to Top of Screen (ft): 85.33

Casing Diameter (in): 2.01 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 741.33 Ground Surface Elevation (ft. MSL):

Field Observations

Locked: ☒ Yes ☐ No

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	76.90	77.00	77.00
Water Elevation (ft. MSL):	664.43	664.33	664.33

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) ☒ Yes ☐ No

	Start	End
Purge Date/Time	4/16/2025 1355	4/16/2025 1442

Well Conditions Commentary: --

Sampling Equipment (check one)

☒ Pump ☐ Interval Sampler
☐ Bailer ☐ Other (specify):

Equipment Name & Description: Well Wizard

Pump Types (check one)

☐ Submersible ☐ Peristaltic ☒ Bladder ☐ Inertial Lift Pump ☐ Other (specify):

Method (check one)

☒ Low Flow ☐ No Purge ☐ Purge

Options (check one)

☒ Dedicated ☐ Disposable ☐ Portable

Decontamination Method: N/A. Dedicated pump.

Field Analysis

							Final Reading
Date/Time					4/16 1425	4/16 1430	4/16 1435
Depth to Water (ft)					77.0	77.0	77.0
Volume Purged (L)					15	17.5	20
Temp (°C)					10.1	10.0	10.0
Sp. Cond (umhos/cm)					575.7	576.4	578.8
pH					7.15	7.16	7.19
DO (mg/l)					0.26	0.37	0.06
ORP (mV)					83.4	84.4	86.5
Turbidity (NTU)					3.40	4.91	4.88

Equipment Depth: 5' off bottom Flow Rate: .5L/min Volume Removed: 23.5L Volume Sampled: 3.5L

Odor? ☐ Yes ☒ No Color? ☐ Yes ☒ No

Comments: --



Groundwater Sampling Field Sheet

Disposal Site Name: Lansing Generating Station Permit No.: 03-SDP-05-01P
Well/Piezometer: MW-11R Weather: 37 F, E wind, no precipitation, cloudy
Date: 4/2/2025 Sampler Name: Ethan Schaefer

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.25 Depth to Top of Screen (ft): 39.48
Casing Diameter (in): 2.01 Casing Material: Schedule 40 PVC
Top of Casing Elevation (ft. MSL): 686.42 Ground Surface Elevation (ft. MSL): _____

Field Observations

Locked: ☒ Yes ☐ No

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	41.78	Below pump	Below pump
Water Elevation (ft. MSL):	644.64	-	-

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) ☐ Yes ☒ No

	Start	End
Purge Date/Time	4/2/2025 827	4/2/2025 923

Well Conditions Commentary: _____

Sampling Equipment (check one)

☒ Pump ☐ Interval Sampler
☐ Bailer ☐ Other (specify): _____

Equipment Name & Description: Well Wizard

Pump Types (check one)

☐ Submersible ☐ Peristaltic ☒ Bladder ☐ Inertial Lift Pump ☐ Other (specify): _____

Method (check one)

☒ Low Flow ☐ No Purge ☐ Purge

Options (check one)

☒ Dedicated ☐ Disposable ☐ Portable

Decontamination Method: N/A

Field Analysis

	Final Reading						
Date/Time	4/2 845	4/2 850	4/2 855	4/2 900	4/2 905	4/2 910	4/2 915
Depth to Water (ft)	Below pump	Below pump	Below pump	Below pump	Below pump	Below pump	Below pump
Volume Purged (L)	12.6	16.1	19.6	23.1	23.85	24.60	25.35
Temp (°C)	10.6	10.4	9.9	9.8	9.6	9.4	9.3
Sp. Cond (umhos/cm)	1539	1536	1520	1504	1495	1485	1474
pH	6.98	6.99	7.00	7.01	7.01	7.02	7.02
DO (mg/l)	0.10	0.15	0.24	0.26	0.26	0.26	0.25
ORP (mV)	-149.2	-152.0	-150.0	-149.5	-148.1	-146.6	-146.0
Turbidity (NTU)	7.21	10.54	6.47	8.41	3.23	3.06	2.48

Equipment Depth: 5' off bottom Flow Rate: .7 L/min* Volume Removed: 25.75 L Volume Sampled: 1 L

Odor? ☐ Yes ☐ No Color? ☐ Yes ☐ No

Comments: *Flow rate changed to .15 L/min at 900, .05 L/min at 915



Groundwater Sampling Field Sheet

Disposal Site Name: IPL - Lansing Generating Station Permit No.: 03-SDP-05-01P

Well/Piezometer: MW-12 Weather: 38 F, E wind, no precipitation, cloudy

Date: 4/2/2025 Sampler Name: Ethan Schaefer

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.25 Depth to Top of Screen (ft): 33.70

Casing Diameter (in): 2.01 Casing Material: Schedule 40 PVC

Top of Casing Elevation (ft. MSL): 691.40 Ground Surface Elevation (ft. MSL): _____

Field Observations

Locked: ☒ Yes ☐ No

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	40.95	Below pump	Below pump
Water Elevation (ft. MSL):	653.45	-	-

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) ☐ Yes ☒ No

	Start	End
Purge Date/Time	4/2/2025 1003	4/2/2025 1034

Well Conditions Commentary: _____

Sampling Equipment (check one)

☒ Pump ☐ Interval Sampler
☐ Bailer ☐ Other (specify): _____

Equipment Name & Description: Well Wizard

Pump Types (check one)

☐ Submersible ☐ Peristaltic ☒ Bladder ☐ Inertial Lift Pump ☐ Other (specify): _____

Method (check one)

☒ Low Flow ☐ No Purge ☐ Purge

Options (check one)

☒ Dedicated ☐ Disposable ☐ Portable

Decontamination Method: N/A

Field Analysis

							Final Reading
Date/Time					4/2 1020	4/2 1025	4/2 1030
Depth to Water (ft)					Below pump	Below pump	Below pump
Volume Purged (L)					11.9	15.4	18.9
Temp (°C)					10.6	10.5	10.3
Sp. Cond (umhos/cm)					932	931	932
pH					7.37	7.38	7.38
DO (mg/l)					0.01	0.07	0.03
ORP (mV)					-100.8	-103.3	-105.1
Turbidity (NTU)					0.62	1.30	0.00

Equipment Depth: 5' off bottom Flow Rate: .7 L/min Volume Removed: 21.7 L Volume Sampled: 0.5 L

Odor? ☐ Yes ☒ No Color? ☐ Yes ☒ No

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: IPL - Lansing Generating Station Permit No.: 03-SDP-05-01P

Well/Piezometer: MW-12P Weather: 46F, E wind, no precipitation, sunny

Date: 4/16/2025 Sampler Name: Colin Gloede

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.25 Depth to Top of Screen (ft): 63.6

Casing Diameter (in): 2.01 Casing Material: Schedule 40 PVC

Top of Casing Elevation (ft. MSL): 691.58 Ground Surface Elevation (ft. MSL): _____

Field Observations

Locked: ☒ Yes ☐ No

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	41.85	41.90	41.90
Water Elevation (ft. MSL):	649.73	649.68	649.68

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) ☒ Yes ☐ No

	Start	End
Purge Date/Time	4/16/2025 1105	4/16/2025 1220

Well Conditions Commentary: _____

Sampling Equipment (check one)

☒ Pump ☐ Interval Sampler
☐ Bailer ☐ Other (specify): _____

Equipment Name & Description: Well Wizard

Pump Types (check one)

☐ Submersible ☐ Peristaltic ☒ Bladder ☐ Inertial Lift Pump ☐ Other (specify): _____

Method (check one)

☒ Low Flow ☐ No Purge ☐ Purge

Options (check one)

☒ Dedicated ☐ Disposable ☐ Portable

Decontamination Method: N/A

Field Analysis

							Final Reading
Date/Time					4/16 1200	4/16 1205	4/16 1210
Depth to Water (ft)					41.90	41.90	41.90
Volume Purged (L)					27.5	30.0	32.5
Temp (°C)					10.7	10.7	10.6
Sp. Cond (umhos/cm)					828	829	828
pH					7.06	7.07	7.09
DO (mg/l)					5.25	5.29	5.24
ORP (mV)					138.7	136.0	133.5
Turbidity (NTU)					0.82	2.82	4.81

Equipment Depth: 2.5' off TD Flow Rate: .5 L/min Volume Removed: 37.5 L Volume Sampled: 0.5 L

Odor? ☐ Yes ☒ No Color? ☐ Yes ☒ No

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: IPL - Lansing Generating Station Permit No.: 03-SDP-05-01P

Well/Piezometer: MW-14 Weather: 56 F, S wind, no precipitation, cloudy

Date: 4/2/2025 Sampler Name: Bri Salome

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.25 Depth to Top of Screen (ft): 9.10

Casing Diameter (in): 2.01 Casing Material: Schedule 40 PVC

Top of Casing Elevation (ft. MSL): 646.06 Ground Surface Elevation (ft. MSL): _____

Field Observations

Locked: ☒ Yes ☐ No

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	4.29	4.45	4.45
Water Elevation (ft. MSL):	641.77	641.61	641.61

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) ☒ Yes ☐ No

	Start	End
Purge Date/Time	4/2/2025 1345	4/2/2025 1512

Well Conditions Commentary: _____

Sampling Equipment (check one)

☒ Pump ☐ Interval Sampler
☐ Bailer ☐ Other (specify): _____

Equipment Name & Description: Well Wizard

Pump Types (check one)

☐ Submersible ☐ Peristaltic ☒ Bladder ☐ Inertial Lift Pump ☐ Other (specify): _____

Method (check one)

☒ Low Flow ☐ No Purge ☐ Purge

Options (check one)

☒ Dedicated ☐ Disposable ☐ Portable

Decontamination Method: N/A

Field Analysis

						Final Reading	
Date/Time					4/2 1455	4/2 1500	4/2 1505
Depth to Water (ft)					4.45	4.45	4.45
Volume Purged (L)					28	30	32
Temp (°C)					9.8	9.7	9.8
Sp. Cond (umhos/cm)					538	539	539
pH					7.30	7.30	7.31
DO (mg/l)					6.21	6.02	5.97
ORP (mV)					72.4	75.9	76.7
Turbidity (NTU)					8.55	8.99	8.31

Equipment Depth: 5' off bottom Flow Rate: .4 L/min Volume Removed: 34.8 L Volume Sampled: .5 L

Odor? ☐ Yes ☒ No Color? ☐ Yes ☒ No

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: IPL - Lansing Generating Station Permit No.: 03-SDP-05-01P

Well/Piezometer: TW-18 Weather: 43 F, SE wind, no precipitation, cloudy

Date: 4/1/2025 Sampler Name: Ethan Schaefer

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.25 Depth to Top of Screen (ft): 8.60

Casing Diameter (in): 2.01 Casing Material: Schedule 40 PVC

Top of Casing Elevation (ft. MSL): 659.15 Ground Surface Elevation (ft. MSL): _____

Field Observations

Locked: ☒ Yes ☐ No

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	10.45	11.61	11.61
Water Elevation (ft. MSL):	648.70	647.54	647.54

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) ☐ Yes ☒ No

	Start	End
Purge Date/Time	4/1/2025 1303	4/1/2025 1450

Well Conditions Commentary: _____

Sampling Equipment (check one)

☒ Pump ☐ Interval Sampler
☐ Bailer ☐ Other (specify): _____

Equipment Name & Description: Well Wizard

Pump Types (check one)

☐ Submersible ☐ Peristaltic ☒ Bladder ☐ Inertial Lift Pump ☐ Other (specify): _____

Method (check one)

☒ Low Flow ☐ No Purge ☐ Purge

Options (check one)

☒ Dedicated ☐ Disposable ☐ Portable

Decontamination Method: N/A

Field Analysis

	Final Reading						
Date/Time	4/1 1415	4/1 1420	4/1 1425	4/1 1430	4/1 1435	4/1 1440	4/1 1445
Depth to Water (ft)	11.61	11.61	11.61	11.61	11.61	11.61	11.61
Volume Purged (L)	14.4	15.4	16.4	17.4	18.4	19.4	20.4
Temp (°C)	6.1	6.1	6.1	6.1	6.2	6.2	6.2
Sp. Cond (umhos/cm)	761.6	759.7	758.6	755.6	757.3	755.5	755.6
pH	7.11	7.12	7.12	7.12	7.13	7.13	7.13
DO (mg/l)	0.24	0.25	0.23	0.28	0.27	0.29	0.29
ORP (mV)	-22.9	-24.5	-25.5	-26.3	-27.1	-28.0	-29.2
Turbidity (NTU)	20.33	22.75	40.43	33.37	22.31	22.53	22.77

Equipment Depth: 5' off bottom Flow Rate: .2 L/min Volume Removed: 21.4 L Volume Sampled: 0.5 L

Odor? ☐ Yes ☒ No Color? ☐ Yes ☒ No

Comments: _____



Appendix B

Laboratory Analytical Reports

ANALYTICAL REPORT

PREPARED FOR

Attn: Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Generated 4/16/2025 1:25:00 PM

JOB DESCRIPTION

Lansing Gen St. -State 25225070

JOB NUMBER

310-303610-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
4/16/2025 1:25:00 PM

Authorized for release by
Sandie Fredrick, Senior Project Manager
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(920)261-1660

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Case Narrative

Client: SCS Engineers
Project: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Job ID: 310-303610-1

Eurofins Cedar Falls

Job Narrative 310-303610-1

Receipt

The samples were received on 4/7/2025 12:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.9° C.

HPLC/IC

Method 9056A: The following sample was diluted due to the nature of the sample matrix: MW-11R (310-303610-2). Elevated reporting limits (RLs) are provided.

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

Metals

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

General Chemistry

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

Eurofins Cedar Falls

Sample Summary

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-303610-2	MW-11R	Water	04/02/25 09:15	04/07/25 12:10
310-303610-3	MW-12	Water	04/02/25 10:30	04/07/25 12:10
310-303610-5	MW-14	Water	04/02/25 15:10	04/07/25 12:10
310-303610-6	TW-18	Water	04/01/25 14:45	04/07/25 12:10
310-303610-7	Field Blank	Water	04/02/25 10:45	04/07/25 12:10

Detection Summary

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Client Sample ID: MW-11R

Lab Sample ID: 310-303610-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14		5.0	2.3	mg/L	5		9056A	Total/NA
Arsenic	39		2.0	0.53	ug/L	1		6020B	Total/NA
Barium	480		2.0	0.66	ug/L	1		6020B	Total/NA
Boron	260		100	82	ug/L	1		6020B	Total/NA
Calcium	150		0.50	0.19	mg/L	1		6020B	Total/NA
Cobalt	8.3		0.50	0.17	ug/L	1		6020B	Total/NA
Iron	56000		100	50	ug/L	1		6020B	Total/NA
Magnesium	97000		2000	600	ug/L	4		6020B	Total/NA
Manganese	2300		10	3.6	ug/L	1		6020B	Total/NA
Potassium	7200		500	170	ug/L	1		6020B	Total/NA
Sodium	26000		1000	650	ug/L	1		6020B	Total/NA
Strontium	440		1.0	0.53	ug/L	1		6020B	Total/NA
Bicarbonate Alkalinity as CaCO3	940		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	940		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Groundwater Elevation	644.64				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-146				mV	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.25				mg/L	1		Field Sampling	Total/NA
Field pH	7.02				SU	1		Field Sampling	Total/NA
Field Conductivity	1474				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	9.3				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	2.48				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-12

Lab Sample ID: 310-303610-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.4		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	160		5.0	2.1	mg/L	5		9056A	Total/NA
Arsenic	22		2.0	0.53	ug/L	1		6020B	Total/NA
Barium	200		2.0	0.66	ug/L	1		6020B	Total/NA
Boron	1300		100	82	ug/L	1		6020B	Total/NA
Calcium	66		0.50	0.19	mg/L	1		6020B	Total/NA
Cobalt	1.1		0.50	0.17	ug/L	1		6020B	Total/NA
Iron	8100		100	50	ug/L	1		6020B	Total/NA
Magnesium	34000		500	150	ug/L	1		6020B	Total/NA
Manganese	1000		10	3.6	ug/L	1		6020B	Total/NA
Nickel	3.2	J	5.0	2.3	ug/L	1		6020B	Total/NA
Potassium	2500		500	170	ug/L	1		6020B	Total/NA
Sodium	110000		1000	650	ug/L	1		6020B	Total/NA
Strontium	73		1.0	0.53	ug/L	1		6020B	Total/NA
Bicarbonate Alkalinity as CaCO3	420		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	420		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Groundwater Elevation	650.45				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-105				mV	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.03				mg/L	1		Field Sampling	Total/NA
Field pH	7.38				SU	1		Field Sampling	Total/NA
Field Conductivity	932				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	10.3				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	0.00				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Client Sample ID: MW-14

Lab Sample ID: 310-303610-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.1		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	18		5.0	2.1	mg/L	5		9056A	Total/NA
Barium	38		2.0	0.66	ug/L	1		6020B	Total/NA
Calcium	63		0.50	0.19	mg/L	1		6020B	Total/NA
Cobalt	0.20	J	0.50	0.17	ug/L	1		6020B	Total/NA
Iron	230		100	50	ug/L	1		6020B	Total/NA
Magnesium	34000		500	150	ug/L	1		6020B	Total/NA
Manganese	9.7	J	10	3.6	ug/L	1		6020B	Total/NA
Potassium	1100		500	170	ug/L	1		6020B	Total/NA
Sodium	3000		1000	650	ug/L	1		6020B	Total/NA
Strontium	57		1.0	0.53	ug/L	1		6020B	Total/NA
Bicarbonate Alkalinity as CaCO3	300		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	300		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Groundwater Elevation	641.77				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	77				mV	1		Field Sampling	Total/NA
Oxygen, Dissolved	5.97				mg/L	1		Field Sampling	Total/NA
Field pH	7.3				SU	1		Field Sampling	Total/NA
Field Conductivity	539				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	9.8				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	8.31				NTU	1		Field Sampling	Total/NA

Client Sample ID: TW-18

Lab Sample ID: 310-303610-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	41		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	16		5.0	2.1	mg/L	5		9056A	Total/NA
Arsenic	2.3		2.0	0.53	ug/L	1		6020B	Total/NA
Barium	180		2.0	0.66	ug/L	1		6020B	Total/NA
Boron	200		100	82	ug/L	1		6020B	Total/NA
Calcium	96		0.50	0.19	mg/L	1		6020B	Total/NA
Cobalt	3.7		0.50	0.17	ug/L	1		6020B	Total/NA
Iron	6900		100	50	ug/L	1		6020B	Total/NA
Magnesium	39000		500	150	ug/L	1		6020B	Total/NA
Manganese	3100		10	3.6	ug/L	1		6020B	Total/NA
Nickel	5.1		5.0	2.3	ug/L	1		6020B	Total/NA
Potassium	1400		500	170	ug/L	1		6020B	Total/NA
Sodium	33000		1000	650	ug/L	1		6020B	Total/NA
Strontium	150		1.0	0.53	ug/L	1		6020B	Total/NA
Bicarbonate Alkalinity as CaCO3	420		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	420		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Groundwater Elevation	648.70				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-29				mV	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.29				mg/L	1		Field Sampling	Total/NA
Field pH	7.13				SU	1		Field Sampling	Total/NA
Field Conductivity	756				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	6.2				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	22.77				NTU	1		Field Sampling	Total/NA

Client Sample ID: Field Blank

Lab Sample ID: 310-303610-7

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Client Sample ID: MW-11R

Lab Sample ID: 310-303610-2

Date Collected: 04/02/25 09:15

Matrix: Water

Date Received: 04/07/25 12:10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		5.0	2.3	mg/L			04/15/25 21:28	5
Sulfate	<2.1		5.0	2.1	mg/L			04/15/25 21:28	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	39		2.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:27	1
Barium	480		2.0	0.66	ug/L		04/09/25 09:00	04/11/25 17:27	1
Boron	260		100	82	ug/L		04/09/25 09:00	04/11/25 17:27	1
Calcium	150		0.50	0.19	mg/L		04/09/25 09:00	04/11/25 17:27	1
Cobalt	8.3		0.50	0.17	ug/L		04/09/25 09:00	04/11/25 17:27	1
Copper	<3.2		5.0	3.2	ug/L		04/09/25 09:00	04/11/25 17:27	1
Iron	56000		100	50	ug/L		04/09/25 09:00	04/11/25 17:27	1
Magnesium	97000		2000	600	ug/L		04/09/25 09:00	04/14/25 12:58	4
Manganese	2300		10	3.6	ug/L		04/09/25 09:00	04/11/25 17:27	1
Nickel	<9.2		20	9.2	ug/L		04/09/25 09:00	04/14/25 12:58	4
Potassium	7200		500	170	ug/L		04/09/25 09:00	04/11/25 17:27	1
Selenium	<1.4		5.0	1.4	ug/L		04/09/25 09:00	04/11/25 17:27	1
Sodium	26000		1000	650	ug/L		04/09/25 09:00	04/11/25 17:27	1
Strontium	440		1.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	940		5.0	2.5	mg/L			04/12/25 17:05	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/12/25 17:05	1
Total Alkalinity as CaCO3 (SM 2320B)	940		5.0	2.5	mg/L			04/12/25 17:05	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Groundwater Elevation	644.64				ft			04/02/25 09:15	1
Oxidation Reduction Potential	-146				mV			04/02/25 09:15	1
Oxygen, Dissolved	0.25				mg/L			04/02/25 09:15	1
Field pH	7.02				SU			04/02/25 09:15	1
Field Conductivity	1474				umhos/cm			04/02/25 09:15	1
Field Temperature	9.3				Degrees C			04/02/25 09:15	1
Field Turbidity	2.48				NTU			04/02/25 09:15	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Client Sample ID: MW-12

Lab Sample ID: 310-303610-3

Date Collected: 04/02/25 10:30

Matrix: Water

Date Received: 04/07/25 12:10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.4		5.0	2.3	mg/L			04/15/25 21:44	5
Sulfate	160		5.0	2.1	mg/L			04/15/25 21:44	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	22		2.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:30	1
Barium	200		2.0	0.66	ug/L		04/09/25 09:00	04/11/25 17:30	1
Boron	1300		100	82	ug/L		04/09/25 09:00	04/11/25 17:30	1
Calcium	66		0.50	0.19	mg/L		04/09/25 09:00	04/11/25 17:30	1
Cobalt	1.1		0.50	0.17	ug/L		04/09/25 09:00	04/11/25 17:30	1
Copper	<3.2		5.0	3.2	ug/L		04/09/25 09:00	04/11/25 17:30	1
Iron	8100		100	50	ug/L		04/09/25 09:00	04/11/25 17:30	1
Magnesium	34000		500	150	ug/L		04/09/25 09:00	04/11/25 17:30	1
Manganese	1000		10	3.6	ug/L		04/09/25 09:00	04/11/25 17:30	1
Nickel	3.2	J	5.0	2.3	ug/L		04/09/25 09:00	04/14/25 13:01	1
Potassium	2500		500	170	ug/L		04/09/25 09:00	04/11/25 17:30	1
Selenium	<1.4		5.0	1.4	ug/L		04/09/25 09:00	04/11/25 17:30	1
Sodium	110000		1000	650	ug/L		04/09/25 09:00	04/11/25 17:30	1
Strontium	73		1.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	420		5.0	2.5	mg/L			04/12/25 17:22	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/12/25 17:22	1
Total Alkalinity as CaCO3 (SM 2320B)	420		5.0	2.5	mg/L			04/12/25 17:22	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Groundwater Elevation	650.45				ft			04/02/25 10:30	1
Oxidation Reduction Potential	-105				mV			04/02/25 10:30	1
Oxygen, Dissolved	0.03				mg/L			04/02/25 10:30	1
Field pH	7.38				SU			04/02/25 10:30	1
Field Conductivity	932				umhos/cm			04/02/25 10:30	1
Field Temperature	10.3				Degrees C			04/02/25 10:30	1
Field Turbidity	0.00				NTU			04/02/25 10:30	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Client Sample ID: MW-14

Lab Sample ID: 310-303610-5

Date Collected: 04/02/25 15:10

Matrix: Water

Date Received: 04/07/25 12:10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.1		5.0	2.3	mg/L			04/15/25 22:00	5
Sulfate	18		5.0	2.1	mg/L			04/15/25 22:00	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:42	1
Barium	38		2.0	0.66	ug/L		04/09/25 09:00	04/11/25 17:42	1
Boron	<82		100	82	ug/L		04/09/25 09:00	04/11/25 17:42	1
Calcium	63		0.50	0.19	mg/L		04/09/25 09:00	04/11/25 17:42	1
Cobalt	0.20	J	0.50	0.17	ug/L		04/09/25 09:00	04/11/25 17:42	1
Copper	<3.2		5.0	3.2	ug/L		04/09/25 09:00	04/14/25 13:07	1
Iron	230		100	50	ug/L		04/09/25 09:00	04/11/25 17:42	1
Magnesium	34000		500	150	ug/L		04/09/25 09:00	04/11/25 17:42	1
Manganese	9.7	J	10	3.6	ug/L		04/09/25 09:00	04/11/25 17:42	1
Nickel	<2.3		5.0	2.3	ug/L		04/09/25 09:00	04/14/25 13:07	1
Potassium	1100		500	170	ug/L		04/09/25 09:00	04/11/25 17:42	1
Selenium	<1.4		5.0	1.4	ug/L		04/09/25 09:00	04/11/25 17:42	1
Sodium	3000		1000	650	ug/L		04/09/25 09:00	04/11/25 17:42	1
Strontium	57		1.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	300		5.0	2.5	mg/L			04/12/25 17:34	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/12/25 17:34	1
Total Alkalinity as CaCO3 (SM 2320B)	300		5.0	2.5	mg/L			04/12/25 17:34	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Groundwater Elevation	641.77				ft			04/02/25 15:10	1
Oxidation Reduction Potential	77				mV			04/02/25 15:10	1
Oxygen, Dissolved	5.97				mg/L			04/02/25 15:10	1
Field pH	7.3				SU			04/02/25 15:10	1
Field Conductivity	539				umhos/cm			04/02/25 15:10	1
Field Temperature	9.8				Degrees C			04/02/25 15:10	1
Field Turbidity	8.31				NTU			04/02/25 15:10	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Client Sample ID: TW-18

Lab Sample ID: 310-303610-6

Date Collected: 04/01/25 14:45

Matrix: Water

Date Received: 04/07/25 12:10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41		5.0	2.3	mg/L			04/15/25 22:15	5
Sulfate	16		5.0	2.1	mg/L			04/15/25 22:15	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.3		2.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:44	1
Barium	180		2.0	0.66	ug/L		04/09/25 09:00	04/11/25 17:44	1
Boron	200		100	82	ug/L		04/09/25 09:00	04/11/25 17:44	1
Calcium	96		0.50	0.19	mg/L		04/09/25 09:00	04/11/25 17:44	1
Cobalt	3.7		0.50	0.17	ug/L		04/09/25 09:00	04/11/25 17:44	1
Copper	<3.2		5.0	3.2	ug/L		04/09/25 09:00	04/14/25 13:09	1
Iron	6900		100	50	ug/L		04/09/25 09:00	04/11/25 17:44	1
Magnesium	39000		500	150	ug/L		04/09/25 09:00	04/11/25 17:44	1
Manganese	3100		10	3.6	ug/L		04/09/25 09:00	04/11/25 17:44	1
Nickel	5.1		5.0	2.3	ug/L		04/09/25 09:00	04/14/25 13:09	1
Potassium	1400		500	170	ug/L		04/09/25 09:00	04/11/25 17:44	1
Selenium	<1.4		5.0	1.4	ug/L		04/09/25 09:00	04/11/25 17:44	1
Sodium	33000		1000	650	ug/L		04/09/25 09:00	04/11/25 17:44	1
Strontium	150		1.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	420		5.0	2.5	mg/L			04/12/25 17:44	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/12/25 17:44	1
Total Alkalinity as CaCO3 (SM 2320B)	420		5.0	2.5	mg/L			04/12/25 17:44	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Groundwater Elevation	648.70				ft			04/01/25 14:45	1
Oxidation Reduction Potential	-29				mV			04/01/25 14:45	1
Oxygen, Dissolved	0.29				mg/L			04/01/25 14:45	1
Field pH	7.13				SU			04/01/25 14:45	1
Field Conductivity	756				umhos/cm			04/01/25 14:45	1
Field Temperature	6.2				Degrees C			04/01/25 14:45	1
Field Turbidity	22.77				NTU			04/01/25 14:45	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Client Sample ID: Field Blank

Lab Sample ID: 310-303610-7

Date Collected: 04/02/25 10:45

Matrix: Water

Date Received: 04/07/25 12:10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.45		1.0	0.45	mg/L			04/15/25 23:02	1
Sulfate	<0.42		1.0	0.42	mg/L			04/15/25 23:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:46	1
Barium	<0.66		2.0	0.66	ug/L		04/09/25 09:00	04/11/25 17:46	1
Boron	<82		100	82	ug/L		04/09/25 09:00	04/11/25 17:46	1
Calcium	<0.19		0.50	0.19	mg/L		04/09/25 09:00	04/11/25 17:46	1
Cobalt	<0.17		0.50	0.17	ug/L		04/09/25 09:00	04/11/25 17:46	1
Copper	<3.2		5.0	3.2	ug/L		04/09/25 09:00	04/14/25 13:12	1
Iron	<50		100	50	ug/L		04/09/25 09:00	04/11/25 17:46	1
Magnesium	<150		500	150	ug/L		04/09/25 09:00	04/11/25 17:46	1
Manganese	<3.6		10	3.6	ug/L		04/09/25 09:00	04/11/25 17:46	1
Nickel	<2.3		5.0	2.3	ug/L		04/09/25 09:00	04/14/25 13:12	1
Potassium	<170		500	170	ug/L		04/09/25 09:00	04/11/25 17:46	1
Selenium	<1.4		5.0	1.4	ug/L		04/09/25 09:00	04/11/25 17:46	1
Sodium	<650		1000	650	ug/L		04/09/25 09:00	04/11/25 17:46	1
Strontium	<0.53		1.0	0.53	ug/L		04/09/25 09:00	04/11/25 17:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/12/25 18:02	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/12/25 18:02	1
Total Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/12/25 18:02	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

QC Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-451765/3

Matrix: Water

Analysis Batch: 451765

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.45		1.0	0.45	mg/L			04/15/25 16:48	1
Sulfate	<0.42		1.0	0.42	mg/L			04/15/25 16:48	1

Lab Sample ID: LCS 310-451765/4

Matrix: Water

Analysis Batch: 451765

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.99		mg/L		100	90 - 110
Sulfate	10.0	9.78		mg/L		98	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-450996/1-A

Matrix: Water

Analysis Batch: 451461

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 450996

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/09/25 09:00	04/11/25 16:27	1
Barium	<0.66		2.0	0.66	ug/L		04/09/25 09:00	04/11/25 16:27	1
Boron	<82		100	82	ug/L		04/09/25 09:00	04/11/25 16:27	1
Calcium	<0.19		0.50	0.19	mg/L		04/09/25 09:00	04/11/25 16:27	1
Cobalt	<0.17		0.50	0.17	ug/L		04/09/25 09:00	04/11/25 16:27	1
Copper	<3.2		5.0	3.2	ug/L		04/09/25 09:00	04/11/25 16:27	1
Iron	<50		100	50	ug/L		04/09/25 09:00	04/11/25 16:27	1
Magnesium	<150		500	150	ug/L		04/09/25 09:00	04/11/25 16:27	1
Manganese	<3.6		10	3.6	ug/L		04/09/25 09:00	04/11/25 16:27	1
Potassium	<170		500	170	ug/L		04/09/25 09:00	04/11/25 16:27	1
Selenium	<1.4		5.0	1.4	ug/L		04/09/25 09:00	04/11/25 16:27	1
Sodium	<650		1000	650	ug/L		04/09/25 09:00	04/11/25 16:27	1
Strontium	<0.53		1.0	0.53	ug/L		04/09/25 09:00	04/11/25 16:27	1

Lab Sample ID: MB 310-450996/1-A

Matrix: Water

Analysis Batch: 451606

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 450996

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<2.3		5.0	2.3	ug/L		04/09/25 09:00	04/14/25 12:27	1

Lab Sample ID: LCS 310-450996/2-A

Matrix: Water

Analysis Batch: 451461

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 450996

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	200		ug/L		100	80 - 120
Barium	100	102		ug/L		102	80 - 120
Boron	200	206		ug/L		103	80 - 120
Calcium	2.00	1.82		mg/L		91	80 - 120
Cobalt	100	100		ug/L		100	80 - 120
Copper	200	205		ug/L		103	80 - 120

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QC Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-450996/2-A

Matrix: Water

Analysis Batch: 451461

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 450996

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	200	212		ug/L		106	80 - 120
Magnesium	2000	1950		ug/L		98	80 - 120
Manganese	100	97.6		ug/L		98	80 - 120
Potassium	2000	1990		ug/L		99	80 - 120
Selenium	400	370		ug/L		92	80 - 120
Sodium	2000	2080		ug/L		104	80 - 120
Strontium	200	197		ug/L		99	80 - 120

Lab Sample ID: LCS 310-450996/2-A

Matrix: Water

Analysis Batch: 451606

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 450996

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	200	204		ug/L		102	80 - 120

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-451433/2

Matrix: Water

Analysis Batch: 451433

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	1000	1020		mg/L		102	86 - 111

QC Association Summary

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

HPLC/IC

Analysis Batch: 451765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-303610-2	MW-11R	Total/NA	Water	9056A	
310-303610-3	MW-12	Total/NA	Water	9056A	
310-303610-5	MW-14	Total/NA	Water	9056A	
310-303610-6	TW-18	Total/NA	Water	9056A	
310-303610-7	Field Blank	Total/NA	Water	9056A	
MB 310-451765/3	Method Blank	Total/NA	Water	9056A	
LCS 310-451765/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 450996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-303610-2	MW-11R	Total/NA	Water	3005A	
310-303610-3	MW-12	Total/NA	Water	3005A	
310-303610-5	MW-14	Total/NA	Water	3005A	
310-303610-6	TW-18	Total/NA	Water	3005A	
310-303610-7	Field Blank	Total/NA	Water	3005A	
MB 310-450996/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-450996/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 451461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-303610-2	MW-11R	Total/NA	Water	6020B	450996
310-303610-3	MW-12	Total/NA	Water	6020B	450996
310-303610-5	MW-14	Total/NA	Water	6020B	450996
310-303610-6	TW-18	Total/NA	Water	6020B	450996
310-303610-7	Field Blank	Total/NA	Water	6020B	450996
MB 310-450996/1-A	Method Blank	Total/NA	Water	6020B	450996
LCS 310-450996/2-A	Lab Control Sample	Total/NA	Water	6020B	450996

Analysis Batch: 451606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-303610-2	MW-11R	Total/NA	Water	6020B	450996
310-303610-3	MW-12	Total/NA	Water	6020B	450996
310-303610-5	MW-14	Total/NA	Water	6020B	450996
310-303610-6	TW-18	Total/NA	Water	6020B	450996
310-303610-7	Field Blank	Total/NA	Water	6020B	450996
MB 310-450996/1-A	Method Blank	Total/NA	Water	6020B	450996
LCS 310-450996/2-A	Lab Control Sample	Total/NA	Water	6020B	450996

General Chemistry

Analysis Batch: 451433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-303610-2	MW-11R	Total/NA	Water	SM 2320B	
310-303610-3	MW-12	Total/NA	Water	SM 2320B	
310-303610-5	MW-14	Total/NA	Water	SM 2320B	
310-303610-6	TW-18	Total/NA	Water	SM 2320B	
310-303610-7	Field Blank	Total/NA	Water	SM 2320B	
LCS 310-451433/2	Lab Control Sample	Total/NA	Water	SM 2320B	

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QC Association Summary

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Field Service / Mobile Lab

Analysis Batch: 451468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-303610-2	MW-11R	Total/NA	Water	Field Sampling	
310-303610-3	MW-12	Total/NA	Water	Field Sampling	
310-303610-5	MW-14	Total/NA	Water	Field Sampling	
310-303610-6	TW-18	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Client Sample ID: MW-11R

Date Collected: 04/02/25 09:15

Date Received: 04/07/25 12:10

Lab Sample ID: 310-303610-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	451765	WZC8	EET CF	04/15/25 21:28
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		1	451461	NFT2	EET CF	04/11/25 17:27
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		4	451606	NFT2	EET CF	04/14/25 12:58
Total/NA	Analysis	SM 2320B		1	451433	T5AC	EET CF	04/12/25 17:05
Total/NA	Analysis	Field Sampling		1	451468	FQT6	EET CF	04/02/25 09:15

Client Sample ID: MW-12

Date Collected: 04/02/25 10:30

Date Received: 04/07/25 12:10

Lab Sample ID: 310-303610-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	451765	WZC8	EET CF	04/15/25 21:44
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		1	451461	NFT2	EET CF	04/11/25 17:30
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		1	451606	NFT2	EET CF	04/14/25 13:01
Total/NA	Analysis	SM 2320B		1	451433	T5AC	EET CF	04/12/25 17:22
Total/NA	Analysis	Field Sampling		1	451468	FQT6	EET CF	04/02/25 10:30

Client Sample ID: MW-14

Date Collected: 04/02/25 15:10

Date Received: 04/07/25 12:10

Lab Sample ID: 310-303610-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	451765	WZC8	EET CF	04/15/25 22:00
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		1	451461	NFT2	EET CF	04/11/25 17:42
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		1	451606	NFT2	EET CF	04/14/25 13:07
Total/NA	Analysis	SM 2320B		1	451433	T5AC	EET CF	04/12/25 17:34
Total/NA	Analysis	Field Sampling		1	451468	FQT6	EET CF	04/02/25 15:10

Client Sample ID: TW-18

Date Collected: 04/01/25 14:45

Date Received: 04/07/25 12:10

Lab Sample ID: 310-303610-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	451765	WZC8	EET CF	04/15/25 22:15
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		1	451461	NFT2	EET CF	04/11/25 17:44
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		1	451606	NFT2	EET CF	04/14/25 13:09

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Lab Chronicle

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Client Sample ID: TW-18

Date Collected: 04/01/25 14:45

Date Received: 04/07/25 12:10

Lab Sample ID: 310-303610-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2320B		1	451433	T5AC	EET CF	04/12/25 17:44
Total/NA	Analysis	Field Sampling		1	451468	FQT6	EET CF	04/01/25 14:45

Client Sample ID: Field Blank

Date Collected: 04/02/25 10:45

Date Received: 04/07/25 12:10

Lab Sample ID: 310-303610-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		1	451765	WZC8	EET CF	04/15/25 23:02
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		1	451461	NFT2	EET CF	04/11/25 17:46
Total/NA	Prep	3005A			450996	F5MW	EET CF	04/09/25 09:00
Total/NA	Analysis	6020B		1	451606	NFT2	EET CF	04/14/25 13:12
Total/NA	Analysis	SM 2320B		1	451433	T5AC	EET CF	04/12/25 18:02

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: SCS Engineers
Project/Site: Lansing Gen St. -State 25225070

Job ID: 310-303610-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
SM 2320B	Alkalinity	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401



Environment Testing
America



310-303610 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY <u>Madison</u>	STATE <u>WI</u>	Project
Receipt Information			
Date/Time Received.	DATE <u>4/7/25</u>	TIME <u>1210</u>	Received By <u>BP</u>
Delivery Type: ☐ UPS ☐ FedEx ☒ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID.
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>3</u> of <u>3</u>
Cooler Custody Seals Present?		☒ Yes ☐ No	If yes Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☐ Yes ☒ No	If yes. Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>P</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>3.9</u>		Corrected Temp (°C): <u>3.9</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Eurofins Cedar Falls

3019 Venture Way

Cedar Falls, IA 50613

Phone 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

v ca Des ures Su

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v EURO FINS

Client Information		Sampler: <u>Ethan Schaefer</u>		Lab PM: <u>Fredrick, Sandie</u>		COC No: <u>310-105013-22479 1</u>	
Client Contact:		Phone:		E-Mail:		Page: <u>Page 1 of 1</u>	
Meghan Blodgett				Sandra Fredrick@et.eurofinsus.com		Job #:	
Company:		PWSID:		Analysis Requested		Preservation Codes: N - None D - HNO3	
SCS Engineers						Other:	
Address:		Due Date Requested:				Total Number of containers	
2830 Dairy Drive							
City:		TAT Requested (days):					
Madison		Standard					
State, Zip:		Compliance Project: ☐ Yes ☐ No					
WI, 53718							
Phone:		PO #:					
608-224-2830		25225070					
Email:		WO #:					
mblodgett@scsengineers.com							
Project Name:		Project #:					
Lansing Gen St. - State 25225070 - State		31011020					
Site: <u>Lansing, IA</u>		SSOW#:					
Sample Identification		Sample Date		Sample Time		Sample Type (G=grab, B=passive, O=on-site, A=air)	
MW-6		4/1/25		1230		G Water	
MW-11R		4/2/25		915		G Water	
MW-12		4/2/25		1030		G Water	
MW-12P		4/2/25		1000		G Water	
MW-13		DRY		-		G Water	
MW-14		4/2/25		1510		G Water	
MW-15		DRY		-		G Water	
TW-18		4/1/25		1445		G Water	
Field Blank		4/2/25		1045		G Water	
Possible Hazard Identification		☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological					
Deliverable Requested I, II, III, IV, Other (specify)							
Empty Kit Relinquished by		Date:		Time:		Method of Shipment	
Relinquished by <u>Bri Salome</u>		Date/Time: <u>4/3/25 1000</u>		Date/Time: <u>4-7-25 1210</u>		Company: <u>Eurofins</u>	
Relinquished by		Date/Time:		Date/Time:		Company:	
Relinquished by		Date/Time:		Date/Time:		Company:	
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks:			

Ver 10/10/2024

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-303610-1

Login Number: 303610

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Collins, Charlotte G

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Groundwater Monitoring Results - Field Parameters
Lansing Generating Station / SCS Engineers Project #25225070.00
April 2025

Sample	Sample Date	Groundwater Elevation (ft amsl)	Temperature (Deg C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity (NTU)
MW-11R	4/2/25 9:15	644.64	9.3	7.02	0.25	1474	-146	2.48
MW-12	4/2/25 10:30	650.45	10.3	7.38	0.03	932	-105	0.00
MW-14	4/2/25 15:10	641.77	9.8	7.3	5.97	539	77	8.31
TW-18	4/1/25 14:45	648.70	6.2	7.13	0.29	756	-29	22.77

Abbreviations:

ft amsl = feet above mean sea level

µmhos/cm = micromhos per centimeter

mg/L = milligrams per liter

mV = millivolts

ORP = Oxidation Reduction (REDOX)

NTU = Nephelometric Turbidity Units

Created by: NDK
 Last revision by: BAS
 Checked by: RM

Date: 4/20/2021
 Date: 4/8/2025
 Date: 4/11/2025

C:\Users\hld0\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\PRU83CC\April 2025_Lansing_State_Field.xlsx>Data

ANALYTICAL REPORT

PREPARED FOR

Attn: Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Generated 4/29/2025 11:21:33 AM

JOB DESCRIPTION

Lansing Generating Station - State - 25225070

JOB NUMBER

310-304420-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Sandie Fredrick, Senior Project Manager
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

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Case Narrative

Client: SCS Engineers
Project: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Job ID: 310-304420-1

Eurofins Cedar Falls

Job Narrative 310-304420-1

Receipt

The samples were received on 4/17/2025 9:05 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.2° C.

HPLC/IC

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

Metals

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

General Chemistry

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

Eurofins Cedar Falls

Sample Summary

Client: SCS Engineers

Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-304420-1	MW-6	Water	04/16/25 14:40	04/17/25 09:05
310-304420-2	MW-12P	Water	04/16/25 12:15	04/17/25 09:05
310-304420-3	Field Blank	Water	04/16/25 12:10	04/17/25 09:05

Detection Summary

Client: SCS Engineers
Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Client Sample ID: MW-6

Lab Sample ID: 310-304420-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.6		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	23		5.0	2.1	mg/L	5		9056A	Total/NA
Barium	47		2.0	0.66	ug/L	1		6020B	Total/NA
Calcium	75000		500	190	ug/L	1		6020B	Total/NA
Magnesium	39000		500	150	ug/L	1		6020B	Total/NA
Potassium	1100		500	170	ug/L	1		6020B	Total/NA
Sodium	4600		1000	650	ug/L	1		6020B	Total/NA
Strontium	63		1.0	0.53	ug/L	1		6020B	Total/NA
Bicarbonate Alkalinity as CaCO3	320		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	320		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Groundwater Elevation	664.43				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	86.5				mV	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.06				mg/L	1		Field Sampling	Total/NA
Field pH	7.19				SU	1		Field Sampling	Total/NA
Field Conductivity	58.8				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	10.0				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	4.88				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-12P

Lab Sample ID: 310-304420-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	26		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	70		5.0	2.1	mg/L	5		9056A	Total/NA
Barium	74		2.0	0.66	ug/L	1		6020B	Total/NA
Boron	880		100	82	ug/L	1		6020B	Total/NA
Calcium	100000		500	190	ug/L	1		6020B	Total/NA
Magnesium	41000		500	150	ug/L	1		6020B	Total/NA
Potassium	4100		500	170	ug/L	1		6020B	Total/NA
Selenium	1.9	J	5.0	1.4	ug/L	1		6020B	Total/NA
Sodium	33000		1000	650	ug/L	1		6020B	Total/NA
Strontium	140		1.0	0.53	ug/L	1		6020B	Total/NA
Bicarbonate Alkalinity as CaCO3	380		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	380		5.0	2.5	mg/L	1		SM 2320B	Total/NA
Groundwater Elevation	649.73				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	133.5				mV	1		Field Sampling	Total/NA
Oxygen, Dissolved	5.24				mg/L	1		Field Sampling	Total/NA
Field pH	7.09				SU	1		Field Sampling	Total/NA
Field Conductivity	828.0				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	10.6				Degrees C	1		Field Sampling	Total/NA
Field Turbidity	4.81				NTU	1		Field Sampling	Total/NA

Client Sample ID: Field Blank

Lab Sample ID: 310-304420-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Client Sample ID: MW-6

Lab Sample ID: 310-304420-1

Date Collected: 04/16/25 14:40

Matrix: Water

Date Received: 04/17/25 09:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.6		5.0	2.3	mg/L			04/22/25 15:18	5
Sulfate	23		5.0	2.1	mg/L			04/22/25 15:18	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/18/25 12:37	04/22/25 14:11	1
Barium	47		2.0	0.66	ug/L		04/18/25 12:37	04/22/25 14:11	1
Boron	<82		100	82	ug/L		04/18/25 12:37	04/22/25 14:11	1
Calcium	75000		500	190	ug/L		04/18/25 12:37	04/22/25 14:11	1
Cobalt	<0.17		0.50	0.17	ug/L		04/18/25 12:37	04/22/25 14:11	1
Copper	<3.2		5.0	3.2	ug/L		04/18/25 12:37	04/22/25 14:11	1
Iron	<50		100	50	ug/L		04/18/25 12:37	04/22/25 14:11	1
Magnesium	39000		500	150	ug/L		04/18/25 12:37	04/22/25 14:11	1
Manganese	<3.6		10	3.6	ug/L		04/18/25 12:37	04/22/25 14:11	1
Nickel	<2.3		5.0	2.3	ug/L		04/18/25 12:37	04/22/25 14:11	1
Potassium	1100		500	170	ug/L		04/18/25 12:37	04/22/25 14:11	1
Selenium	<1.4		5.0	1.4	ug/L		04/18/25 12:37	04/22/25 14:11	1
Sodium	4600		1000	650	ug/L		04/18/25 12:37	04/22/25 14:11	1
Strontium	63		1.0	0.53	ug/L		04/18/25 12:37	04/22/25 14:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	320		5.0	2.5	mg/L			04/23/25 13:59	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/23/25 13:59	1
Total Alkalinity as CaCO3 (SM 2320B)	320		5.0	2.5	mg/L			04/23/25 13:59	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Groundwater Elevation	664.43				ft			04/16/25 14:40	1
Oxidation Reduction Potential	86.5				mV			04/16/25 14:40	1
Oxygen, Dissolved	0.06				mg/L			04/16/25 14:40	1
Field pH	7.19				SU			04/16/25 14:40	1
Field Conductivity	58.8				umhos/cm			04/16/25 14:40	1
Field Temperature	10.0				Degrees C			04/16/25 14:40	1
Field Turbidity	4.88				NTU			04/16/25 14:40	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Client Sample ID: MW-12P

Lab Sample ID: 310-304420-2

Date Collected: 04/16/25 12:15

Matrix: Water

Date Received: 04/17/25 09:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26		5.0	2.3	mg/L			04/22/25 15:31	5
Sulfate	70		5.0	2.1	mg/L			04/22/25 15:31	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/18/25 12:37	04/22/25 14:09	1
Barium	74		2.0	0.66	ug/L		04/18/25 12:37	04/22/25 14:09	1
Boron	880		100	82	ug/L		04/18/25 12:37	04/22/25 14:09	1
Calcium	100000		500	190	ug/L		04/18/25 12:37	04/22/25 14:09	1
Cobalt	<0.17		0.50	0.17	ug/L		04/18/25 12:37	04/22/25 14:09	1
Copper	<3.2		5.0	3.2	ug/L		04/18/25 12:37	04/22/25 14:09	1
Iron	<50		100	50	ug/L		04/18/25 12:37	04/22/25 14:09	1
Magnesium	41000		500	150	ug/L		04/18/25 12:37	04/22/25 14:09	1
Manganese	<3.6		10	3.6	ug/L		04/18/25 12:37	04/22/25 14:09	1
Nickel	<2.3		5.0	2.3	ug/L		04/18/25 12:37	04/22/25 14:09	1
Potassium	4100		500	170	ug/L		04/18/25 12:37	04/22/25 14:09	1
Selenium	1.9 J		5.0	1.4	ug/L		04/18/25 12:37	04/22/25 14:09	1
Sodium	33000		1000	650	ug/L		04/18/25 12:37	04/22/25 14:09	1
Strontium	140		1.0	0.53	ug/L		04/18/25 12:37	04/22/25 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	380		5.0	2.5	mg/L			04/23/25 14:11	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/23/25 14:11	1
Total Alkalinity as CaCO3 (SM 2320B)	380		5.0	2.5	mg/L			04/23/25 14:11	1

Method: EPA Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Groundwater Elevation	649.73				ft			04/16/25 12:15	1
Oxidation Reduction Potential	133.5				mV			04/16/25 12:15	1
Oxygen, Dissolved	5.24				mg/L			04/16/25 12:15	1
Field pH	7.09				SU			04/16/25 12:15	1
Field Conductivity	828.0				umhos/cm			04/16/25 12:15	1
Field Temperature	10.6				Degrees C			04/16/25 12:15	1
Field Turbidity	4.81				NTU			04/16/25 12:15	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Client Sample ID: Field Blank

Lab Sample ID: 310-304420-3

Date Collected: 04/16/25 12:10

Matrix: Water

Date Received: 04/17/25 09:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.45		1.0	0.45	mg/L			04/22/25 15:44	1
Sulfate	<0.42		1.0	0.42	mg/L			04/22/25 15:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/18/25 12:37	04/22/25 14:13	1
Barium	<0.66		2.0	0.66	ug/L		04/18/25 12:37	04/22/25 14:13	1
Boron	<82		100	82	ug/L		04/18/25 12:37	04/22/25 14:13	1
Calcium	<190		500	190	ug/L		04/18/25 12:37	04/22/25 14:13	1
Cobalt	<0.17		0.50	0.17	ug/L		04/18/25 12:37	04/22/25 14:13	1
Copper	<3.2		5.0	3.2	ug/L		04/18/25 12:37	04/22/25 14:13	1
Iron	<50		100	50	ug/L		04/18/25 12:37	04/22/25 14:13	1
Magnesium	<150		500	150	ug/L		04/18/25 12:37	04/22/25 14:13	1
Manganese	<3.6		10	3.6	ug/L		04/18/25 12:37	04/22/25 14:13	1
Nickel	<2.3		5.0	2.3	ug/L		04/18/25 12:37	04/22/25 14:13	1
Potassium	<170		500	170	ug/L		04/18/25 12:37	04/22/25 14:13	1
Selenium	<1.4		5.0	1.4	ug/L		04/18/25 12:37	04/22/25 14:13	1
Sodium	<650		1000	650	ug/L		04/18/25 12:37	04/22/25 14:13	1
Strontium	<0.53		1.0	0.53	ug/L		04/18/25 12:37	04/22/25 14:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/23/25 14:29	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/23/25 14:29	1
Total Alkalinity as CaCO3 (SM 2320B)	<2.5		5.0	2.5	mg/L			04/23/25 14:29	1

Definitions/Glossary

Client: SCS Engineers

Job ID: 310-304420-1

Project/Site: Lansing Generating Station - State - 25225070

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

QC Sample Results

Client: SCS Engineers
Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-452649/3

Matrix: Water

Analysis Batch: 452649

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.45		1.0	0.45	mg/L			04/22/25 14:00	1
Sulfate	<0.42		1.0	0.42	mg/L			04/22/25 14:00	1

Lab Sample ID: LCS 310-452649/4

Matrix: Water

Analysis Batch: 452649

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.2		mg/L		102	90 - 110
Sulfate	10.0	10.4		mg/L		104	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-452056/1-A

Matrix: Water

Analysis Batch: 452401

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 452056

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.53		2.0	0.53	ug/L		04/18/25 12:37	04/22/25 13:38	1
Barium	<0.66		2.0	0.66	ug/L		04/18/25 12:37	04/22/25 13:38	1
Boron	<82		100	82	ug/L		04/18/25 12:37	04/22/25 13:38	1
Cobalt	<0.17		0.50	0.17	ug/L		04/18/25 12:37	04/22/25 13:38	1
Copper	<3.2		5.0	3.2	ug/L		04/18/25 12:37	04/22/25 13:38	1
Iron	<50		100	50	ug/L		04/18/25 12:37	04/22/25 13:38	1
Magnesium	<150		500	150	ug/L		04/18/25 12:37	04/22/25 13:38	1
Manganese	<3.6		10	3.6	ug/L		04/18/25 12:37	04/22/25 13:38	1
Nickel	<2.3		5.0	2.3	ug/L		04/18/25 12:37	04/22/25 13:38	1
Potassium	<170		500	170	ug/L		04/18/25 12:37	04/22/25 13:38	1
Selenium	<1.4		5.0	1.4	ug/L		04/18/25 12:37	04/22/25 13:38	1
Sodium	<650		1000	650	ug/L		04/18/25 12:37	04/22/25 13:38	1
Strontium	<0.53		1.0	0.53	ug/L		04/18/25 12:37	04/22/25 13:38	1

Lab Sample ID: MB 310-452056/1-A

Matrix: Water

Analysis Batch: 452481

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 452056

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<190		500	190	ug/L		04/18/25 12:37	04/23/25 12:35	1

Lab Sample ID: LCS 310-452056/2-A

Matrix: Water

Analysis Batch: 452401

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 452056

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	174		ug/L		87	80 - 120
Barium	100	88.8		ug/L		89	80 - 120
Boron	200	178		ug/L		89	80 - 120
Cobalt	100	88.8		ug/L		89	80 - 120
Copper	200	172		ug/L		86	80 - 120
Iron	200	178		ug/L		89	80 - 120

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-452056/2-A

Matrix: Water

Analysis Batch: 452401

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 452056

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Magnesium	2000	1640		ug/L		82	80 - 120
Manganese	100	82.2		ug/L		82	80 - 120
Nickel	200	171		ug/L		86	80 - 120
Potassium	2000	1650		ug/L		82	80 - 120
Selenium	400	328		ug/L		82	80 - 120
Sodium	2000	1750		ug/L		87	80 - 120
Strontium	200	168		ug/L		84	80 - 120

Lab Sample ID: LCS 310-452056/2-A

Matrix: Water

Analysis Batch: 452481

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 452056

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	2000	1600		ug/L		80	80 - 120

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-452540/2

Matrix: Water

Analysis Batch: 452540

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3	1000	1010		mg/L		101	86 - 111

QC Association Summary

Client: SCS Engineers
Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

HPLC/IC

Analysis Batch: 452649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304420-1	MW-6	Total/NA	Water	9056A	
310-304420-2	MW-12P	Total/NA	Water	9056A	
310-304420-3	Field Blank	Total/NA	Water	9056A	
MB 310-452649/3	Method Blank	Total/NA	Water	9056A	
LCS 310-452649/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 452056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304420-1	MW-6	Total/NA	Water	3005A	
310-304420-2	MW-12P	Total/NA	Water	3005A	
310-304420-3	Field Blank	Total/NA	Water	3005A	
MB 310-452056/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452056/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 452401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304420-1	MW-6	Total/NA	Water	6020B	452056
310-304420-2	MW-12P	Total/NA	Water	6020B	452056
310-304420-3	Field Blank	Total/NA	Water	6020B	452056
MB 310-452056/1-A	Method Blank	Total/NA	Water	6020B	452056
LCS 310-452056/2-A	Lab Control Sample	Total/NA	Water	6020B	452056

Analysis Batch: 452481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-452056/1-A	Method Blank	Total/NA	Water	6020B	452056
LCS 310-452056/2-A	Lab Control Sample	Total/NA	Water	6020B	452056

General Chemistry

Analysis Batch: 452540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304420-1	MW-6	Total/NA	Water	SM 2320B	
310-304420-2	MW-12P	Total/NA	Water	SM 2320B	
310-304420-3	Field Blank	Total/NA	Water	SM 2320B	
LCS 310-452540/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Field Service / Mobile Lab

Analysis Batch: 452990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304420-1	MW-6	Total/NA	Water	Field Sampling	
310-304420-2	MW-12P	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: SCS Engineers
Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Client Sample ID: MW-6

Date Collected: 04/16/25 14:40

Date Received: 04/17/25 09:05

Lab Sample ID: 310-304420-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	452649	WZC8	EET CF	04/22/25 15:18
Total/NA	Prep	3005A			452056	QTZ5	EET CF	04/18/25 12:37
Total/NA	Analysis	6020B		1	452401	NFT2	EET CF	04/22/25 14:11
Total/NA	Analysis	SM 2320B		1	452540	WZC8	EET CF	04/23/25 13:59
Total/NA	Analysis	Field Sampling		1	452990	FQT6	EET CF	04/16/25 14:40

Client Sample ID: MW-12P

Date Collected: 04/16/25 12:15

Date Received: 04/17/25 09:05

Lab Sample ID: 310-304420-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	452649	WZC8	EET CF	04/22/25 15:31
Total/NA	Prep	3005A			452056	QTZ5	EET CF	04/18/25 12:37
Total/NA	Analysis	6020B		1	452401	NFT2	EET CF	04/22/25 14:09
Total/NA	Analysis	SM 2320B		1	452540	WZC8	EET CF	04/23/25 14:11
Total/NA	Analysis	Field Sampling		1	452990	FQT6	EET CF	04/16/25 12:15

Client Sample ID: Field Blank

Date Collected: 04/16/25 12:10

Date Received: 04/17/25 09:05

Lab Sample ID: 310-304420-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		1	452649	WZC8	EET CF	04/22/25 15:44
Total/NA	Prep	3005A			452056	QTZ5	EET CF	04/18/25 12:37
Total/NA	Analysis	6020B		1	452401	NFT2	EET CF	04/22/25 14:13
Total/NA	Analysis	SM 2320B		1	452540	WZC8	EET CF	04/23/25 14:29

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Lansing Generating Station - State - 25225070

Job ID: 310-304420-1

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: SCS Engineers

Job ID: 310-304420-1

Project/Site: Lansing Generating Station - State - 25225070

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
SM 2320B	Alkalinity	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401



Environment Testing
America



310-304420 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>4-17-25</u>	TIME <u>0905</u>	Received By: <u>CRC</u>
Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☒ Yes ☐ No If yes: Cooler ID _____			
Multiple Coolers? ☐ Yes ☒ No If yes: Cooler # _____ of _____			
Cooler Custody Seals Present? ☒ Yes ☐ No If yes: Cooler custody seals intact? ☒ Yes ☐ No			
Sample Custody Seals Present? ☐ Yes ☒ No If yes: Sample custody seals intact? ☐ Yes ☐ No			
Trip Blank Present? ☐ Yes ☒ No If yes: Which VOA samples are in cooler? ↓			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>AA</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.2</u>		Corrected Temp (°C): <u>0.2</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Environment Testing
America

Ver 01/16/2019

Table 1 Sampling Points and Parameters - State Sampling Program
Groundwater Monitoring - Lansing Generating CCR Landfill
SCS Engineers Project #25224070

Parameter (2,3)	MW-1 (1)	MW-2 (1)	MW-3 (1)	MW-6	MW-11R	MW-12	MW-12P (5)	MW-13	MW-14	MW-15 (5)	MW-16	MW-18	MW-19	MW-22	MW-22P	TW-17 (5)	TW-18 (5)	TW-19 (5)	Field Blank	SW-1 Cut "X" in curb on S side of bridge at entrance road, at approx. center of bridge	SW-2 Cut "X" in downstream headwall of RCB culvert (near TW- 17/18/19)	SW-3 Cut "X" in NW side of bridge deck to mobile home court, ~9' from W end of bridge	SW-4 Ash pond catwalk cut "X" on top of kick rail at east edge of catwalk	SW-5 Outfall piling water level point, cut "X" in top of sheet pile wall	TOTAL
Arsenic, total (unfiltered)				X			X												X						
Barium, total (unfiltered)				X			X												X						
Boron, total (unfiltered)				X			X												X						
Calcium (4), total (unfiltered)				X			X												X						
Cobalt, total (unfiltered)				X			X												X						
Copper, total (unfiltered)				X			X												X						
Iron, total (unfiltered)				X			X												X						
Magnesium, total (unfiltered)				X			X												X						
Manganese, total (unfiltered)				X			X												X						
Nickel (4), total (unfiltered)				X			X												X						
Potassium (4), total (unfiltered)				X			X												X						
Selenium, total (unfiltered)				X			X												X						
Sodium (4), total (unfiltered)				X			X												X						
Strontium (4), total (unfiltered)				X			X												X						
Alkalinity (total) (4)				X			X												X						
Chloride (total)				X			X												X						
Sulfate (total)				X			X												X						
Field Parameters																									
pH				X			X																		
Conductance				X			X																		
Temperature				X			X																		
Groundwater Elevation				X			X																		
Well Depth (wells with no dedicated pump)																									
Turbidity, Field				X			X																		
Color, Field				X			X																		
Odor, Field				X			X																		
Dissolved Oxygen				X			X																		
Redox Potential				X			X																		
Surface Water Elevation																									

Notes:

(1): Monitoring at MW 1, MW 2, and MW-3 is not required by IDNR, but they have historically been included for groundwater elevation measurements only

(2): Metals samples are to be UNFILTERED.

(3): Beryllium, Lead, and Zinc were removed from the annual sampling plan in Permit Amendment #1, dated 11/6/2014.

(4): Alkalinity, calcium, nickel, potassium, sodium, and strontium were added to the annual sampling plan in Permit Amendment #1, dated 11/6/2014. These parameters had not previously been included in regular annual sampling events, but had been included in the 2013-2014 Groundwater Assessment sampling

(5): MW-12P, MW-15, TW-17, TW-18, and TW-19 were added to the annual sampling plan in Permit Amendment #1, dated 11/6/2014.

I:\25223070.00\Data and Calculations\Field Work Requests\Lansing_Sampling_Points_and_Parameters_State.xls|Sheet1

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-304420-1

Login Number: 304420

List Number: 1

Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Groundwater Monitoring Results - Field Parameters
Lansing Generating Station / SCS Engineers Project #25225070.00
April 2025

Sample	Sample Date	Groundwater Elevation (ft amsl)	Temperature (Deg C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity (NTU)
MW-6	4/16/2025 1440	664.43	10.0	7.19	0.06	58.8	86.5	4.88
MW-12P	4/16/2025 1215	649.73	10.6	7.09	5.24	828.0	133.5	4.81

Abbreviations:

ft amsl = feet above mean sea level
µmhos/cm = micromhos per centimeter

mg/L = milligrams per liter
mV = millivolts

ORP = Oxidation Reduction (REDOX)
NTU = Nephelometric Turbidity Units

Created by: NDK
Last revision by: RM
Checked by: BLJ

Date: 4/20/2021
Date: 4/24/2025
Date: 4/24/2025

C:\Users\FQT6\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\600TOIAS\[April 2025_Lansing_State_Field_310-304420-1.xlsx]Data



Appendix C

Summary of Groundwater Chemistry – Pre-2019

Table 3. Historical Groundwater Analytical Results Summary
Alliant-Lansing CCR Landfill / SCS Engineers Project #25216070.18
(Results are in µg/L, unless otherwise noted)

Sample	Date	DO, Field (mg/L)	Redox, Field (mV)	pH, Field (SU)	Temp., Field (deg C)	Specific Conduc- tance, Field (µS/cm)	Alkalinity, Total As CaCO3 (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Arsenic (µg/L)	Barium (µg/L)	Boron (µg/L)	Calcium (mg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Magnesium (mg/L)	Manganese (µg/L)	Nickel (µg/L)	Potassium (mg/L)	Selenium (µg/L)	Sodium (mg/L)	Strontium (µg/L)
MW3	5/11/2001	NA	NA	NA	NA	NA	NA	<5.0	75	<1.8	45	NA	NA	<3.6	<13	<33	39	9.4	NA	NA	<1.5	NA	NA
MW4	5/11/2001	NA	NA	NA	NA	NA	NA	<5.0	44	<1.8	32	NA	NA	<3.6	<13	<33	37	2.1	NA	NA	<1.5	NA	NA
	3/8/2002	NA	NA	NA	NA	NA	NA	<5.0	43	<0.88	39	NA	NA	<11	<9.1	<22	39	2.3	NA	NA	<0.73	NA	NA
	2/19/2004	NA	NA	NA	NA	NA	NA	<5.0 D	36	<3.5	33	NA	NA	7.4	19	<16	36	3.6	NA	NA	<4.3	NA	NA
	5/26/2004	NA	NA	NA	NA	NA	NA	5.7	51	3.3	27	NA	NA	<6.3	<18	<16	37	<0.96	NA	NA	<3.2	NA	NA
	8/23/2004	NA	NA	NA	NA	NA	NA	5.4	49	<0.79	37	NA	NA	<6.3	<18	<16	38	<0.96	NA	NA	<3.2	NA	NA
	11/18/2004	NA	NA	NA	NA	NA	NA	<5.0	43	<0.79	36	NA	NA	<6.3	<18	<16	36	<0.96	NA	NA	<3.2	NA	NA
	5/5/2005	NA	NA	NA	NA	NA	NA	<5.0	50	<0.79	40	NA	NA	<6.3	<18	<16	38	2.5 J	NA	NA	<3.2	NA	NA
	5/19/2006	NA	NA	NA	NA	NA	NA	<10	48	2.9	38	NA	NA	<6.3	<18	<16	36	<0.96	NA	NA	<3.2	NA	NA
	5/30/2007	NA	NA	NA	NA	NA	NA	4.6	130	<1	40	NA	NA	<6.3	<18	<16	37	2.0 J	NA	NA	<3.2	NA	NA
	4/16/2008	NA	NA	NA	NA	NA	NA	7.4	54	<0.43	44	NA	NA	<6.3	<18	<16	40	2.2 J	NA	NA	<1.44	NA	NA
	4/3/2009	NA	NA	NA	NA	NA	NA	4.9	44	0.27 J	44	NA	NA	0.17 J	2.0 B	160 J	39	0.98	NA	NA	1.1 B	NA	NA
	4/21/2010	NA	NA	7.47	13.9	647	NA	5.49	39.1	<1.0	39.3	<100	NA	3.97 J	<20	<100	39.2	<10	NA	NA	<5.0	NA	NA
	5/4/2011	NA	NA	7.31	11.2	648	NA	6.98	44.8	<1.0	43.9	<100	NA	<1.55	<20	<100	42.7	<10	NA	NA	<5.0	NA	NA
	5/4/2011(Dup)	NA	NA	7.31	11.2	648	NA	6.40	45.7	<2.0 RL	43.2	<100	NA	<1.55	<20	<100	42.2	<10	NA	NA	<5.0	NA	NA
	4/25/2012	NA	NA	7.36	11.9	649	NA	5.12	40	<1.0	45.2	<100	NA	<1.55	<20	<100	42.6	<10	NA	NA	<5.0	NA	NA
	4/2/2013	NA	NA	7.74	11.6	583	287 HI	5.9	50.2	<1.0	48	<100	71.0	<5.0	<10	<50	41.5	6.9	<5.0	1.1	2.4	6.0	76
	7/2/2013	NA	NA	7.33	11.4	736	289	6.1	43.2	<1.0	45	140	71.7	<5.0	<10	<50	41.2	<5.0	<5.0	1.2	2.5	7.2	87
	4/29/2014	5.27	110	7.33	10.9	619	332	6.4	44.5	0.62 J	46	61 J	73.0	<0.79	3.5 J	<24	37.6	<2.5	<0.95	0.66	1.5	5.3	86
	5/29/2014	6.48	111	7.6	13.0	480	284	6.2	39.3	<0.18	44	<50	76.2	<0.79	<0.85	<24	40.3	<2.5	<0.95	1.2	0.57 J	5.1	78
	4/21/2015	NA	NA	7.39	10.6	566	331	6.3	40.9	<0.25	45	36 J	75.1	<0.10	1.3 J	<9.0	40.8	2.6 J	1.8 J	1.1	0.71 J	4.7	80
	4/28/2016	7.94	263.5	7.62	10.0	442.8	280	6.3	38.1	0.30 J	44.5	<50.0	73.7 MI	<0.50	0.37 JB	177	40.3	3.3	<0.27	1.04	0.76 J	4.5	71.9 N2
	4/20/2017	9.5	205	7.45	10.0	636	286	5.5	49.6	0.33 J	49.9	134	76.4 MI	0.15 JB	0.35 JB	161 B	43	8.3	0.40 JB	1.29	2.0	5.94	90.5 N2
MW5	3/8/2002	NA	NA	NA	NA	NA	NA	<5.0	45	<0.88	29	NA	NA	<11	<9.1	<22	39	2.5	NA	NA	<0.73	NA	NA
	2/19/2004	NA	NA	NA	NA	NA	NA	<5.0 D	34	<3.5	32	NA	NA	<6.3	18	<16	36	3.8	NA	NA	<4.3	NA	NA
	5/26/2004	NA	NA	NA	NA	NA	NA	<5.0 D	43	4.7	27	NA	NA	<6.3	<18	<16	36	<0.96	NA	NA	<3.2	NA	NA
	8/23/2004	NA	NA	NA	NA	NA	NA	5.4	45	0.92	36	NA	NA	<6.3	<18	<16	38	<0.96	NA	NA	<3.2	NA	NA
	11/18/2004	NA	NA	NA	NA	NA	NA	<5.0	40	<0.79	35	NA	NA	<6.3	<18	<16	36	<0.96	NA	NA	<3.2	NA	NA
	5/5/2005	NA	NA	NA	NA	NA	NA	5.7	49	<0.79	37	NA	NA	<6.3	<18	<16	38	1.5 J	NA	NA	<3.2	NA	NA
	5/19/2006	NA	NA	NA	NA	NA	NA	<10.0	40	<0.79	38	NA	NA	<6.3	<18	<16	36	<0.96	NA	NA	<3.2	NA	NA
	5/30/2007	NA	NA	NA	NA	NA	NA	4.3	110	<1	40	NA	NA	<6.3	<18	<16	37	2.3 J	NA	NA	<3.2	NA	NA
	4/16/2008	NA	NA	NA	NA	NA	NA	5.3	40	<0.43	42	NA	NA	<6.3	<18	<16	39	0.98 J	NA	NA	<1.44	NA	NA
	04/16/08 Dup	NA	NA	NA	NA	NA	NA	5.4	40	<0.43	43	NA	NA	<6.3	<18	<16	38	4.1	NA	NA	<1.44	NA	NA
	4/3/2009	NA	NA	NA	NA	NA	NA	5.3	41	0.22 J	44	NA	NA	0.15 J	0.5 B	150 J	38	0.65	NA	NA	0.64 B	NA	NA
	4/21/2010	NA	NA	7.43	13.7	636	NA	5.34	35.6	<1.0	38.5	<100	NA	<1.55 J	<20	<100	39.1	<10	NA	NA	<5.0	NA	NA
	4/21/2010 (Dup)	NA	NA	NA	NA	NA	NA	5.51	37.6	<1.0	38.7	<100	NA	2.09 J	<20	<100	39.4	<10.0	NA	NA	<5.0	NA	NA
	5/4/2011	NA	NA	7.31	10.9	635	NA	6.79	40.2	<1.0	43.1	<100	NA	<1.55	<20	<100	41.6	<10	NA	NA	<5.0	NA	NA
	4/25/2012	NA	NA	7.32	11.1	648	NA	<5.0 RL1	37.1	<1.0	45	<100	NA	3.82 J	<20	<100	42.6	<10	NA	NA	<5.0	NA	NA

Table 3. Historical Groundwater Analytical Results Summary
Alliant-Lansing CCR Landfill / SCS Engineers Project #25216070.18
(Results are in µg/L, unless otherwise noted)

Sample	Date	DO, Field (mg/L)	Redox, Field (mV)	pH, Field (SU)	Temp., Field (deg C)	Specific Conduc- tance, Field (µS/cm)	Alkalinity, Total As CaCO3 (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Arsenic (µg/L)	Barium (µg/L)	Boron (µg/L)	Calcium (mg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Magnesium (mg/L)	Manganese (µg/L)	Nickel (µg/L)	Potassium (mg/L)	Selenium (µg/L)	Sodium (mg/L)	Strontium (µg/L)
MW5 (continued)	4/2/2013	NA	NA	7.58	11.8	576	276 ^{H1}	5.9	40.3	<1.0	47	<100	70.7	<5.0	<10	<50	40.8	5.2	<5.0	1.2	1.2	5.2	73
	7/2/2013	NA	NA	7.32	11.3	687	296	7.3	51.9	<1.0	47	140	75	<5.0	<10	<50	42.0	<5.0	<5.0	1.5	2.2	6.7	79
	4/29/2014	5.31	136	7.27	10.8	615	339	6.3	39.4	0.65 ^J	46	<50	73.3 ^{M1}	<0.79	3.5 ^J	<24	38.1	<2.5	<0.95	0.71	0.88 ^J	5.0	91
	5/29/2014	5.62	113	7.6	12.9	480	289	6.2	37.4	1.3	42	<50	74.1	<0.79	17	<24	39.4	<2.5	1.3 ^J	2.7	0.7 ^J	5.0	75
	4/21/2015	NA	NA	7.40	10.9	553	326	6.2	40.1	<0.25	44	34 ^J	74.9	<0.10	1.6 ^J	10 ^J	40.6	<2.4	0.86 ^J	1.1	0.73 ^J	5.7	75
	4/28/2016	8.13	282.2	7.59	10	620.7	286	6.4	37.5	0.26 ^J	44.5	<50.0	74	<0.50	0.32 ^{JB}	75.4	40.3	4.4	<0.27	1.03	0.69 ^J	4.46	68.4 ^{N2}
	4/20/2017	8.8	174	7.44	10	630	299	5.5	44.4	0.26 ^J	50.5	80.7 ^J	73.2	0.094 ^{JB}	0.40 ^{JB}	182	41.3	8.1	0.52 ^{JB}	1.11	1.2	5.52	79.1 ^{N2}
MW6	5/11/2001	NA	NA	NA	NA	NA	NA	<5.0	29	<1.8	33	NA	NA	<3.6	<13	<33	35	4.6	NA	NA	<1.5	NA	NA
	3/8/2002	NA	NA	NA	NA	NA	NA	<5.0	33	<0.88	38	NA	NA	<11	<9.1	<22	38	2.5	NA	NA	<0.73	NA	NA
	2/19/2004	NA	NA	NA	NA	NA	NA	<5.0 ^D	25	<3.5	33	NA	NA	Z	18	<16	35	3.6	NA	NA	<4.3	NA	NA
	5/26/2004	NA	NA	NA	NA	NA	NA	6.5	30	3.9	24	NA	NA	<6.3	<18	<16	34	<0.96	NA	NA	<3.4	NA	NA
	8/23/2004	NA	NA	NA	NA	NA	NA	7.0	31	<0.79	36	NA	NA	<6.3	<18	<16	36	<0.96	NA	NA	<3.2	NA	NA
	11/18/2004	NA	NA	NA	NA	NA	NA	5.1	27	<0.79	35	NA	NA	<6.3	<18	<16	35	<0.96	NA	NA	<3.2	NA	NA
	5/5/2005	NA	NA	NA	NA	NA	NA	9.0	38	<0.79	39	NA	NA	<6.3	<18	<16	37	1.6 ^J	NA	NA	<3.2	NA	NA
	5/19/2006	NA	NA	NA	NA	NA	NA	<10	28 ^J	0.93 ^J	37	NA	NA	<6.3	<18	<16	35	<0.96	NA	NA	<3.2	NA	NA
	5/30/2007	NA	NA	NA	NA	NA	NA	4.3	190	<1.0	41	NA	NA	<6.3	<18	<16	36	1.6 ^J	NA	NA	<3.2	NA	NA
	4/16/2008	NA	NA	NA	NA	NA	NA	6.0	20	<0.43	41	NA	NA	<6.3	<18	<16	36	<0.96	NA	NA	<1.44	NA	NA
	4/3/2009 Dup	NA	NA	NA	NA	NA	NA	5.9	24	0.29 ^J	46	NA	NA	<0.12	1.2 ^B	150 ^J	37	0.77	NA	NA	0.43	NA	NA
	4/3/2009	NA	NA	NA	NA	NA	NA	5.9	24	0.29 ^J	46	NA	NA	0.15 ^J	0.9 ^B	<150	37	0.83	NA	NA	0.45 ^B	NA	NA
	4/21/2010	NA	NA	7.49	12.3	605	NA	5.89	24.8	<1.0	39.4	<100	NA	2.67 ^J	<20	<100	36.6	<10	NA	NA	<5.0	NA	NA
	5/4/2011	NA	NA	7.42	10.3	640	NA	6.72	24.4	<1.0	43.9	<100	NA	<1.55	<20	<100	39.2	<10	NA	NA	<5.0	NA	NA
	4/25/2012	NA	NA	7.38	13.2	602	NA	5.35	21.1	<1.0	44	<100	NA	<1.55	<20	<100	40.5	<10	NA	NA	<5.0	NA	NA
	4/2/2013	NA	NA	7.05	11.8	579	314	8.2	23.4	<1.0	37	<100	66.7	<5.0	<10	<50	39.6	1.69	<5.0	1.2	<1.0	5.2	65
	7/2/2013	NA	NA	7.30	11.1	628	298	8.2	24.8	<1.0	43	<100	66.1	<5.0	<10	<50	38.1	1.24	<5.0	1.1	<1.0	4.5	61
	4/29/2014	5.61	-28	7.11	11.3	583	327	8.0	24.2	0.55 ^J	47	<50	67.4	<0.79	3.5 ^J	<24	35.6	<2.5	<0.95	0.64	0.6 ^J	4.8	83
	4/20/2015	NA	NA	7.22	11.0	544	311	6.6	23.8	<0.25	45 ^{D9}	23 ^J	70.6 ^{D9}	<0.10	2.2 ^J	12 ^J	38.4 ^{D9}	<2.4	2.7 ^J	1.1	0.40 ^J	4.5 ^{D9}	67 ^{D9}
	4/29/2016	7.7	243.7	7.64	9.7	596.2	377	7.6	24	0.26 ^J	44.2	<50.0	68.5	<0.50	0.17 ^{JB}	<12.8	37.6	1.5 ^B	<0.27	1.01	0.46 ^J	4.61	60.7 ^{N2}
	4/19/2017	7.1	321	7.48	10.3	589	293	6.3	25.4	0.27 ^J	45.7	32.0 ^{JB}	67.2	0.047 ^{JB}	0.21 ^{JB}	27.1 ^{JB}	37.9	1.88 ^B	0.50 ^{JB}	1.02	0.46 ^J	4.87	61.2 ^{N2}
	4/16/2018	10.7	290	7.4	9.2	617	311	6.7	26.4	0.19 ^J	44.9	23.8 ^J	67.5	<0.014	0.25 ^{JB}	<9.6	36.8	0.28 ^J	0.30 ^J	1.10	0.24 ^J	4.65	63.8 ^{N2}
	Avg prev 2 yrs	--	--	7.56	10.0	593	335	--	--	--	--	32.0	67.9	--	--	--	37.8	--	0.50	1.02	--	4.7	--
	Result > 2-yr avg?			N	N	Y	N					N	N				N		N	Y		N	
MW11	3/8/2002	NA	NA	NA	NA	NA	NA	15	380	23	470	NA	NA	<11	<9.1	28,000	62	1,900	NA	NA	0.87	NA	NA
	5/26/2004	NA	NA	NA	NA	NA	NA	17	160	16	180	NA	NA	17	<18	11,000	53	9,500	NA	NA	<3.2	NA	NA
	8/23/2004	NA	NA	NA	NA	NA	NA	16	190	3.8	130	NA	NA	18	<18	410	68	10,000	NA	NA	<3.2	NA	NA
MW11R	4/21/2010	NA	NA	6.84	12.4	1,565	NA	31.6	16.7	2.44	367	188	NA	9.08 ^J	<20	1,690	88.2	3,580	NA	NA	<5.0	NA	NA
	5/4/2011	NA	NA	6.91	13.3	1,787	NA	16.1	<2.00 ^{RL}	11.6	410	210	NA	5.24 ^J	23.6	27,900	109	4,950	NA	NA	<5.0	NA	NA
	4/25/2012	NA	NA	6.73	12.6	1,844	NA	12.3	<5.00	13.6	518	272	NA	7.55 ^J	<20	55,600	119	4,560	NA	NA	<5.0	NA	NA
	4/25/2012 (Dup)	NA	NA	6.73	12.6	1,844	NA	12.6	<5.00	15.7	512	272	NA	7.3 ^J	<20	56,500	120	4,560	NA	NA	<5.0	NA	NA

Table 3. Historical Groundwater Analytical Results Summary
Alliant-Lansing CCR Landfill / SCS Engineers Project #25216070.18
(Results are in µg/L, unless otherwise noted)

Sample	Date	DO, Field (mg/L)	Redox, Field (mV)	pH, Field (SU)	Temp., Field (deg C)	Specific Conduc- tance, Field (µS/cm)	Alkalinity, Total As CaCO3 (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Arsenic (µg/L)	Barium (µg/L)	Boron (µg/L)	Calcium (mg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Magnesium (mg/L)	Manganese (µg/L)	Nickel (µg/L)	Potassium (mg/L)	Selenium (µg/L)	Sodium (mg/L)	Strontium (µg/L)
MW11R (continued)	4/2/2013	NA	NA	7.15	11.8	1,370	882	12.5	<1.0	<u>25</u>	490	220	180	<u>7.0</u>	<10	<u>52,800</u>	110	<u>4,200</u>	<5.0	7.6	<1.0	<u>24.6</u>	500
	7/2/2013	NA	NA	7.00	11.2	1,688	1,020	12.5	<1.0	<u>23</u>	490	230	181	<u>7.5</u>	<10	<u>55,200</u>	110	<u>3,700</u>	6.8	7.9	<1.0	<u>24.5</u>	480
	4/30/2014	0.45	-96	7.08	10.5	1,611	997	12.7	0.52 J	<u>27</u>	460	210	174	<u>7.1</u>	1.5 J	<u>57,100</u>	101	<u>3,200</u>	3.3 J	6.0	0.42 J	<u>26.1</u>	470
	5/29/2014	0.66	-103	7.6	12.1	890	893	12.6	0.48 J	<u>27</u>	470	190	184	<u>8.1</u>	1.4 J	<u>58,500</u>	107	<u>3,200</u>	5.4	7.3	0.35 J	<u>25.2</u>	490
	4/21/2015	NA	NA	7.09	10.2	1,303	1,040	12.3	0.38 J	<u>23</u>	430	210	179 MI	<u>5.3</u>	1.1 J	<u>56,000</u>	111	<u>3,200</u>	4.8 J	5.3	0.41 J	<u>27.4</u>	440
	4/28/2016	0.07	-146.9	7.15	10.3	1,766	910	13.4	0.38 J	<u>33.4</u>	503	231	182	<u>8.2</u>	0.94 JB	<u>59,000</u>	113	<u>3,040</u>	6.7	6.87	0.63 J	<u>23.1</u>	460 N2
	4/20/2017	0	-166	6.95	10.6	1,863	975	13.5	<1.0	<u>30.4</u>	562	296	186	<u>8.0</u>	5.8	<u>65,800</u>	117	<u>2,940</u>	7.7	7.72	0.59 J	<u>24.7</u>	492 N2
	4/17/2018	0.3	-153	6.96	10.3	1,769	1020	13.3	0.39 J	<u>28.5</u>	485	236	170 MI	<u>5.9</u>	3.4	<u>54,400</u>	103 MI	<u>2,630</u>	4.8	6.88	0.44 J	<u>25.9</u>	473 N2
	Avg prev 2 yrs	--	--	7.05	10.5	1815	943	--	--	--	--	264	184	--	--	--	115	--	7.2	7.30	--	23.9	--
	Result > 2-yr avg?			N	N	N	Y					N	N				N		N	N		Y	
MW12	4/2/2013	NA	NA	7.43	12.0	875	422	6.9	125	<u>16</u>	220	1,300	77.7	<5.0	<10	<u>2,200</u>	41.9	<u>1,700</u>	5.4	3.1	<1.0	<u>103</u>	100
	7/2/2013	NA	NA	7.24	11.3	937	440	6.9	132	<u>17</u>	230	1,200	77.7	<5.0	<10	<u>3,400</u>	41.6	<u>1,400</u>	7.9	2.9	<1.0	<u>99.1</u>	89
	4/30/2014	0.69	-85	7.22	11.0	1,002	485	5.8	160	<u>16</u>	260	1,300	77.6	1.9 J	3.1 J	<u>4,200</u>	38.3	<u>1,300</u>	4.2 J	2.2	<0.23	<u>108</u>	89
	5/29/2014	0.58	-85	7.4	13.1	730	421	6.0	145	<u>14</u>	280	1,300	86.1	2.1 J	1.3 J	<u>6,300</u>	41.3	<u>1900</u>	5.3	4.1	<0.23	<u>96.3</u>	120
	4/21/2015	NA	NA	7.22	11.3	889	452	4.9	159	<u>13</u>	260	1,200	81.6	1.8	1.4 J	<u>6,600</u>	39.2	<u>1,500</u>	4.6 J	3.1	<0.12	<u>97.2</u>	97
	4/28/2016	0.10	-130.3	7.47	10.7	1,054	409	5.3	155	<u>24.2</u>	251	1,270	77	1.6	0.97 JB	<u>8,320</u>	38.4	<u>1,080</u>	4.7	2.67	<0.18	<u>101</u>	83.9 N2
	4/20/2017	0.50	-152	7.18	11.2	976	414	5.9	146	<u>19.4</u>	259	1,420	79.5	2.2	1.7	<u>11,500</u>	41.6	<u>1,360</u>	5.1	3.28	0.13 J	<u>101</u>	94.2 N2
	4/17/2018	0.1	-148	7.2	10.9	1,052	407	4.8	170	<u>20.6</u>	251	1,300	73.7	1.9	5.7	<u>9,190</u>	36.6	<u>1,080</u>	5.4	3.06	<0.086	<u>103</u>	90.6 N2
	Avg prev 2 yrs	--	--	7.33	11.0	1015	412	--	--	--	--	1235	78	--	--	--	40.0	--	4.9	3.0	--	101	--
	Result > 2-yr avg?			N	N	Y	N					Y	N				N		Y	Y		Y	
MW12P	4/30/2014	0.56	79	7.28	10.9	947	467	29.3	126	1.0	94	1,400	120	1.6 J	2.5 J	<24	52.2	<u>590</u>	2.7 J	1.3	2.2	<u>23.5</u>	120
	5/29/2014	0.75	127	7.6	13.0	730	548	23.9	161	0.45 J	100	1,800	130	<0.79	<0.85	<24	55.1	<u>430</u>	3.7 J	1.9	2.4	<u>31.7</u>	120
	4/21/2015	NA	NA	7.05	10.5	928	478	36.2	145	0.34 J	96	1,600	141	0.37 J	1.6 J	12 J	61.1	41	1.2 J	1.7	2.5	<u>22.9</u>	130
	4/28/2016	4.82	290.1	7.25	10.6	1,025	391	49.7	84.1	0.44 J	82.2	1,240	123	0.7 J	0.58 JB	250	53.8	13.7	0.74 J	1.57	1.7	19.9	104 N2
	4/20/2017	2.9	183	7.19	10.8	1,028	354	11.5	214	0.88 J	102	2,750	129	1.3	2.3	<u>2,370</u>	56.5	<u>96.9</u>	2.6	2.36	4.1	<u>34.8</u>	107 N2
	4/17/2018	1.1	264	7.13	10.6	1,295	384	9.1	<u>378</u>	0.51 J	103	3,510	143	0.96 J	1.7	<u>1,270</u>	58.8	<u>84.8</u>	1.7	2.56	3.7	<u>54.5</u>	130 N2
	Avg prev 2 yrs	--	--	7.22	10.70	1027	373	--	--	--	--	1995	126	--	--	--	55.2	--	1.7	2.0	--	27.4	--
	Result > 2-yr avg?			N	N	Y	Y					Y	Y				Y		Y	Y		Y	
MW13	4/2/2013	NA	NA	7.87	11.1	363	95	22.1	60.2	1.1	46	1,200	46.0	<5.0	<10	<50	7.8	<u>21</u>	<5.0	3.7	2.6	16.6	800
	7/2/2013	NA	NA	7.33	11.2	853	273	12.1	79.1	<1.0	64	1,600	78.3	<5.0	<10	<50	29.6	6.5	<5.0	2.1	4.5	16.2	610
	7/2/2013 Dup	NA	NA	NA	NA	NA	268	12.7	78.1	<1.0	64	1,500	76.9	<5.0	<10	<50	29.4	7.3	<5.0	2.1	4.4	16.3	610
	4/30/2014	1.96	73	7.56	8.1	504	132	20.7	73.0	1.6	36	1,300	41.6	<0.79	2.5 J	52	7.5	<u>17</u>	<0.95	2.5	1.7	18.6	730
	5/29/2014	2.46	145	8.2	9.3	370	256	18.5	85.2	0.65 J	49	1,200	74.2	<0.79	<0.85	<24	15.8	3.3 J	<0.95	2.8	6.5	17.8	1,200
	4/20/2015	NA	NA	7.77	8.7	348	151	17.9	62.9	1.1	28	1,200	39.5	<0.10	1.3 J	<9.0	5.7	15	1.4 J	3.1	1.3	15.8	970
	4/28/2016	1.08	154.9	<u>9.05</u>	10.1	350.3	60.2	19	81.1	3.5	46.4	1,410	47	1.9	5.1	<u>3,760</u>	7.49	<u>70.4</u>	4.8	4.41	1.5	18.7	975 N2
	4/20/2017	6.1	320	7.23	9	758	355	5.7	71.5	1.5	83.8	1,160	106	<u>2.9</u>	6.6	<u>5,100</u>	47.6	<u>257</u>	6.4	2.04	3.6	16.7	268 N2
	4/17/2018	2.8	9	7.38	7.7	621	154	18.7	114	0.89 J	50.5	922	70.8	<u>1.7</u>	3.6	<u>2,010</u>	22.5	<u>160</u>	3.2	2.04	3.6	12.8	897 N2
	Avg prev 2 yrs	--	--	8.14	9.55	554	208	--	--	--	--	1285	77	--	--	--	27.5	--	5.6	3.2	--	17.7	--
	Result > 2-yr avg?			N	N	Y	N					N	N				N		N	N		N	

Table 3. Historical Groundwater Analytical Results Summary
Alliant-Lansing CCR Landfill / SCS Engineers Project #25216070.18
(Results are in µg/L, unless otherwise noted)

Sample	Date	DO, Field (mg/L)	Redox, Field (mV)	pH, Field (SU)	Temp., Field (deg C)	Specific Conduc- tance, Field (µS/cm)	Alkalinity, Total As CaCO3 (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Arsenic (µg/L)	Barium (µg/L)	Boron (µg/L)	Calcium (mg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Magnesium (mg/L)	Manganese (µg/L)	Nickel (µg/L)	Potassium (mg/L)	Selenium (µg/L)	Sodium (mg/L)	Strontium (µg/L)
MW14	4/2/2013	NA	NA	7.65	10.6	536	312	9.0	23.5	<1.0	43	<100	65.7	<5.0	<10	<50	37.6	<5.0	<5.0	1.2	<1.0	4.1	67
	7/2/2013	NA	NA	7.56	10.8	593	283	8.2	22.1	<1.0	39	<100	63.8	<5.0	<10	<50	36.8	<5.0	<5.0	1.2	<1.0	3.9	60
	4/30/2014	4.65	141	7.59	9.0	550	336	6.9	20.8	0.54 J	41	<50	65.3	<0.79	2.3 J	310	33.0	17	<0.95	0.69	0.63 J	3.4	65
	5/29/2014	4.41	132	7.8	13.2	430	320	6.6	20.0	<0.18	38	<50	69.0	<0.79	<0.85	<24	35.6	<2.5	<0.95	1.2	<0.23	3.5	63
	4/20/2015	NA	NA	7.57	9.5	517	315	6.3	20.2	<0.25	37	17 J	65.5	<0.10	1.3 J	9.3 J	34.8	<2.4	1.4 J	1.0	0.44 J	3.3	61
	4/29/2016	5.35	227.9	7.73	9.9	563.1	261	6.1	21.5	0.16 J	38.2	<50.0	66.7	<0.50	0.42 JB	226	35.2	12.6	0.42 J	1.06	0.48 J	3.14	58.3 N2
	4/20/2017	8.1	307	7.58	9.9	586	284	8.0	25.7	0.68 J	49.8	57.3 J	75.8	1.4	2.3	2,040	41.3	71.7	2.6	1.52	0.54 J	5.22	63.8 N2
	4/17/2018	5.9	254	7.46	9.6	627	301	10.3	30.3	0.16 J	40.6	75.0 J	69.1	0.39 J	0.51 JB	285	36.6	25.8	0.67 J	1.21	0.34 J	6.34	61.6 N2
	Avg prev 2 yrs	--	--	7.66	9.90	575	273	--	--	--	--	53.7	71.3	--	--	--	38.3	--	1.5	1.3	--	4.18	--
	Result > 2-yr avg?			N	N	Y	Y					Y	N				N		N	N		Y	
MW15	4/30/2014	2.69	163	7.66	7.3	498	237	22.9	40.8	0.95 J	170	250	55.3	0.91 J	3.7 J	200	17.6	130	0.97 J	2.1	2.8	16.5	480
	5/29/2014	5.24	149	7.7	7.8	370	187	19.2	42.4	0.82 J	150	330	51.5	<0.79	<0.85	<24	16.5	130	0.98 J	2.4	5.2	16.4	440
	4/20/2015	NA	NA	7.83	8.2	416	198	19.9	32.6	0.79 J	160	250	55.6	<0.10	1.3 J	22 J	15.8	71	1.1 J	3.1	4.7	12.8	480
	4/29/2016	6.38	225.4	7.88	6.5	442.8	149	16.8	37.7	0.39 J	111	97.1 J	50.1	<0.50	0.96 JB	64.8	17.5	11.1	0.44 J	1.84	1.8	13.3	419 N2
	4/20/2017	6.8	319	7.65	6.2	492	197	13.9	39.8	0.42 J	139	116	61.6	0.16 JB	0.87 JB	94.5 B	20.2	82.1	0.62 JB	1.58	4.5	11	454 N2
	4/17/2018	5.7	207	7.54	5.3	491	190	22.9	34.6	0.14 J	110	86.5 J	53.8	0.066 JB	0.70 JB	13.4 J	20.4	9.1	0.46 J	1.50	1.1	13.4	364 N2
	Avg prev 2 yrs	--	--	7.77	6.35	467	173	--	--	--	--	107	56	--	--	--	18.9	--	0.5	1.7	--	12.2	--
	Result > 2-yr avg?			N	N	Y	Y					N	N				Y		N	N		Y	
TW17	4/30/2014	2.95	98	7.48	8.7	645	364	14.7	44.0	0.87 J	55	180	74.4	1 J	2.6 J	180	38.2	150	2.10 J	0.47 J	0.84 J	15.5	80
	5/29/2014	4.74	153	7.3	8.7	510	324	14.6	41.2	0.25 J	43	150	78.4	<0.79	<0.85	<24	40.1	3.5 J	<0.95	1.1	0.67 J	12.6	73
TW18	4/30/2014	1.49	23	7.30	6.3	848	382	78.9	24.6	1.40	130	220	99.2	2.6 J	2.3 J	68	40.6	860	2.9 J	1.7	0.61 J	37.4	160
	5/29/2014	4.08	143	7.4	8.5	540	335	27.5	29.0	<0.18	48	66 J	82.7	<0.79	<0.85	<24	42.5	10	<0.95	1.3	0.96 J	8.6	78
	4/20/2015	NA	NA	7.08	7.1	778	458	99.3	21.6	0.47 J	120	260	114	2.0	1.9 J	230	47.0	920	4.5 J	2.1	0.39 J	48.0	170
	4/20/2017	8.1	287	7.23	7.4	772	354	41.6	15.5	1.2	73.6	97.6 J	88.4	0.44 J	0.84 JB	1,090	41.5	227	1.1 B	1.43	0.76 J	22.0	101 N2
	4/17/2018	2.9	280	7.17	6.5	751	353	36.9	22.7	2.1	88.4	71.2 J	82.0	1.4	2.2	3,980	40.3	897	3.1	1.59	0.51 J	18.4	85.6 N2
	Avg prev 2 yrs	--	--	7.16	7.25	775	406	--	--	--	--	--	101	--	--	--	44.3	--	--	1.8	--	35.0	--
	Result > 2-yr avg?			Y	N	N	N						N				N			N		N	
TW19	4/30/2014	0.23	-63	7.12	6.8	1165	381	163	7.9	4.6	340	110	106	2.6 J	2.8 J	5,500	35.4	1,600	4.2 J	2.5	<0.23	99.5	200
	5/29/2014	2.32	120	7.5	8.8	500	305	23.2	19.5	0.59 J	95	<50	76.4	<0.79	<0.85	33 J	40.1	660	1.9 J	1.2	<0.23	6.4	75
Field Blank	4/2/2013	NA	NA	NA	NA	NA	<20.0	<1.0	<1.0	<1.0	<10	<100	<100	<5.0	<10	<50	<50	<5.0	<5.0	<0.50	<1.0	<0.50	<10
	7/2/2013	NA	NA	NA	NA	NA	<20.0	<1.0	<1.0	<1.0	<10	<100	<100	<5.0	<10	<50	<50	<5.0	<5.0	<0.50	<1.0	<0.50	<10
	4/30/2014	NA	NA	NA	NA	NA	<1.9	<0.50	<0.056	<0.18	<0.61	<50	<7.8	<0.79	1.2 J	<24	<0.017	<2.5	<0.95	<0.048	<0.23	<0.25	<5
	5/29/2014	NA	NA	NA	NA	NA	<1.9	<0.50	<0.056	<0.18	<0.61	<50	<7.8	<0.79	<0.85	<24	<0.017	<2.5	<0.95	0.068 J	<0.23	<0.25	<5
	4/21/2015	NA	NA	NA	NA	NA	<2.0	<0.50	<0.24	<0.25	<0.52	<3.1	0.03 J	<0.10	<0.83	<9.0	<0.013	<2.4	<0.56	<0.059	<0.12	<0.25	<0.28
	4/29/2016	NA	NA	NA	NA	NA	6.6 J	<0.50	<0.25	<0.10	<0.14	<50.0	0.01 J	<0.50	<0.11	<12.8	<0.0158	<0.19	<0.27	<0.129	<0.18	<0.0207	0.15 J, N2
	4/20/2017	NA	NA	NA	NA	NA	7.3 J	<1.0	<1.0	<1.0	0.69 JB	<100	0.05 J	<1.0	0.21 JB	18.4 JB	<0.050	0.25 JB	0.26 JB	<0.500	<1.0	0.335 JB	0.19 JB, N2
	4/17/2018	NA	NA	NA	NA	NA	<4.9	<0.46	<0.24	<0.052	0.42 JB	<12.5	<0.054	<0.014	0.20 JB	<9.6	<14.0	0.13 J	0.28 J	<0.0793	<0.086	<0.157	<0.071

Table 3. Historical Groundwater Analytical Results Summary
Alliant-Lansing CCR Landfill / SCS Engineers Project #25216070.18
(Results are in µg/L, unless otherwise noted)

Sample	Date	DO, Field (mg/L)	Redox, Field (mV)	pH, Field (SU)	Temp., Field (deg C)	Specific Conduc- tance, Field (µS/cm)	Alkalinity, Total As CaCO3 (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Arsenic (µg/L)	Barium (µg/L)	Boron (µg/L)	Calcium (mg/L)	Cobalt (µg/L)	Copper (µg/L)	Iron (µg/L)	Magnesium (mg/L)	Manganese (µg/L)	Nickel (µg/L)	Potassium (mg/L)	Selenium (µg/L)	Sodium (mg/L)	Strontium (µg/L)
USEPA MCL (Health)		NE	NE	NE	NE	NE	NE	NE	NE	10	2,000	NE	NE	NE	NE	NE	NE	NE	NE	NE	50	NE	NE
USEPA SMCL (Aesthetic)		NE	NE	6.5-8.5	NE	NE	NE	250	250	NE	NE	NE	NE	NE	1,000	300	NE	NE	NE	NE	NE	NE	NE
USEPA Drinking Water Advisory (Health) ⁽²⁾		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	20	NE
USEPA Health Advisory Level (Lifetime) ⁽²⁾		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	6,000	NE	NE	NE	NE	NE	300	100	NE	50	NE	4,000
Iowa Statewide Standard for a Protected Groundwater Source ⁽²⁾		NE	NE	NE	NE	NE	NE	NE	NE	10	2,000	6,000	NA	2.8	1,300	NA	NA	300	100	NA	50	NA	4,000
Upgradient mean + 2 std dev ⁽¹⁾		NC	NC	7.71	NA	653	375	9.5	106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Upgradient mean - 2 std dev ⁽¹⁾		NA	NA	6.99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Abbreviations:
µg/L = micrograms per liter
mg/L = milligrams per liter
NC = Not Calculated due to limited background data

DUP = Duplicate sample
NA = Not Applicable
NE = No Standard Established

USEPA MCL = United States Environmental Protection Agency Maximum Contaminant Limit
USEPA SMCL = United States Environmental Protection Agency Secondary Maximum Contaminant Limit
mV = millivolts

Notes:
Historical results for Alkalinity(bicarbonate), aluminum, antimony, cadmium, chromium, lead, lithium, mercury, molybdenum, thallium, vanadium, and zinc are not included in this summary. These parameters are no longer monitored at the site. All historical data for these parameters were included in the 2017 Annual Water Quality Report.

(1) The calculated upgradient mean ±2 standard deviations is based on data reported at upgradient well MW-6. Where non-detects were included in the calculations, they were assigned a result equal to the detection limit. Duplicate results are not included in the calculations.

(2) Listed USEPA Drinking Water Advisory, USEPA Health Advisory Level, and Iowa Statewide Standard values are included as requested by IDNR in a letter dated November 14, 2013. Health Advisory Levels shown here are lifetime values for non-carcinogens.

(3) Average of last two years is calculated for parameters that do not have an MCL or HAL, if more than on value is available to calculate the average. Non-detect values were assumed equal to the detection limit for calculating the average.

Bold+underlined values meet or exceed USEPA MCL, USEPA SMCL, USEPA Drinking Water Advisory, USEPA Health Advisory Level, or DNR Statewide Standard.

Shade: values meet or exceed the upgradient mean ± 2 standard deviations.

Laboratory Notes/Qualifiers:
B = Analyte was detected in the associated Method Blank.
CL = The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
D = Diluted for analysis.
D9 = Dissolved result is greater than the total. Data is within laboratory control limits.
H1 = Analysis conducted outside the EPA method holding time.
J = Estimated value. Analyte detected at a level less than the reporting limit and greater than or equal to the Method Detection Limit. The user of this data should be aware that this data is of unknown quality.
M1 = Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2 = The lab does not hold TNI accreditation for this parameter.
RL1 = Reporting limit raised due to sample matrix effects.

Created by: TLC Date: 8/20/2013

Last revision by: MDB Date: 10/4/2018

Checked by: AJR Date: 10/4/2018

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Appendix D

Statistical Evaluation of Groundwater Monitoring Results

D1 Statistical Evaluation of Groundwater Monitoring Results

November 30, 2023
File No. 25223070.00

TECHNICAL MEMORANDUM

SUBJECT: Statistical Evaluation of Groundwater Monitoring Results
Lansing Power Station CCR Landfill, April 2023

PREPARED BY: Ryan Matzuk

CHECKED BY: Charles Hostetler 9/26/2023

STATISTICAL METHOD

The statistical analysis uses a prediction interval approach as recommended for detection monitoring in the March 2009 U.S. Environmental Protection Agency (U.S. EPA) Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities. For the prediction interval evaluation, interwell testing was selected based on the considerations outlined in Chapter 6 of the Unified Guidance. Monitoring well MW-6 is used as the background well. The statistical program used to calculate the interwell prediction interval is Sanitas™ (Version 9.6.37).

TIME SERIES PLOTS

Time series plots are prepared for the required monitoring parameters to show the concentration variations over time. Time series graphs are included in **Attachment D1**. For metals, the time series plots only show monitoring results since April 2016, when the monitoring program transitioned from dissolved metals to total metals analysis. For chloride, sulfate, and total alkalinity, which are not typically affected by filtering, older historical results for background well MW-6 are included in the time series plots and are used in the determination of background for the statistical evaluation.

OUTLIER ANALYSIS

An outlier analysis is performed for background monitoring results at upgradient well MW-6. A statistical outlier is a value that is extremely different from the other values in the data set. The Sanitas™ outlier tests identify data points that do not appear to fit the distribution of the rest of the data set and determine if they differ significantly from the rest of the data. The outlier analysis performed in Sanitas™ includes the following steps:

- 1) Run normality test (Shapiro Wilk/Francia).
- 2) If normally distributed, run U.S. EPA's 1989 Outlier Test to identify suspected outliers.
 - a) If number of background samples is less than or equal to 22, run Dixon's test for suspected outliers.
 - b) If number of background samples is more than 22, run Rosner's test for suspected outliers.



- 3) If not normally distributed, run Tukey's test for outliers.
- 4) Review data flagged as possible outliers to evaluate whether they should be removed from the background data set. Also review time series plots for possible outliers that were not picked up in the statistical evaluation (e.g., outlier test may not identify outliers when two values are similar to each other, but very different from all other data).

Results identified as statistical outliers are checked for possible lab instrument failure, field collection problems, or data entry errors; however, outliers may exist naturally in the data if there is an extremely wide inherent or temporal variability in the data. The Unified Guidance states that unless a likely error can be identified, the outlier should not be removed.

In the review of the interwell background data collected from MW-6 through the April 2023 sampling event, the following background values from MW-6 were identified as potential outliers and handled as described:

- **Chloride.** Three non-detect results from May 2001 to February 2004 and one from May 2006 were removed based on visual inspection of the data. These results included the first three rounds of samples from MW-6 and were inconsistent with subsequent results. These four results were identified as outliers in the previous Annual Water Quality Report and were excluded from the dataset for the current outlier evaluation. No additional chloride outliers were identified.
- **Sulfate.** One high result from May 2007 was previously identified as an outlier and was removed based on visual inspection of the data. The outlier analysis was rerun with the May 2007 result removed, and one additional high result from May 2005 was flagged as a statistical outlier. This result was kept in the database because there was no known explanation for the higher result, and it appeared to be within the range of potential natural variation relative to the other observed sulfate concentrations.

Outlier analysis results are included in **Attachment D2**.

INTERWELL PREDICTION LIMITS

Interwell prediction limits are calculated using background data from MW-6 for each monitored constituent, with outliers removed as noted above. The prediction limit analysis performed in Sanitas™ includes the following steps:

- 1) If 100 percent of the background values are non-detect, the Double Quantification rule applies and no prediction limit is calculated.
- 2) If 50 percent or more of results are non-detect, then a non-parametric prediction limit is calculated.
- 3) If fewer than 50 percent of the results are non-detect, run normality test (Shapiro Wilk/Francia) to assess whether the data fit a normal distribution or can be transformed to fit a normal distribution (e.g., lognormal).
- 4) If normal or transformed normal, calculate parametric prediction limit.

5) If not normal or transformed normal, calculate non-parametric prediction limit.

Consistent with the Unified Guidance, parametric prediction limits are calculated based on a 1-of-2 retesting protocol and a 10 percent site-wide false positive rate. Sanitas™ establishes the per-test significance level based on user inputs of the number of events per year, number of constituents being evaluated, and number of compliance wells. For the 2023 event, the following values were used:

Parameter	Value	Comments
Evaluations per year	1	April event
Constituents analyzed	17	Total of 17 constituents analyzed
Compliance wells	7	Total of 7 compliance wells analyzed

Non-parametric prediction limits are also based on a 1-of-2 retesting protocol. The non-parametric limit is the highest value in the background dataset. Due to the small sample size, the false positive rate for the non-parametric tests is higher than for the parametric tests, but will go down as more background data are obtained.

For constituents with 100 percent non-detects in the background data, evaluation under the Double Quantification Rule can be used in place of a calculated Upper Prediction Limit (UPL), and means that a statistically significant increase (SSI) has not occurred for a compliance well unless two sample results from the well exceed the laboratory's reporting limit or quantification limit. For the Lansing site, all of the required sampling parameters were detected at least once in the background well samples, so UPLs were calculated for all parameters; however, only results that exceed both the UPL and the quantification limit can be considered to be SSIs. For evaluation of parameters with less than 100 percent non-detects in the background sampling, the non-detects were replaced with the detection limit, unless the non-detects represented less than 15 percent of the total samples, in which case one-half of the detection limit was used.

Interwell prediction limit analysis results for 2023 are included in **Attachment D3**.

RM/lmh/CJH

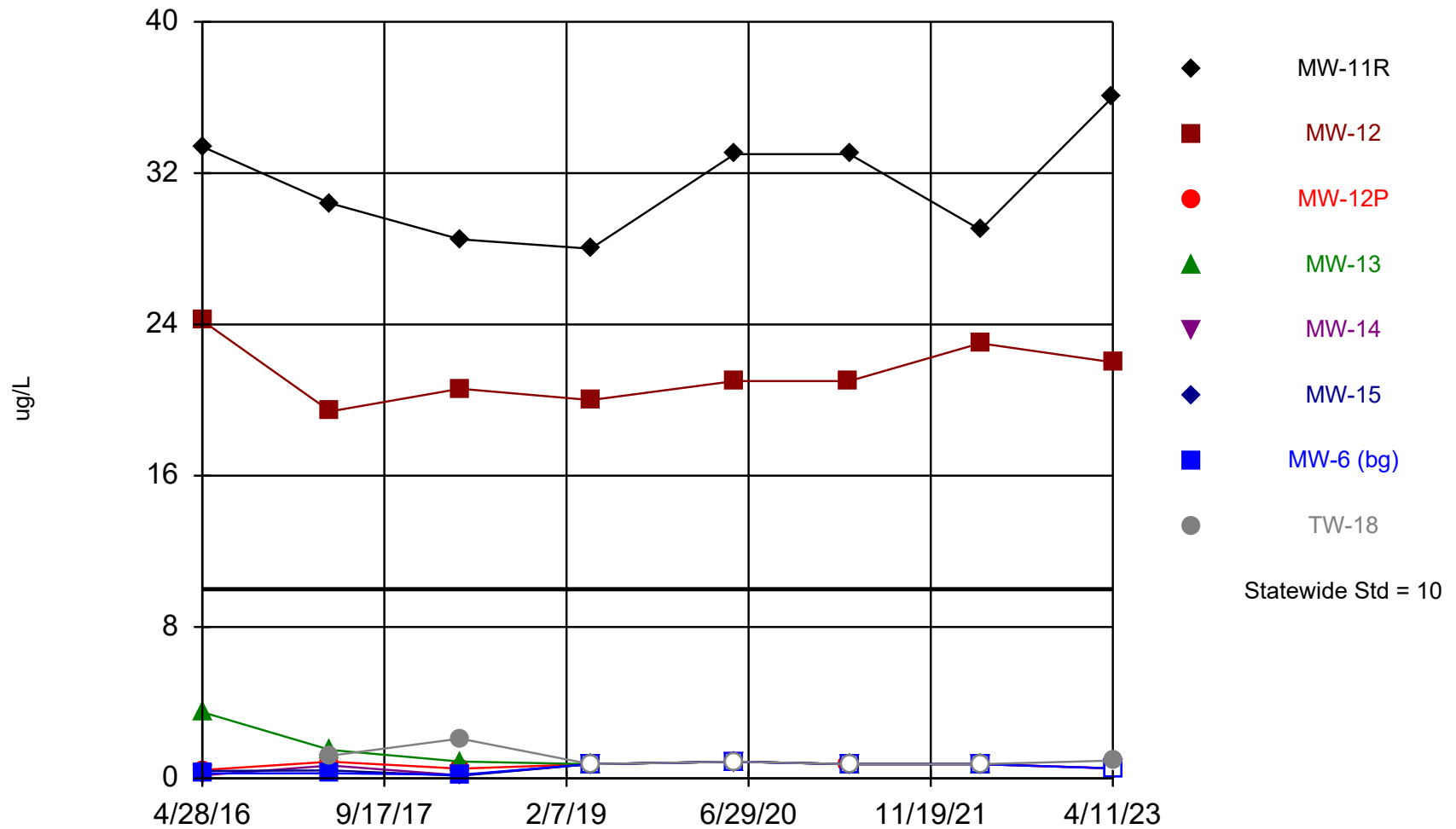
Encl. Attachments D1 through D3

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Attachment D1

Times Series Graphs

Arsenic



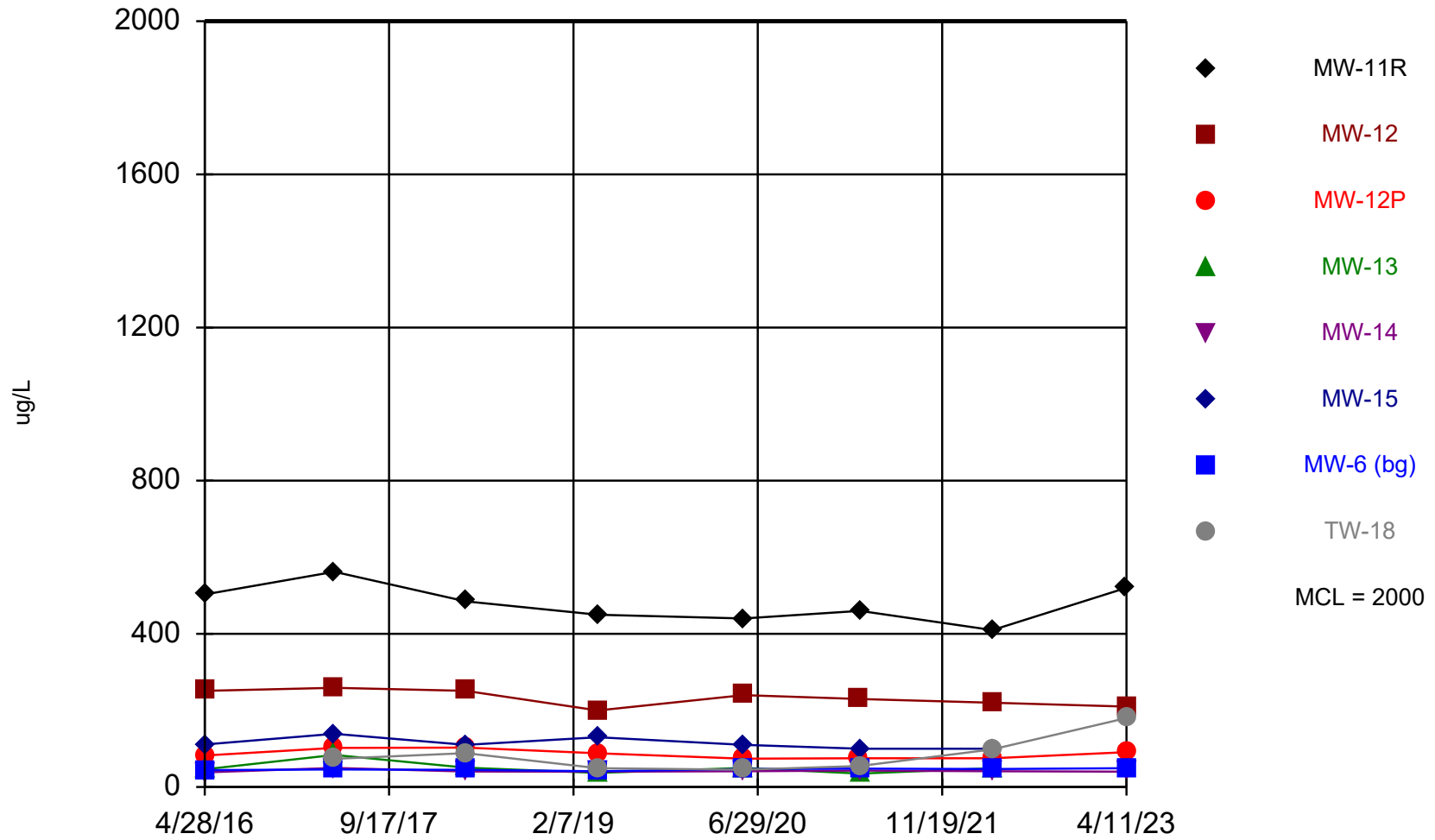
Time Series Analysis Run 7/13/2023 3:00 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Arsenic (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	33.4	24.2	0.44 (J)	3.5				
4/29/2016					0.16 (J)	0.39 (J)	0.26 (J)	
4/19/2017							0.27 (J)	
4/20/2017	30.4	19.4	0.88 (J)	1.5	0.68 (J)	0.42 (J)		1.2
4/16/2018							0.19 (J)	
4/17/2018	28.5	20.6	0.51 (J)	0.89 (J)	0.16 (J)	0.14 (J)		2.1
4/15/2019					<0.75		<0.75	
4/16/2019	28	20	<0.75	<0.75		<0.75		<0.75
5/20/2020							<0.88	
5/21/2020	33	21	<0.88	<0.88				
5/22/2020					<0.88	<0.88		<0.88
4/6/2021		21	<0.75					
4/7/2021	33			<0.75	<0.75	<0.75	<0.75	<0.75
4/6/2022		23	<0.75 (U)		<0.75 (U)		<0.75 (U)	<0.75 (U)
4/7/2022	29			<0.75 (U)		<0.75 (U)		
4/10/2023	36							
4/11/2023		22	<0.53 (U)		<0.53 (U)		<0.53 (U)	0.94 (J)

Barium



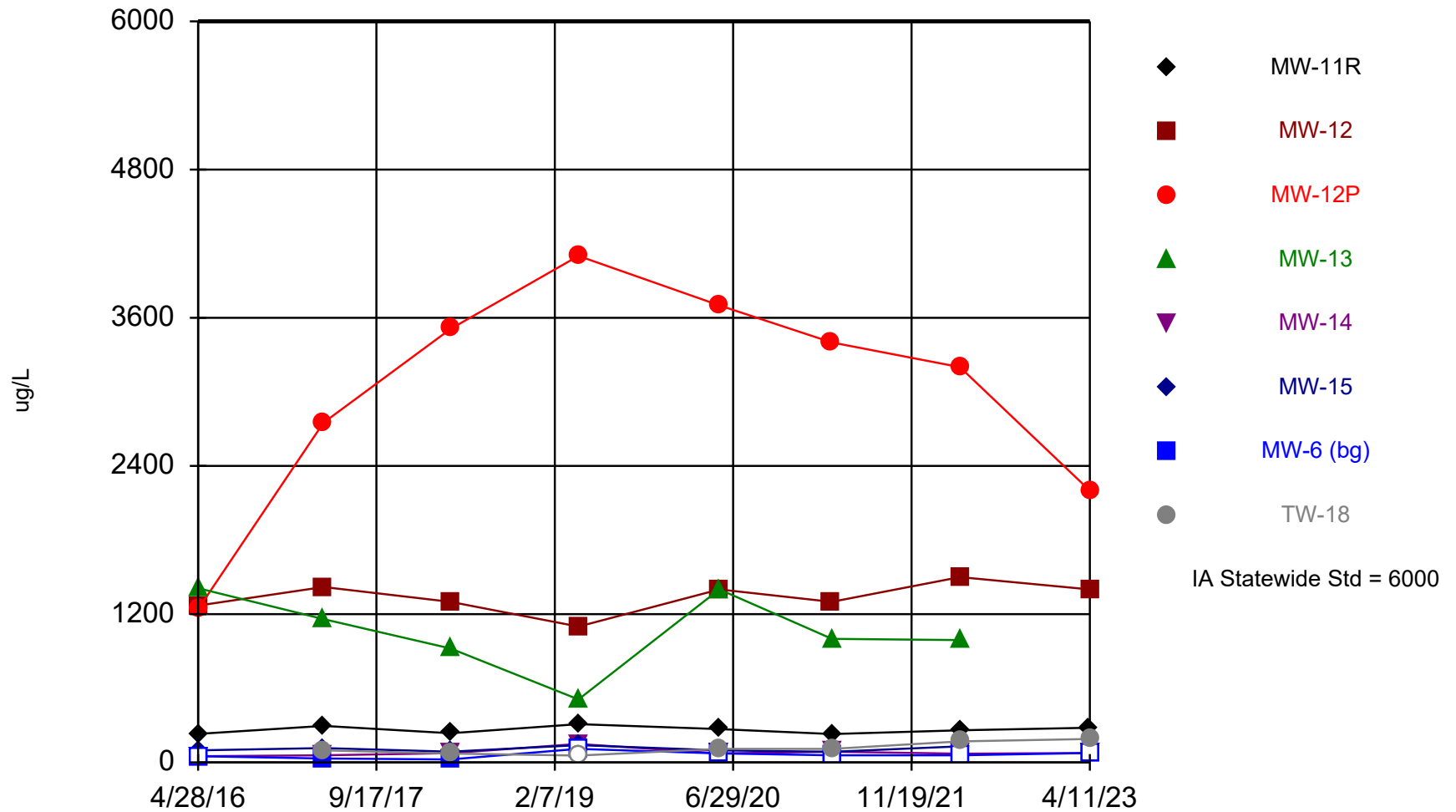
Time Series Analysis Run 7/13/2023 3:00 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Barium (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	503	251	82.2	46.4				
4/29/2016					38.2	111	44.2	
4/19/2017							45.7	
4/20/2017	562	259	102	83.8	49.8	139		73.6
4/16/2018							44.9	
4/17/2018	485	251	103	50.5	40.6	110		88.4
4/15/2019					40 (B)		41 (B)	
4/16/2019	450 (B)	200 (B)	88 (B)	37 (B)		130 (B)		49 (B)
5/20/2020							47	
5/21/2020	440	240	74	50				
5/22/2020					41	110		45
4/6/2021		230	75					
4/7/2021	460			35	43	100	48	55
4/6/2022		220	75		41		47	98
4/7/2022	410			49		100		
4/10/2023	520							
4/11/2023		210	91		40		49	180

Boron



Time Series Analysis Run 7/13/2023 3:00 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

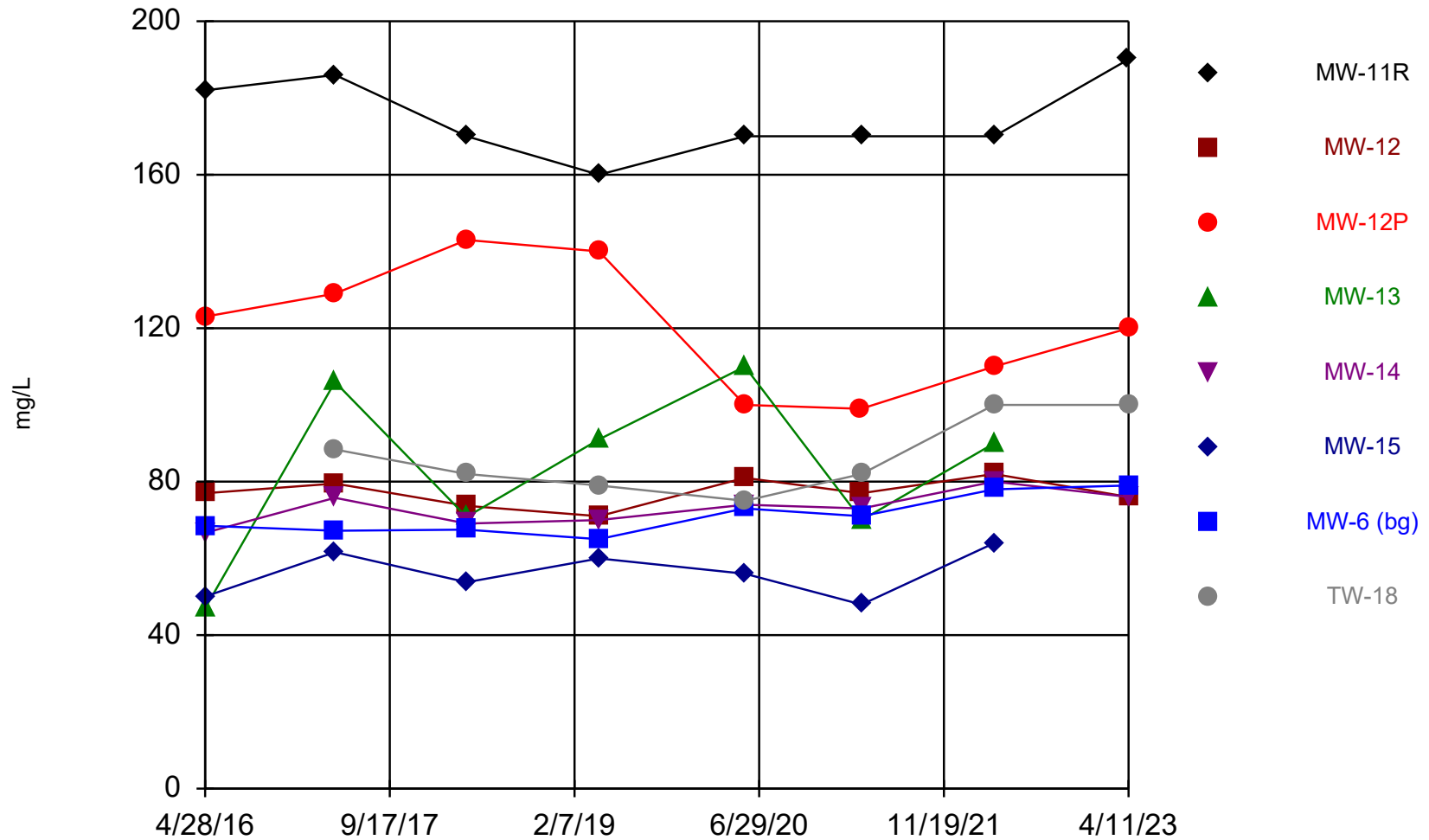
Time Series

Constituent: Boron (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	231	1270	1240	1410				
4/29/2016					<50	97.1 (J)	<50	
4/19/2017							32 (J,B)	
4/20/2017	296	1420	2750	1160	57.3 (J)	116		97.6 (J)
4/16/2018							23.8 (J)	
4/17/2018	236	1300	3510	922	75 (J)	86.5 (J)		71.2 (J)
4/15/2019					150 (J)		<110	
4/16/2019	310	1100	4100	510		140 (J)		<110
5/20/2020							<73	
5/21/2020	270	1400	3700	1400				
5/22/2020					<73	98 (J)		110
4/6/2021		1300	3400					
4/7/2021	230			1000	87 (J)	86 (J)	<58	110
4/6/2022		1500	3200		70 (J)		<58 (U)	170
4/7/2022	260			990		130		
4/10/2023	280							
4/11/2023		1400	2200		<76 (U)		<76 (U)	190

Calcium



Time Series Analysis Run 7/13/2023 3:00 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

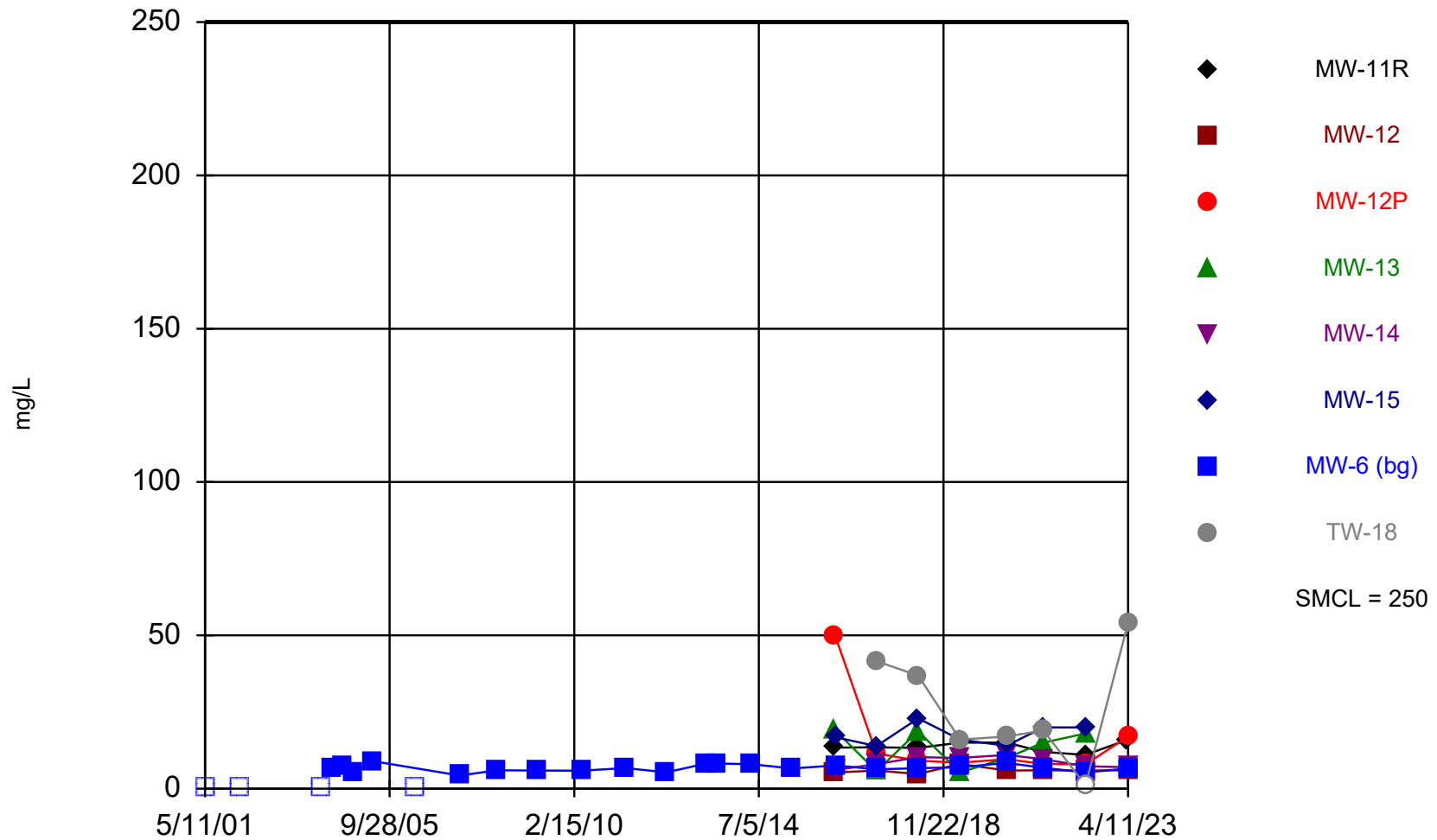
Time Series

Constituent: Calcium (mg/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	182	77	123	47				
4/29/2016					66.7	50.1	68.5	
4/19/2017							67.2	
4/20/2017	186	79.5	129	106	75.8	61.6		88.4
4/16/2018							67.5	
4/17/2018	170 (M1)	73.7	143	70.8	69.1	53.8		82
4/15/2019					70		65	
4/16/2019	160	71	140	91		60		79
5/20/2020							73	
5/21/2020	170	81	100	110				
5/22/2020					74	56		75
4/6/2021		77	99					
4/7/2021	170			70	73	48	71	82
4/6/2022		82	110		80		78	100
4/7/2022	170			90		64		
4/10/2023	190							
4/11/2023		76	120		76		79	100

Chloride



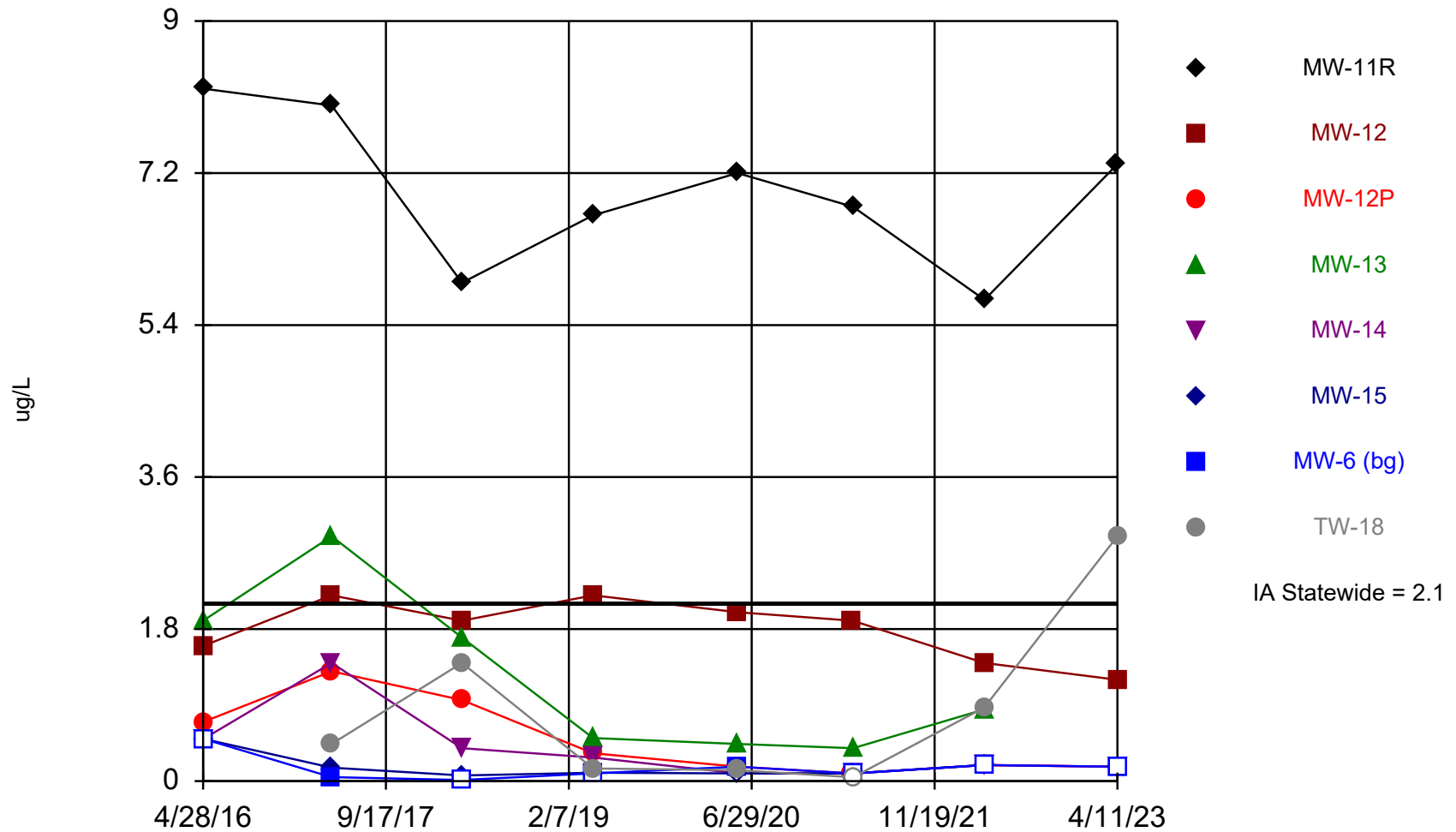
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Chloride (mg/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
5/11/2001							<0.5 (X)	
3/8/2002							<0.5 (X)	
2/19/2004							<0.5 (X)	
5/26/2004							6.5	
8/23/2004							7	
11/18/2004							5.1	
5/5/2005							9	
5/19/2006							<0.5 (X)	
5/30/2007							4.3	
4/16/2008							6	
4/3/2009							5.9	
4/21/2010							5.89	
5/4/2011							6.72	
4/25/2012							5.35	
4/2/2013							8.2	
7/2/2013							8.2	
4/29/2014							8	
4/20/2015							6.6	
4/28/2016	13.4	5.3	49.7	19				
4/29/2016					6.1	16.8	7.6	
4/19/2017							6.3	
4/20/2017	13.5	5.9	11.5	5.7	8	13.9		41.6
4/16/2018							6.7	
4/17/2018	13.3	4.8	9.1	18.7	10.3	22.9		36.9
4/15/2019					10		7	
4/16/2019	15	8.1	8.5	5.3		16		16
5/20/2020							8.4	
5/21/2020	15	5.9	9.6	10				
5/22/2020					11	14		17
4/6/2021		6	8.1					
4/7/2021	12			15	9.6	20	6.8	19
4/6/2022		5.9	7.9		7.3		5.3	<2.3 (U)
4/7/2022	11			18		20		
4/10/2023	16							
4/11/2023		6	17		7		6.6	54

Cobalt



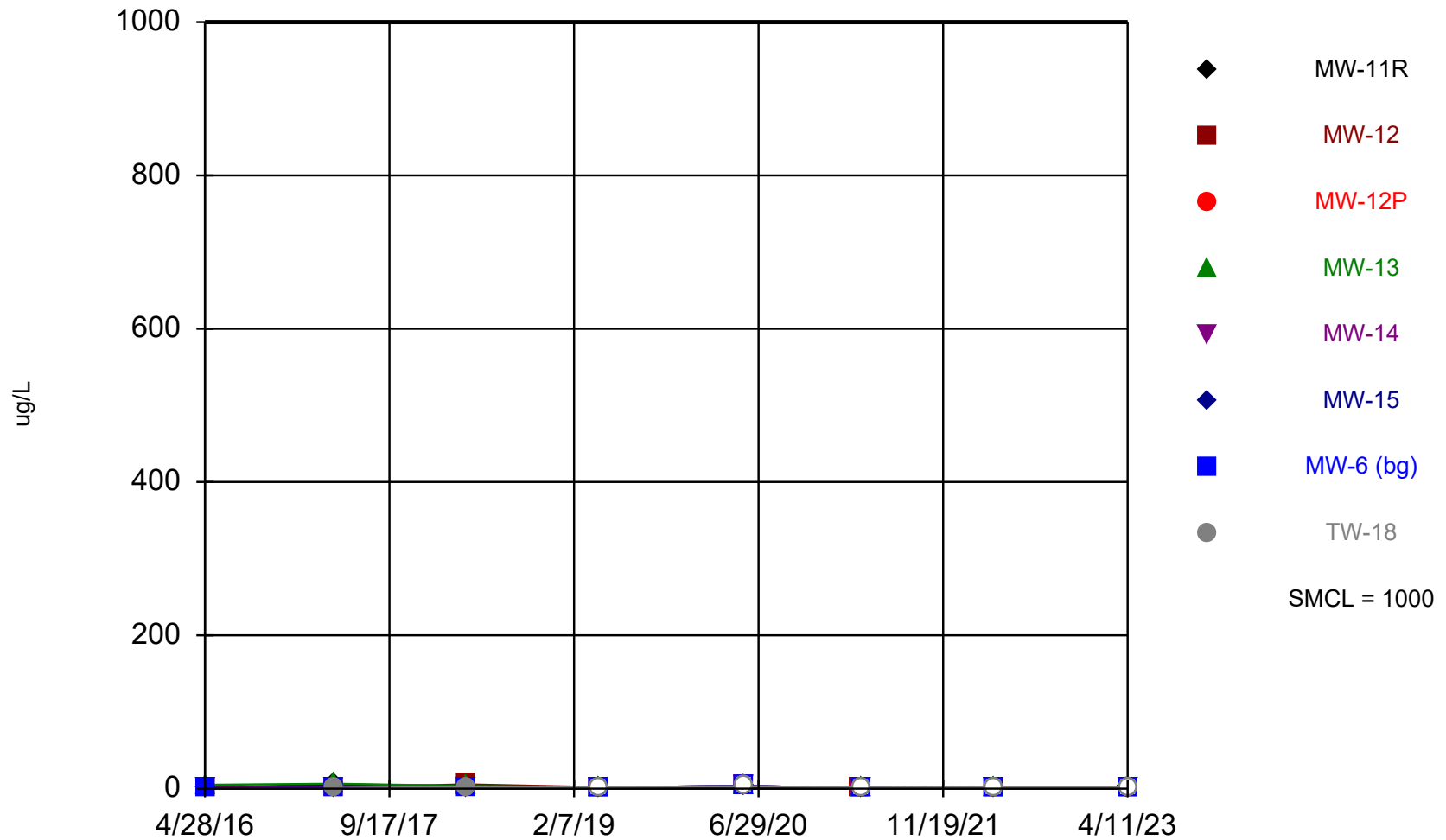
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Cobalt (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	8.2	1.6	0.7 (J)	1.9				
4/29/2016					<0.5	<0.5	<0.5	
4/19/2017							0.047 (J,B)	
4/20/2017	8	2.2	1.3	2.9	1.4	0.16 (J,B)		0.44 (J)
4/16/2018							<0.014	
4/17/2018	5.9	1.9	0.96 (J)	1.7	0.39 (J)	0.066 (J)		1.4
4/15/2019					0.28 (J)		<0.091	
4/16/2019	6.7	2.2	0.33 (J)	0.51		0.1 (J)		0.15 (J)
5/20/2020							0.17 (J)	
5/21/2020	7.2	2	0.17 (J)	0.44 (J)				
5/22/2020					0.092 (J)	<0.091		0.13 (J)
4/6/2021		1.9	<0.091					
4/7/2021	6.8			0.39 (J)	<0.091	<0.091	<0.091	<0.091
4/6/2022		1.4	<0.19 (U)		<0.19 (U)		<0.19 (U)	0.87
4/7/2022	5.7			0.85		<0.19 (U)		
4/10/2023	7.3							
4/11/2023		1.2	<0.17 (U)		<0.17 (U)		<0.17 (U)	2.9

Copper



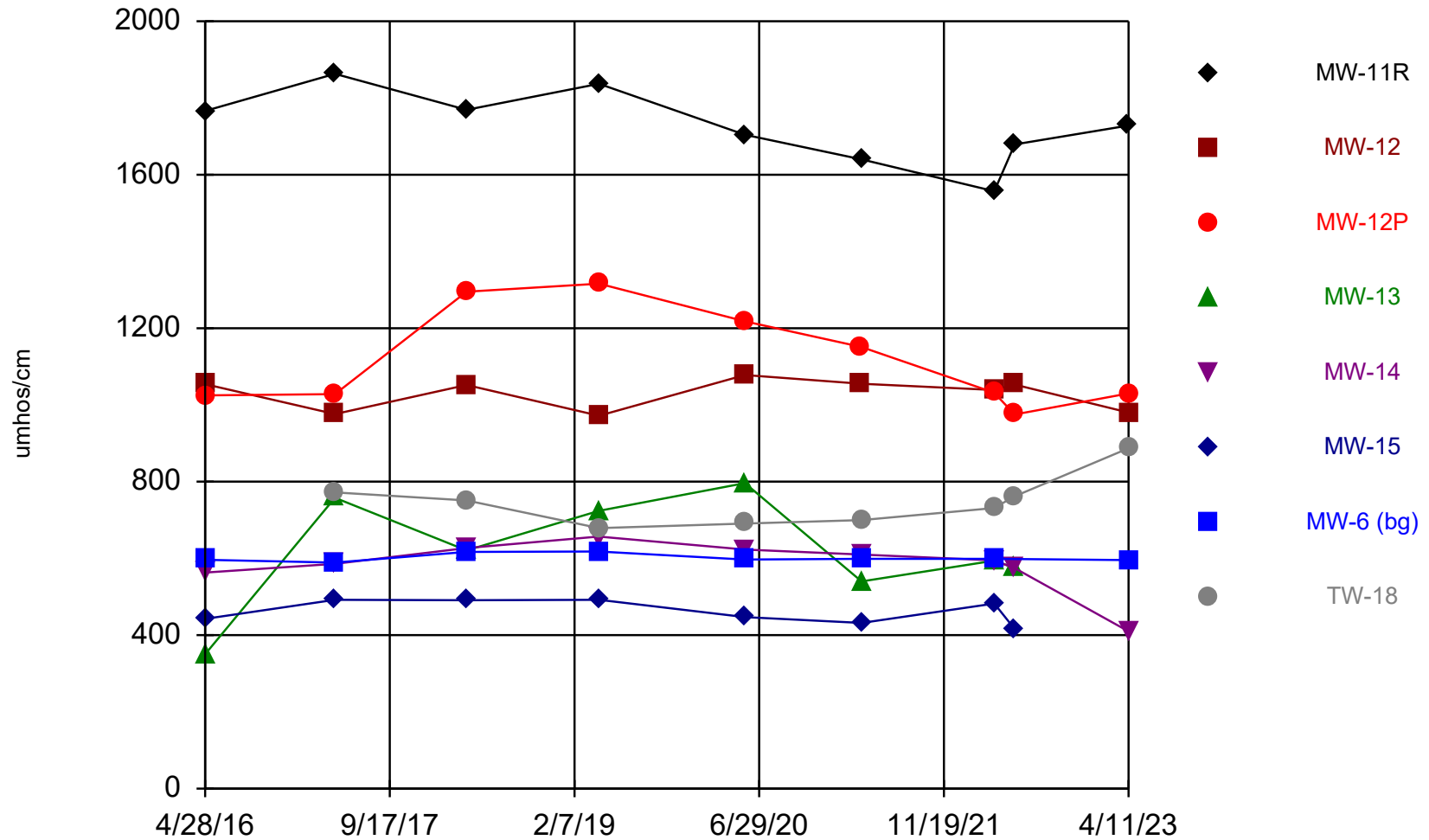
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Copper (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	0.94 (J,Y)	0.97 (J,Y)	0.58 (J,Y)	5.1				
4/29/2016					0.42 (J,Y)	0.96 (J,Y)	0.17 (J,Y)	
4/19/2017							0.21 (J,B)	
4/20/2017	5.8	1.7	2.3	6.6	2.3	0.87 (J,B)		0.84 (J,B)
4/16/2018							0.25 (J,B)	
4/17/2018	3.4	5.7	1.7	3.6	0.51 (J,B)	0.7 (J,B)		2.2
4/15/2019					<2		<2	
4/16/2019	<2	<2	<2	<2		<2		<2
5/20/2020							<3.2	
5/21/2020	<3.2	<3.2	<3.2	<3.2				
5/22/2020					<3.2	<3.2		<3.2
4/6/2021		<1.4	<1.4					
4/7/2021	<1.4			<1.4	<1.4	<1.4	<1.4	<1.4
4/6/2022		1.8 (J)	<1.8 (U)		<1.8 (U)		<1.8 (U)	<1.8 (U)
4/7/2022	<1.8 (U)			<1.8 (U)		<1.8 (U)		
4/10/2023	<1.8 (U)							
4/11/2023		<1.8 (U)	<1.8 (U)		<1.8 (U)		<1.8 (U)	<1.8 (U)

Field Conductivity



Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

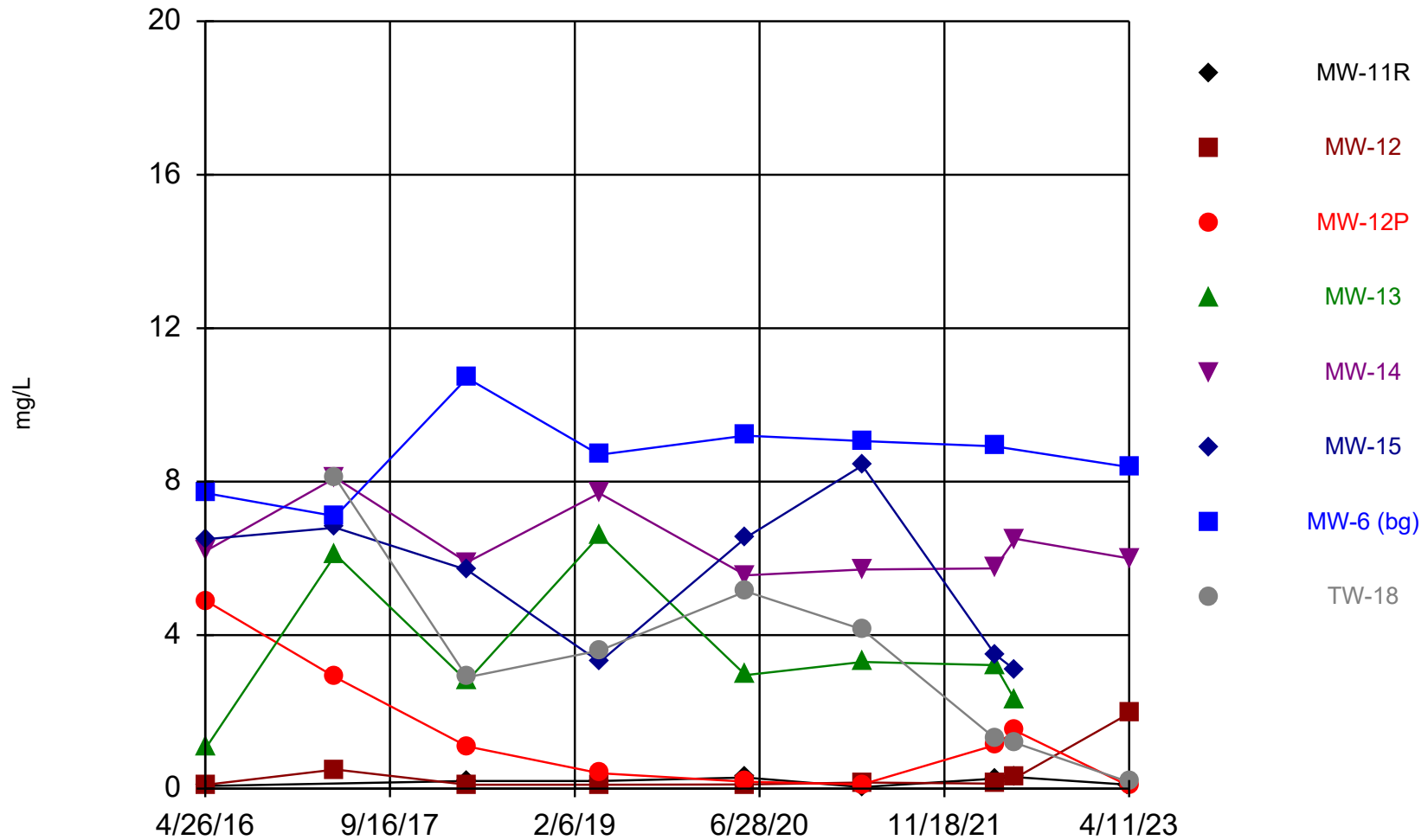
Time Series

Constituent: Field Conductivity (umhos/cm) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	1766	1054	1025	350.3				
4/29/2016					563.1	442.8	596.2	
4/19/2017							589	
4/20/2017	1863	976	1028	758	586	492		772
4/16/2018							617	
4/17/2018	1769	1052	1295	621	627	491		751
4/15/2019					657		618	
4/16/2019	1837	972	1316	724		492		679
5/20/2020							597	
5/21/2020	1704	1078	1218	796				
5/22/2020					623	447		691
4/6/2021		1055	1151					
4/7/2021	1640			540	610	432	599	700
4/6/2022		1039	1032		594.9		599	731.2
4/7/2022	1557			594		482.2		
6/2/2022	1679	1053	975	575	574.6	416.1		762
4/10/2023	1728							
4/11/2023		980	1030		409.8		595.6	887

Field Dissolved Oxygen



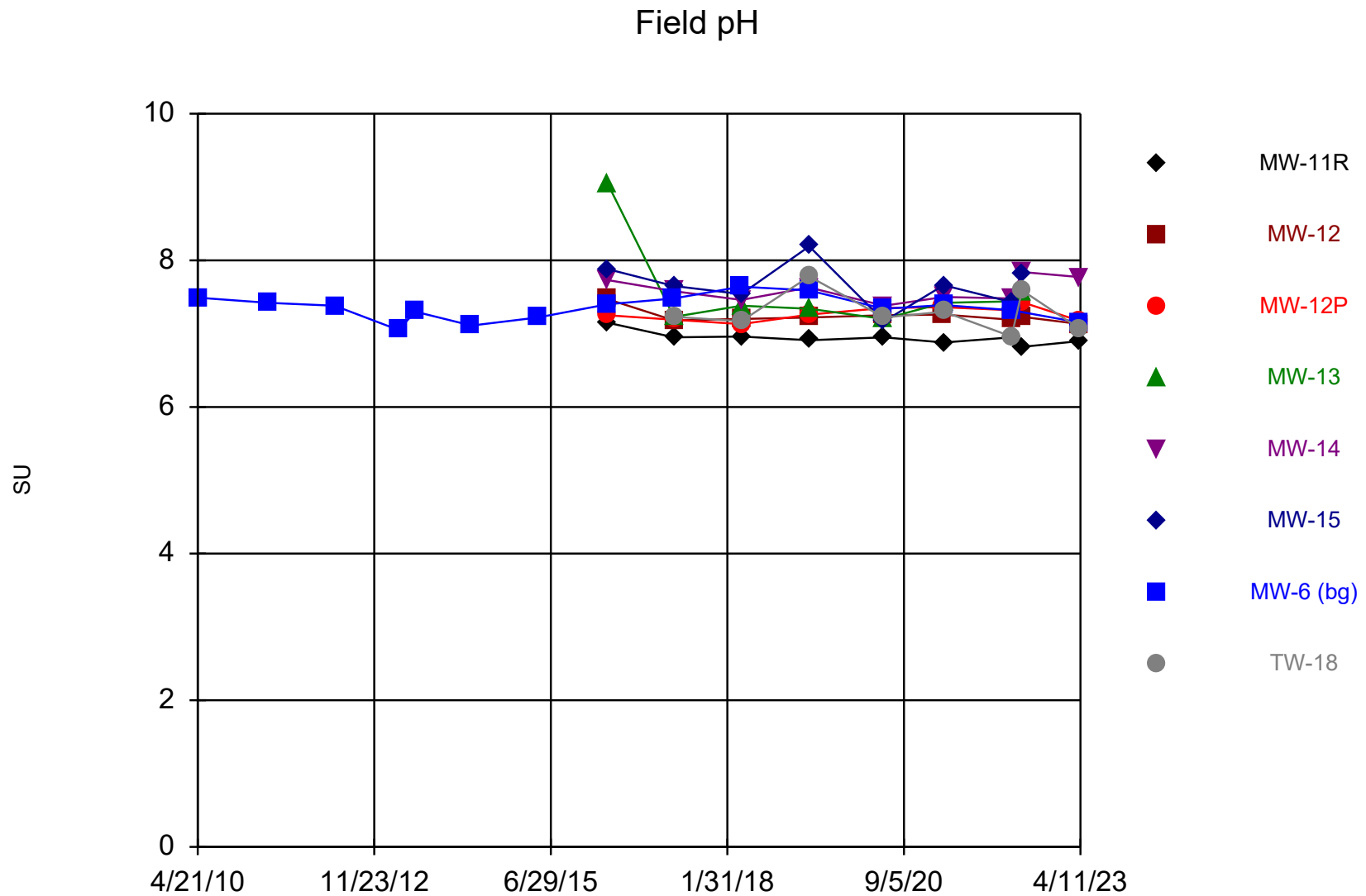
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Field Dissolved Oxygen (mg/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/26/2016	0.07							
4/29/2016		0.1	4.89	1.08	6.2	6.5	7.7	
4/19/2017		0.5	2.9	6.1	8.1	6.8	7.1	8.1
4/16/2018	0.2	0.1	1.1	2.8	5.9	5.7	10.7	2.9
4/15/2019					7.7		8.7	
4/16/2019	0.2	0.1	0.4	6.6		3.3		3.6
5/20/2020							9.2	
5/21/2020	0.29	0.11	0.18	2.96				
5/22/2020					5.56	6.54		5.14
4/6/2021		0.16	0.11					
4/7/2021	0.04			3.3	5.71	8.42	9.06	4.15
4/6/2022		0.13	1.13		5.74		8.92	1.32
4/7/2022	0.26			3.22		3.5		
6/2/2022	0.3	0.28	1.51	2.29	6.51	3.09		1.19
4/10/2023	0.1							
4/11/2023		1.96	0.07		6		8.38	0.17



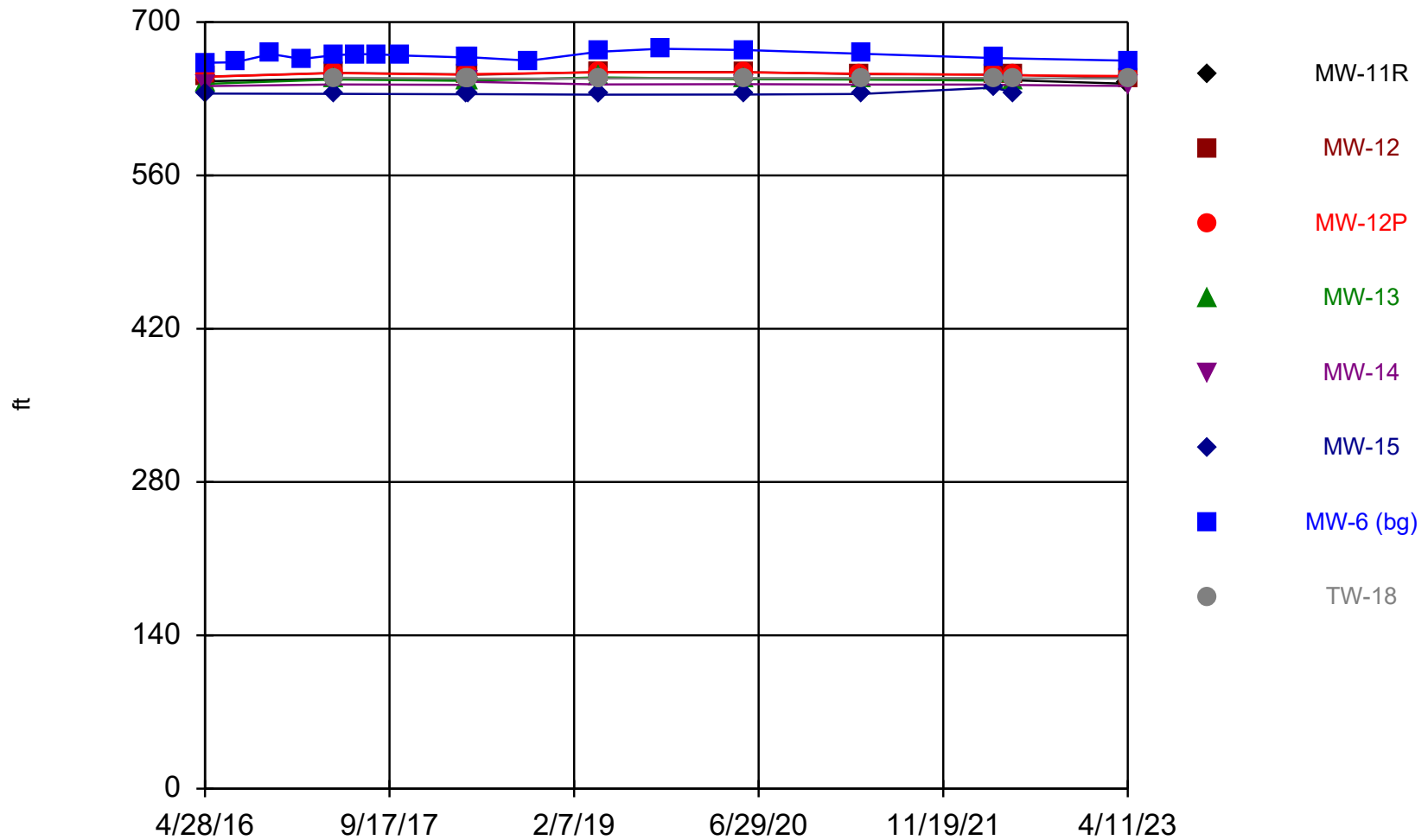
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Field pH (SU) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/21/2010							7.49	
5/4/2011							7.42	
4/25/2012							7.38	
4/2/2013							7.05	
7/2/2013							7.3	
4/29/2014							7.11	
4/20/2015							7.22	
4/28/2016	7.15	7.47	7.25	9.05				
4/29/2016					7.73	7.88	7.4	
4/19/2017							7.48	
4/20/2017	6.95	7.18	7.19	7.23	7.58	7.65		7.23
4/16/2018							7.64	
4/17/2018	6.96	7.2	7.13	7.38	7.46	7.54		7.17
4/15/2019					7.63		7.59	
4/16/2019	6.91	7.22	7.26	7.34		8.19		7.78
5/20/2020							7.34	
5/21/2020	6.95	7.25	7.35	7.2				
5/22/2020					7.38	7.17		7.22
4/6/2021		7.26	7.36					
4/7/2021	6.88			7.42	7.5	7.66	7.39	7.3
4/6/2022		7.19	7.32		7.48		7.32	6.96
4/7/2022	6.95			7.44		7.43		
6/2/2022	6.82	7.23	7.43	7.57	7.84	7.8		7.59
4/10/2023	6.9							
4/11/2023		7.13	7.17		7.77		7.15	7.06

Groundwater Elevation



Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

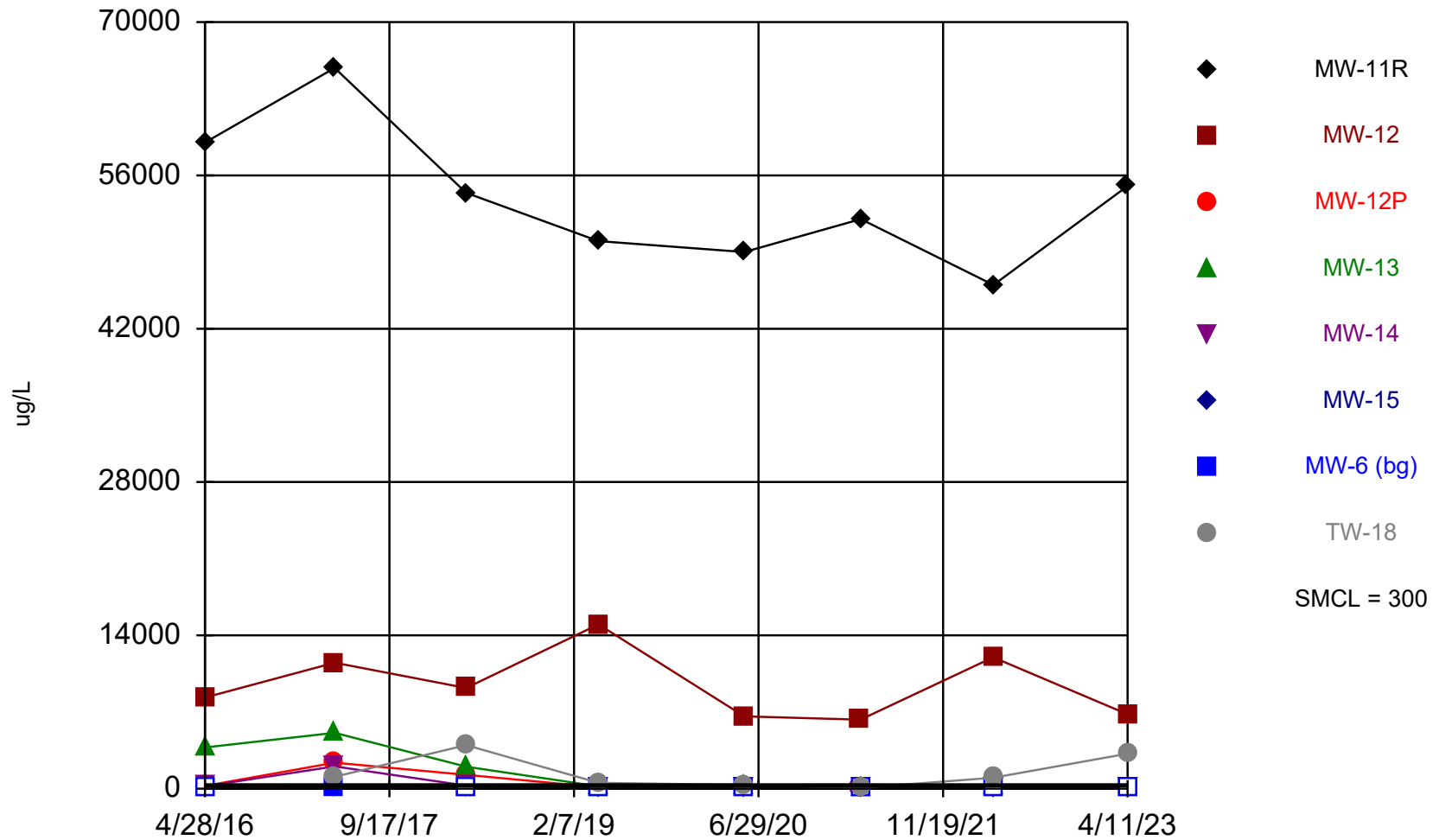
Time Series

Constituent: Groundwater Elevation (ft) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	645.96	650.05	650	643.56	641.56	634.71	662.8	
7/20/2016							663.21	
10/27/2016							670.82	
1/18/2017							666.28	
4/19/2017	648.24	653.68	653.4	647.61	643.01	634.5	669.82	649.03
6/19/2017							670.65	
8/15/2017							670.61	
10/16/2017							669.58	
4/16/2018	647.07	652.25	651.9	646.36	642.61	634.07	667.64	648.49
4/26/2018	647.47	651.75	652.54	646.38	645.46	634.14	667.96	648.35
10/8/2018							664.71	
4/15/2019	648.69	654.35	653.99	649.45	643.08	633.71	672.78	648.47
4/16/2019	648.69	654.35	653.99	649.45		633.71		648.47
10/2/2019							675.54	
5/20/2020							674.47	
5/21/2020	648.17	654.45	654.04	647.94				
5/22/2020					643.23	633.8		648.86
4/6/2021		652.31	652.92					
4/7/2021	647.97			647.39	642.92	634.38	671.08	648.86
4/6/2022		652.11	651.71		642.88		667.14	648.91
4/7/2022	647.31			646.61		640.13		
6/2/2022	646.78	651.73	651.37	645.41	642.58	635.53		648.61
4/10/2023	643.72							
4/11/2023		649.09	650.75		641.64		664.79	648.5

Iron



Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

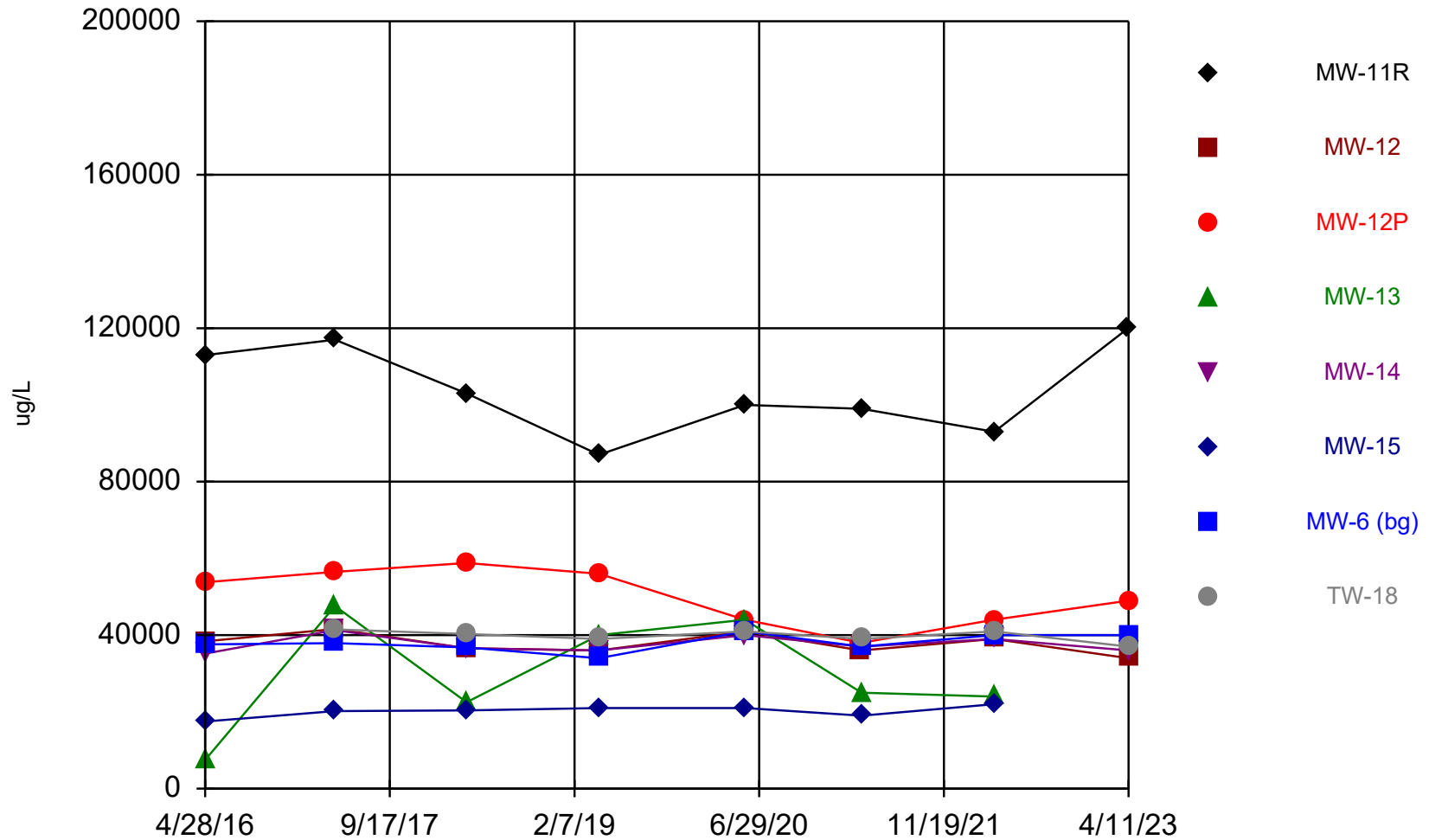
Time Series

Constituent: Iron (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	59000	8320	250	3760				
4/29/2016					226	64.8	<12.8	
4/19/2017							27.1 (J,B)	
4/20/2017	65800	11500	2370	5100	2040	94.5 (B)		1090
4/16/2018							<9.6	
4/17/2018	54400	9190	1270	2010	285	13.4 (J)		3980
4/15/2019					110 (B)		<66	
4/16/2019	50000 (B)	15000 (B)	130 (B)	220 (B)		<66		530 (B)
5/20/2020							<50	
5/21/2020	49000	6600	120	240				
5/22/2020					57 (J)	<50		340
4/6/2021		6300	<36					
4/7/2021	52000			180	39 (J)	<36	<36	79 (J)
4/6/2022		12000	39 (J)		<36 (U)		<36 (U)	1000
4/7/2022	46000			280		<36 (U)		
4/10/2023	55000							
4/11/2023		6800	<36 (U)		<36 (U)		<36 (U)	3200

Magnesium



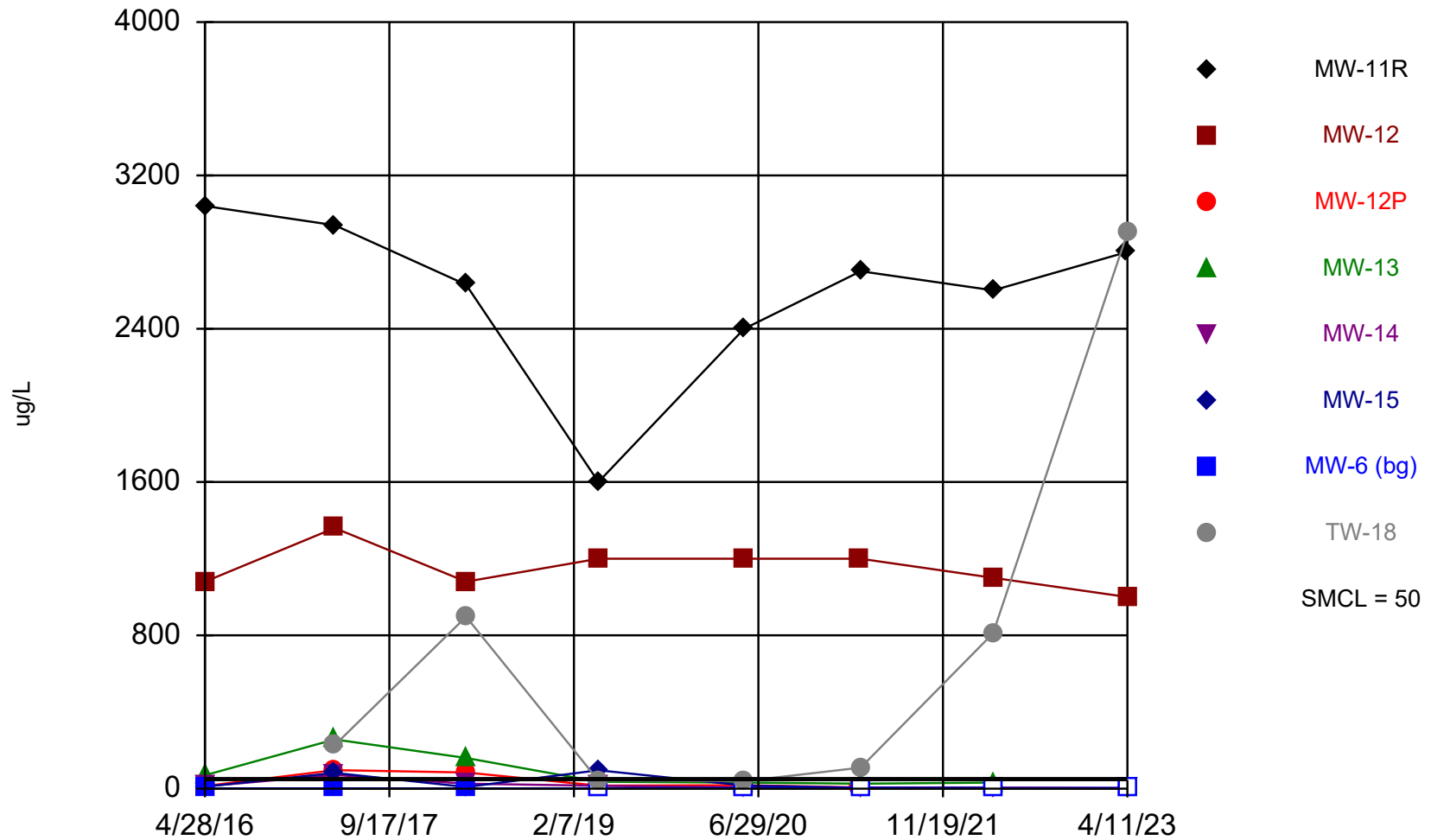
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Magnesium (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	113000	38400	53800	7490				
4/29/2016					35200	17500	37600	
4/19/2017							37900	
4/20/2017	117000	41600	56500	47600	41300	20200		41500
4/16/2018							36800	
4/17/2018	103000 (M1)	36600	58800	22500	36600	20400		40300
4/15/2019					36000		34000	
4/16/2019	87000	36000	56000	40000		21000		39000
5/20/2020							41000	
5/21/2020	100000	41000	44000	44000				
5/22/2020					40000	21000		41000
4/6/2021		36000	38000					
4/7/2021	99000			25000	37000	19000	37000	39000
4/6/2022		39000	44000		39000		40000	41000
4/7/2022	93000			24000		22000		
4/10/2023	120000							
4/11/2023		34000	49000		36000		40000	37000

Manganese



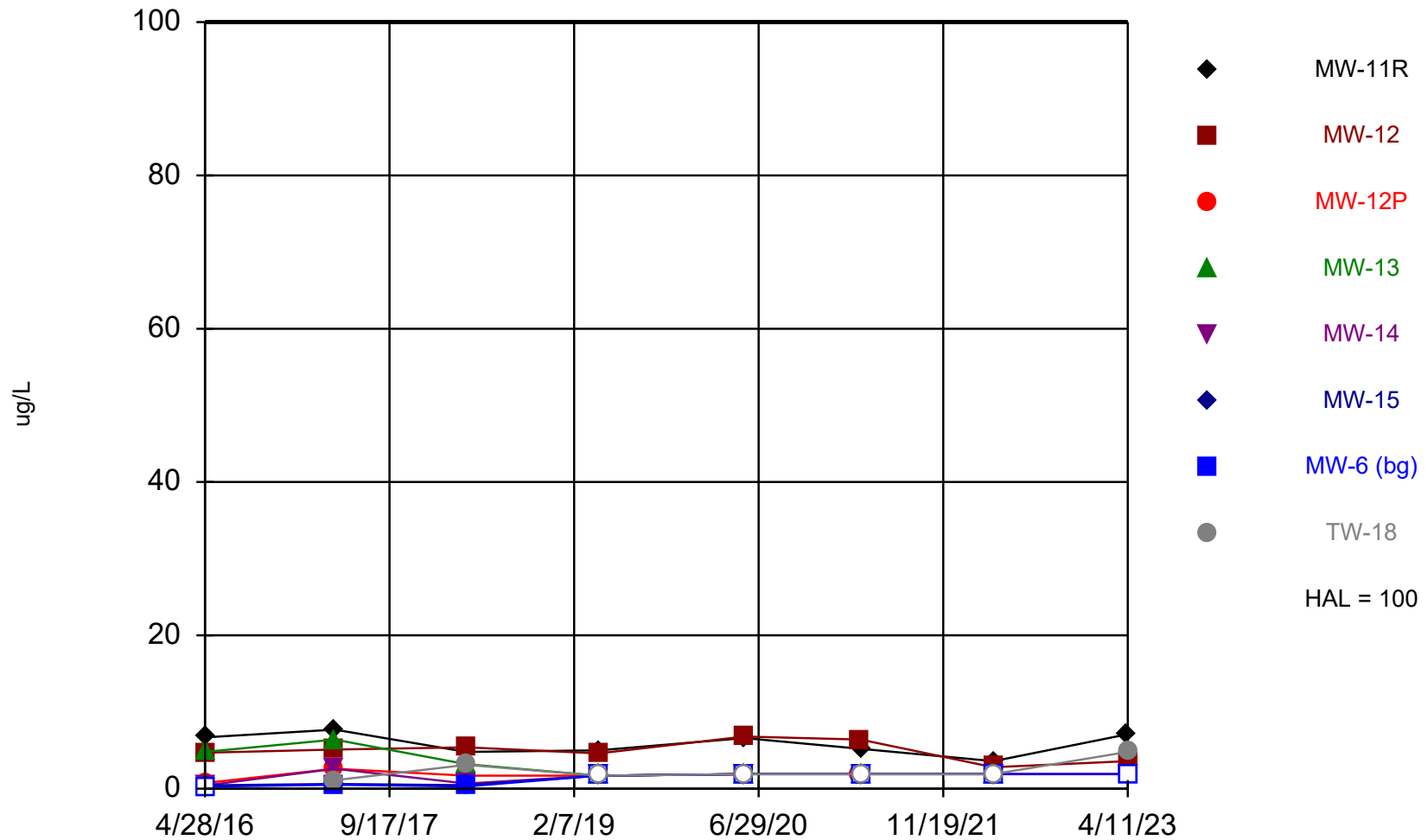
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Manganese (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	3040	1080	13.7	70.4				
4/29/2016					12.6	11.1	1.5 (Y)	
4/19/2017							1.8 (B)	
4/20/2017	2940	1360	96.9	257	71.7	82.1		227
4/16/2018							0.28 (J)	
4/17/2018	2630	1080	84.8	160	25.8	9.1		897
4/15/2019					15		<2.5	
4/16/2019	1600	1200	16	36		96		43
5/20/2020							<4	
5/21/2020	2400	1200	18	32				
5/22/2020					6 (J)	17		40
4/6/2021		1200	6.7 (J)					
4/7/2021	2700			26	<4.4	<4.4	<4.4	110
4/6/2022		1100	4.9 (J)		<3.6 (U)		<3.6 (U)	810
4/7/2022	2600			32		<3.6 (U)		
4/10/2023	2800							
4/11/2023		1000	<3.6 (U)		<3.6 (U)		<3.6 (U)	2900

Nickel



Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

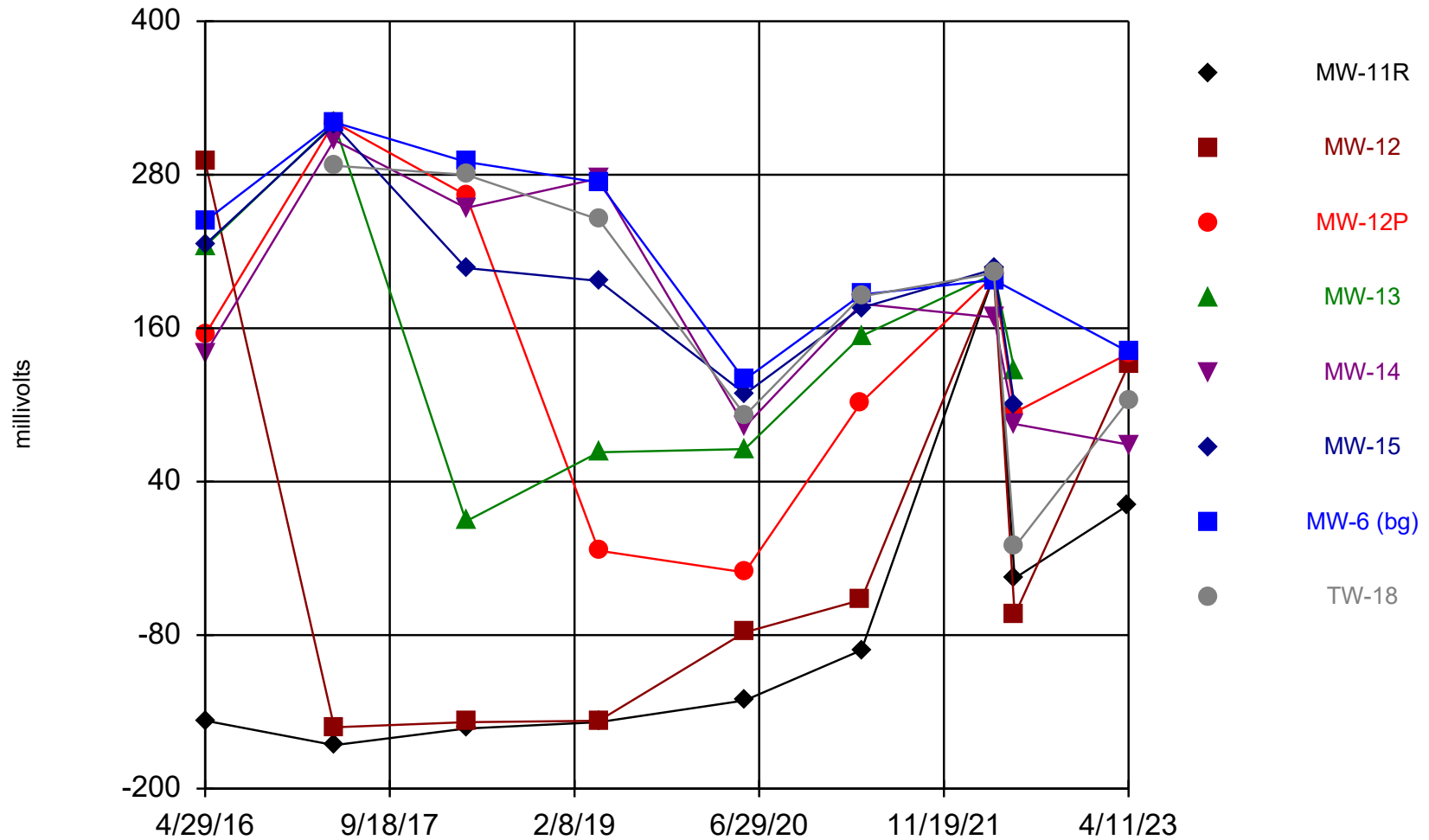
Time Series

Constituent: Nickel (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	6.7	4.7	0.74 (J)	4.8				
4/29/2016					0.42 (J)	0.44 (J)	<0.27	
4/19/2017							0.5 (J,B)	
4/20/2017	7.7	5.1	2.6	6.4	2.6	0.62 (J,B)		1.1 (B)
4/16/2018							0.3 (J)	
4/17/2018	4.8	5.4	1.7	3.2	0.67 (J)	0.46 (J)		3.1
4/15/2019					<1.7		<1.7	
4/16/2019	5	4.6 (J)	<1.7	<1.7		<1.7		<1.7
5/20/2020							<1.9	
5/21/2020	6.6	6.8	<1.9	<1.9				
5/22/2020					<1.9	<1.9		<1.9
4/6/2021		6.4	<1.9					
4/7/2021	5.2			<1.9	<1.9	<1.9	<1.9	<1.9
4/6/2022		2.8 (J)	<1.9 (U)		<1.9 (U)		<1.9 (U)	<1.9 (U)
4/7/2022	3.6 (J)			<1.9 (U)		<1.9 (U)		
4/10/2023	7.1							
4/11/2023		3.6 (J)	<1.9 (U)		<1.9 (U)		<1.9 (U)	4.8 (J)

Oxidation Reduction Potential



Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

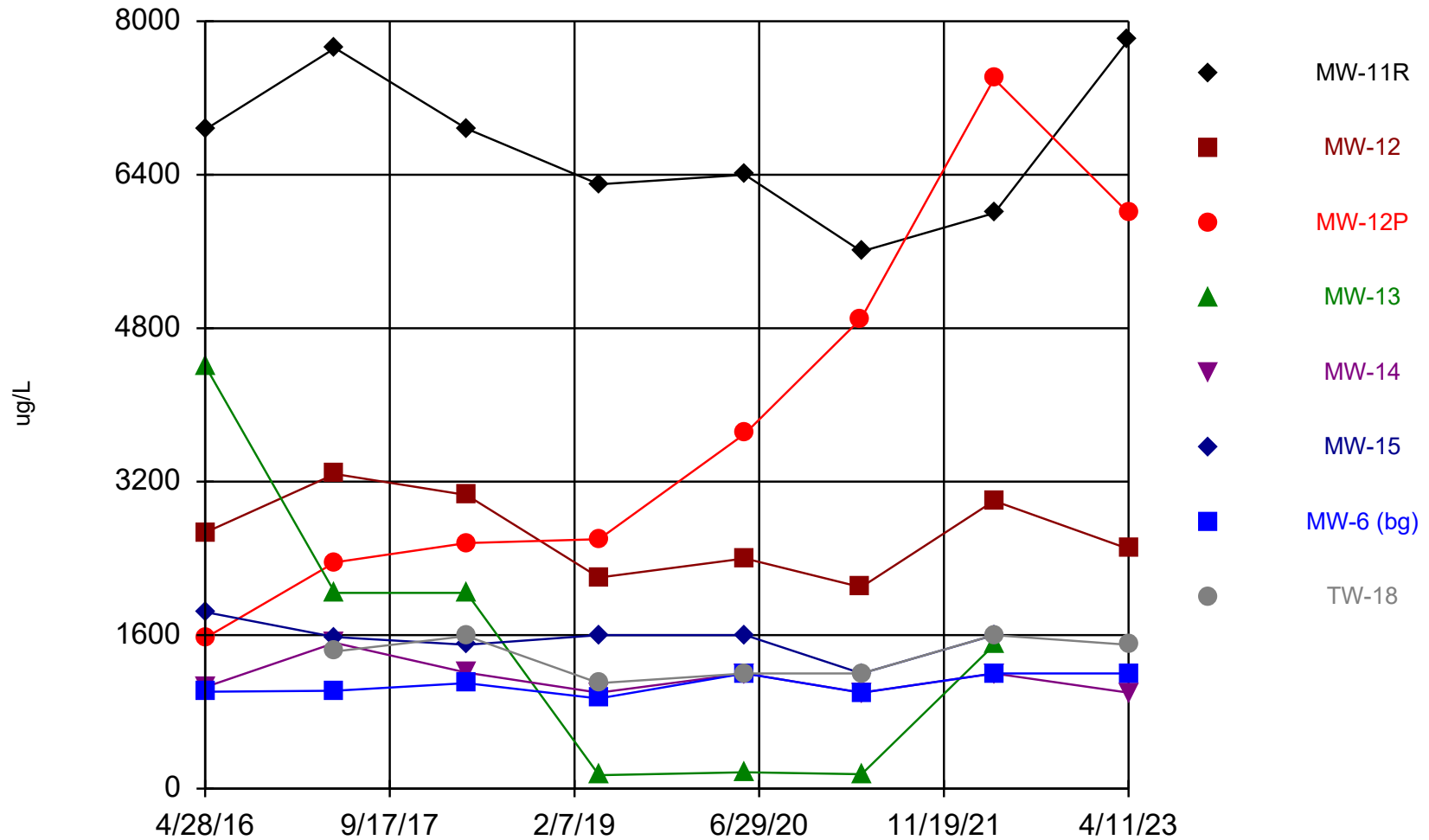
Time Series

Constituent: Oxidation Reduction Potential (millivolts) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/29/2016	-146.9	290.1	154.9	224	140	225.4	243.7	
4/19/2017	-166	-152	321	320	307	319	321	287
4/16/2018	-153	-148	264	9	254	207	290	280
4/15/2019					277		274	
4/16/2019	-148	-147	-14	63		197		245
5/20/2020							119.6	
5/21/2020	-131	-77.8	-30.9	65.5				
5/22/2020					83.1	108.7		91.9
4/6/2021		-52.5	101.9					
4/7/2021	-91.8			153.9	179	176	186.2	184.8
4/6/2022		200.9	201.2		168.4		197.7	202.9
4/7/2022	202.1			202.6		206.2		
6/2/2022	-35.5	-64.3	94	126.4	85.1	99.2		-11.1
4/10/2023	21.6							
4/11/2023		131.4	140.3		68.9		141.4	103.6

Potassium



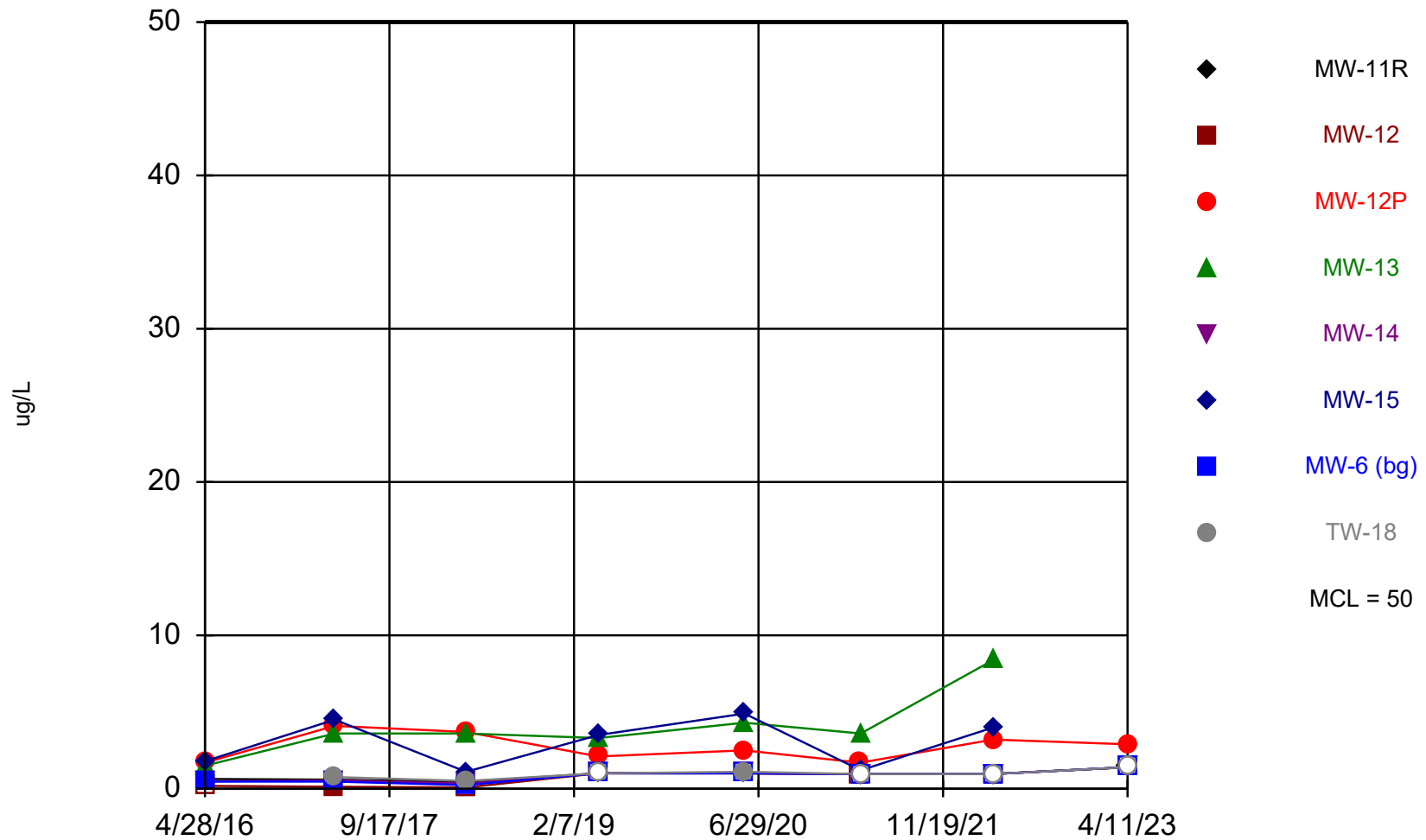
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Potassium (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	6870	2670	1570	4410				
4/29/2016					1060	1840	1010	
4/19/2017							1020	
4/20/2017	7720	3280	2360	2040	1520	1580		1430
4/16/2018							1100	
4/17/2018	6880	3060	2560	2040	1210	1500		1590
4/15/2019					1000		940	
4/16/2019	6300	2200	2600	140 (J)		1600		1100
5/20/2020							1200	
5/21/2020	6400	2400	3700	170 (J)				
5/22/2020					1200	1600		1200
4/6/2021		2100	4900					
4/7/2021	5600			150 (J)	1000	1200	1000	1200
4/6/2022		3000	7400		1200		1200	1600
4/7/2022	6000			1500		1600		
4/10/2023	7800							
4/11/2023		2500	6000		1000		1200	1500

Selenium



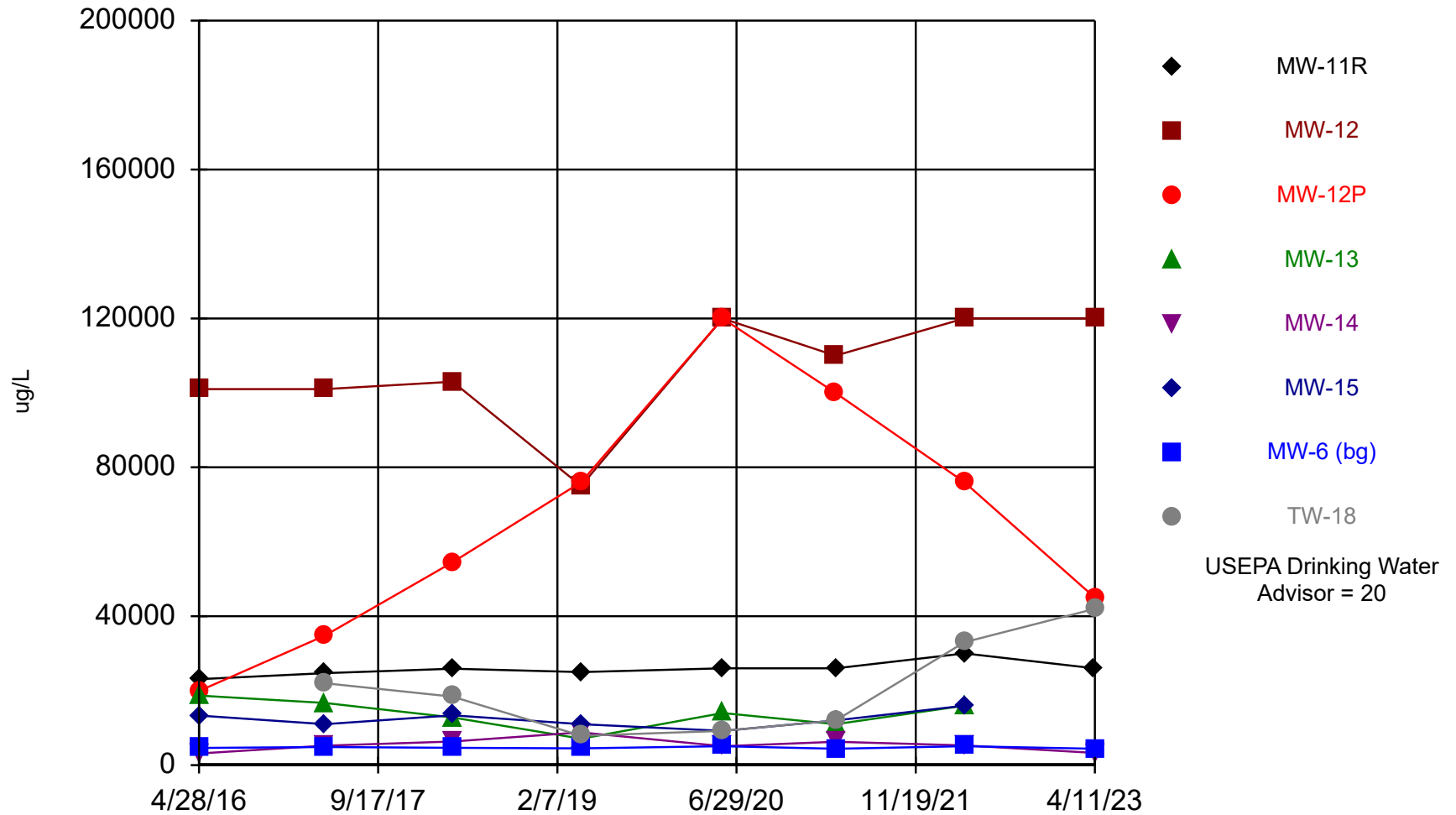
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Selenium (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	0.63 (J)	<0.18	1.7	1.5				
4/29/2016					0.48 (J)	1.8	0.46 (J)	
4/19/2017							0.46 (J)	
4/20/2017	0.59 (J)	0.13 (J)	4.1	3.6	0.54 (J)	4.5		0.76 (J)
4/16/2018							0.24 (J)	
4/17/2018	0.44 (J)	<0.086	3.7	3.6	0.34 (J)	1.1		0.51 (J)
4/15/2019					<1		<1	
4/16/2019	<1	<1	2.1 (J)	3.3 (J)		3.5 (J)		<1
5/20/2020							<1	
5/21/2020	<1	<1	2.5 (J)	4.3 (J)				
5/22/2020					<1	4.9 (J)		1.1 (J)
4/6/2021		<0.96	1.7 (J)					
4/7/2021	<0.96			3.6 (J,B)	<0.96	1.2 (J,B)	<0.96	<0.96
4/6/2022		<0.96 (U)	3.2 (J)		<0.96 (U)		<0.96 (U)	<0.96 (U)
4/7/2022	<0.96 (U)			8.4		4 (J)		
4/10/2023	1.4 (J)							
4/11/2023		<1.4 (U)	2.9 (J)		<1.4 (U)		<1.4 (U)	<1.4 (U)

Sodium



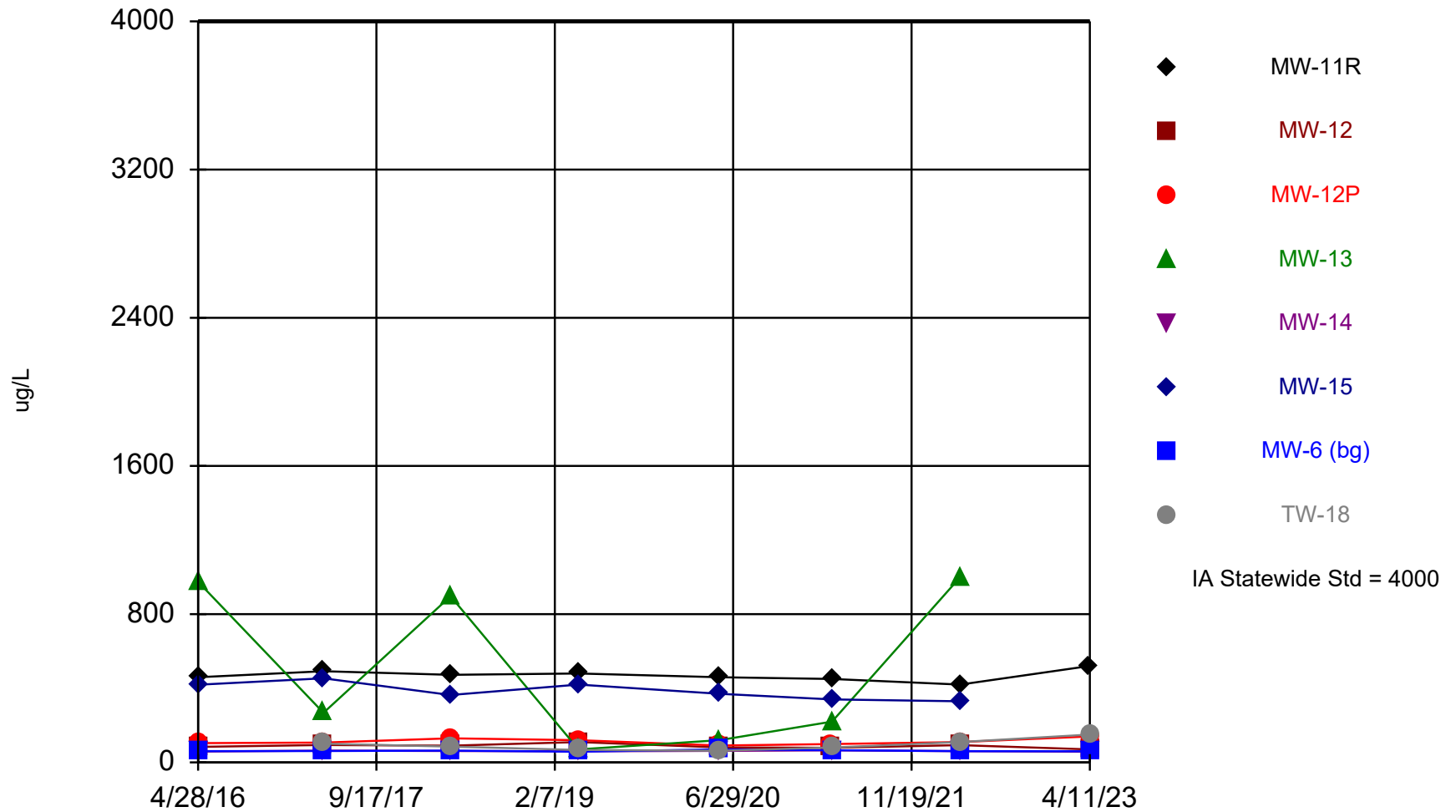
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Sodium (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	23100	101000	19900	18700				
4/29/2016					3140	13300	4610	
4/19/2017							4870	
4/20/2017	24700	101000	34800	16700	5220	11000		22000
4/16/2018							4650	
4/17/2018	25900	103000	54500	12800	6340	13400		18400
4/15/2019					8800		4500	
4/16/2019	25000	75000	76000	7100		11000		7900
5/20/2020							5100	
5/21/2020	26000	120000	120000	14000				
5/22/2020					5100	9200		9200
4/6/2021		110000	100000					
4/7/2021	26000			11000	6300	12000	4400	12000
4/6/2022		120000	76000		5300		5100	33000
4/7/2022	30000			16000		16000		
4/10/2023	26000							
4/11/2023		120000	45000		3300		4400	42000

Strontium



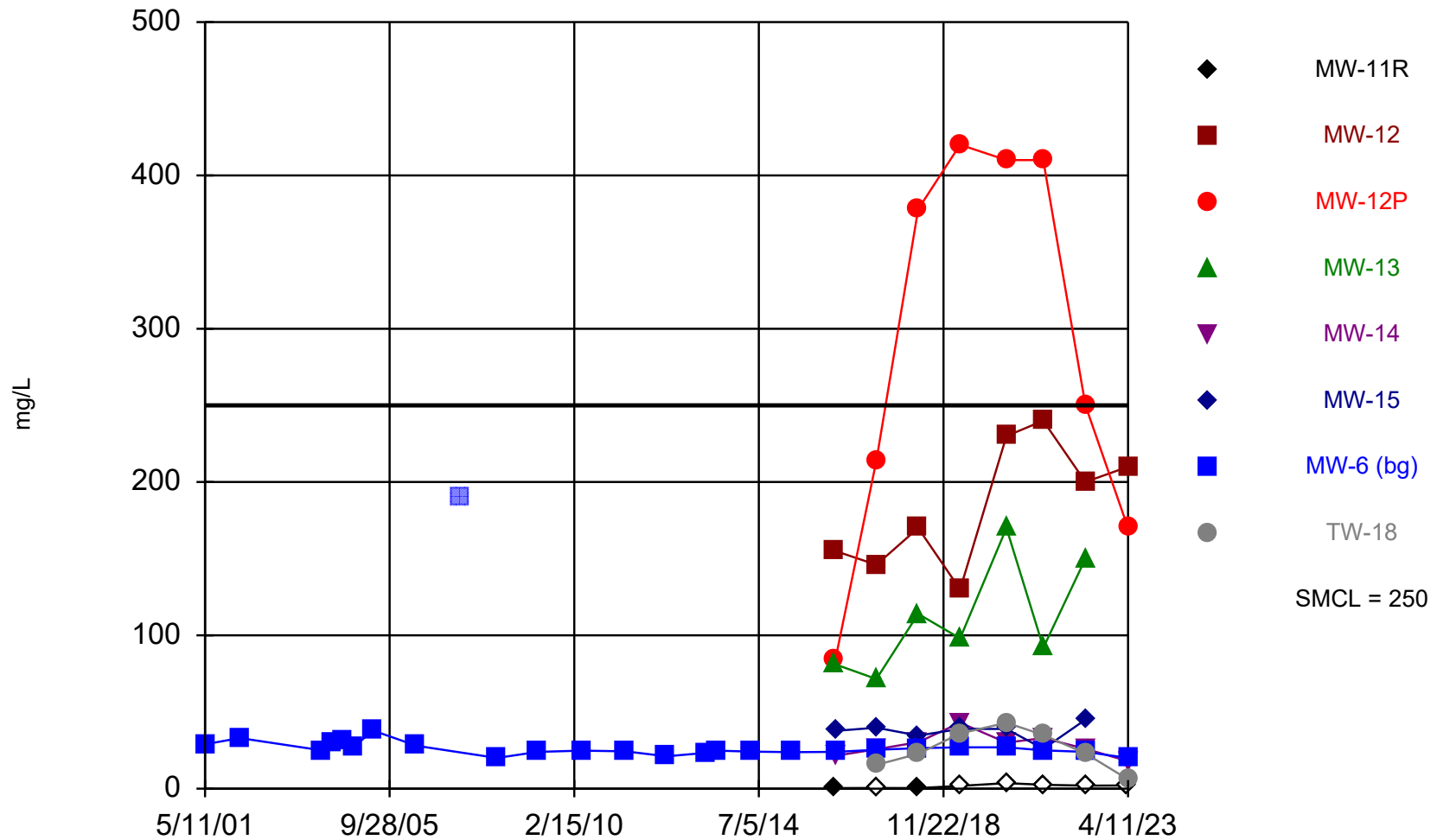
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Strontium (ug/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	460 (Y)	83.9	104 (Y)	975 (Y)				
4/29/2016					58.3 (Y)	419 (Y)	60.7 (Y)	
4/19/2017							61.2 (N2)	
4/20/2017	492 (N2)	94.2 (N2)	107 (N2)	268 (N2)	63.8 (N2)	454 (N2)		101 (N2)
4/16/2018							63.8 (N2)	
4/17/2018	473 (N2)	90.6 (N2)	130 (N2)	897 (N2)	61.6 (N2)	364 (N2)		85.6 (N2)
4/15/2019					60		58	
4/16/2019	480	110	120	70		420		67
5/20/2020							70	
5/21/2020	460	81	91	120				
5/22/2020					62	370		63
4/6/2021		79	99					
4/7/2021	450			220	65	340	66	80
4/6/2022		93	110		61		61	110
4/7/2022	420			1000		330		
4/10/2023	520							
4/11/2023		70	140		58		60	150

Sulfate



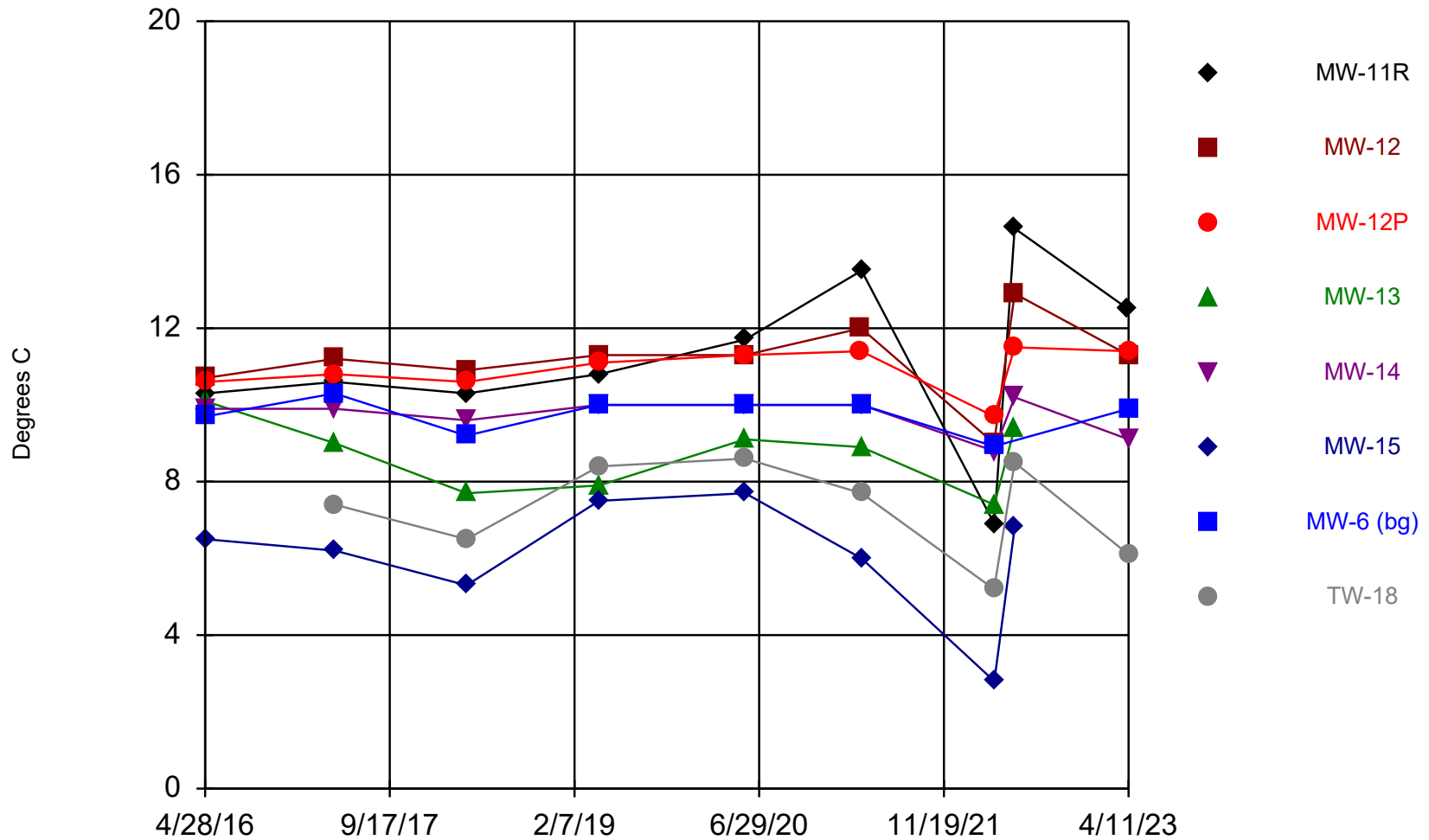
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Sulfate (mg/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
5/11/2001							29	
3/8/2002							33	
2/19/2004							25	
5/26/2004							30	
8/23/2004							31	
11/18/2004							27	
5/5/2005							38	
5/19/2006							28 (J)	
5/30/2007							190 (X)	
4/16/2008							20	
4/3/2009							24	
4/21/2010							24.8	
5/4/2011							24.4	
4/25/2012							21.1	
4/2/2013							23.4	
7/2/2013							24.8	
4/29/2014							24.2	
4/20/2015							23.8	
4/28/2016	0.38 (J,Y)	155	84.1	81.1				
4/29/2016					21.5	37.7	24	
4/19/2017							25.4	
4/20/2017	<0.5	146	214	71.5	25.7	39.8		15.5
4/16/2018							26.4	
4/17/2018	0.39 (J)	170	378	114	30.3	34.6		22.7
4/15/2019					43		27	
4/16/2019	<1.8	130	420	98		39		36
5/20/2020							27	
5/21/2020	<3.6	230	410	170				
5/22/2020					30	39		43
4/6/2021		240	410					
4/7/2021	<2.5			92	33	26	25	35
4/6/2022		200	250		26		24	23
4/7/2022	<2 (U)			150		45		
4/10/2023	<2.1 (U)							
4/11/2023		210	170		18		20	6.1

Temperature, Field



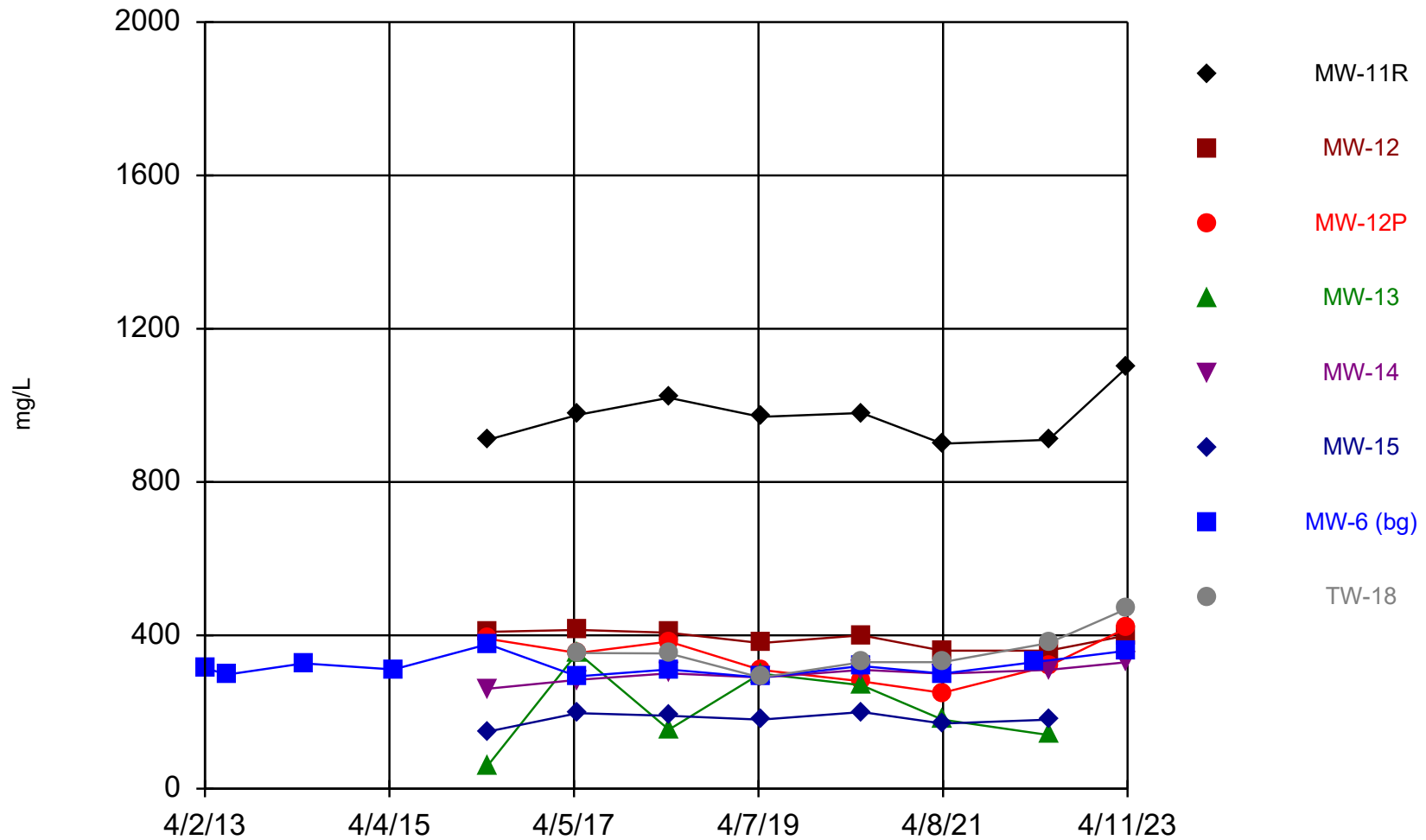
Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Temperature, Field (Degrees C) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	10.3	10.7	10.6	10.1				
4/29/2016					9.9	6.5	9.7	
4/19/2017							10.3	
4/20/2017	10.6	11.2	10.8	9	9.9	6.2		7.4
4/16/2018							9.2	
4/17/2018	10.3	10.9	10.6	7.7	9.6	5.3		6.5
4/15/2019					10		10	
4/16/2019	10.8	11.3	11.1	7.9		7.5		8.4
5/20/2020							10	
5/21/2020	11.7	11.3	11.3	9.1				
5/22/2020					10	7.7		8.6
4/6/2021		12	11.4					
4/7/2021	13.5			8.9	10	6	10	7.7
4/6/2022		9	9.7		8.8		8.92	5.2
4/7/2022	6.9			7.4		2.8		
6/2/2022	14.6	12.9	11.5	9.4	10.2	6.8		8.5
4/10/2023	12.5							
4/11/2023		11.3	11.4		9.1		9.9	6.1

Total Alkalinity



Time Series Analysis Run 7/13/2023 3:01 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Time Series

Constituent: Total Alkalinity (mg/L) Analysis Run 7/13/2023 3:02 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/2/2013							314	
7/2/2013							298	
4/29/2014							327	
4/20/2015							311	
4/28/2016	910	409	391	60.2				
4/29/2016					261	149	377	
4/19/2017							293	
4/20/2017	975	414	354	355	284	197		354
4/16/2018							311	
4/17/2018	1020	407	384	154	301	190		353
4/15/2019					290		290	
4/16/2019	970	380	310	300		180		290
5/20/2020							320	
5/21/2020	980	400	280	270				
5/22/2020					310	200		330
4/6/2021		360	250					
4/7/2021	900			180	300	170	300	330
4/6/2022							330	
6/2/2022	910	360	320	140	310	180		380
4/10/2023	1100							
4/11/2023		400	420		330		360	470

Attachment D2

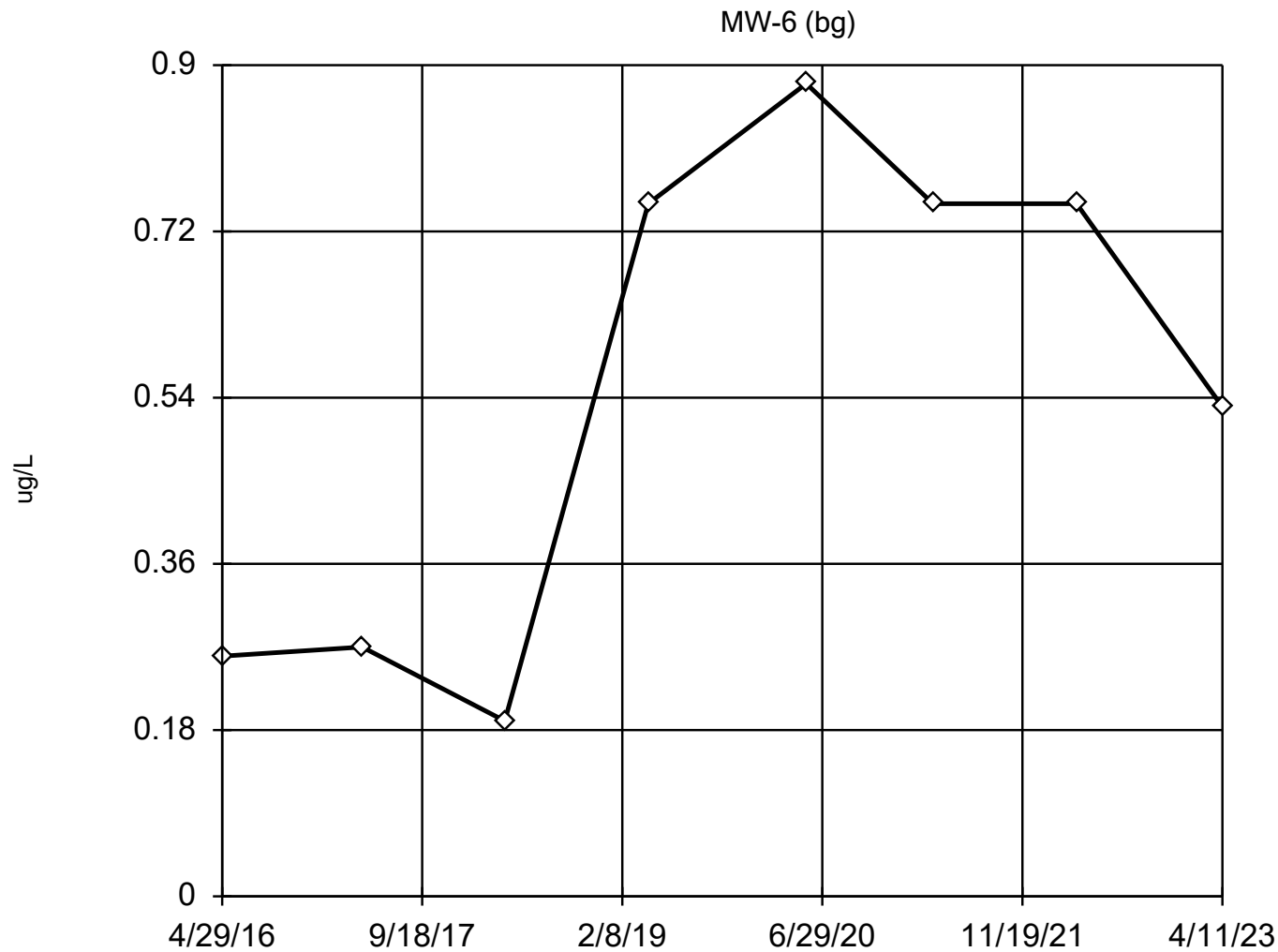
Outlier Analysis Results

Outlier Analysis

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions Printed 10/2/2023, 8:48 AM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Distribution</u>	<u>Normality Test</u>
Arsenic (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	0.5475	0.2729	normal	ShapiroWilk
Barium (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	45.85	2.517	normal	ShapiroWilk
Boron (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	60.1	27.06	normal	ShapiroWilk
Calcium (mg/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	71.15	5.151	normal	ShapiroWilk
Chloride (mg/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	26	5.748	2.527	unknown	ShapiroWilk
Cobalt (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	0.1591	0.1513	ln(x)	ShapiroWilk
Copper (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	1.354	1.079	normal	ShapiroWilk
Field pH (SU)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	15	7.352	0.1682	normal	ShapiroWilk
Iron (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	34.19	18.46	normal	ShapiroWilk
Magnesium (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	38038	2255	normal	ShapiroWilk
Manganese (ug/L)	MW-6 (bg)	No	n/a	n/a	Dixon`s	0.05	8	2.71	1.432	normal	ShapiroWilk
Nickel (ug/L)	MW-6 (bg)	No	n/a	n/a	NP (nrm)	NaN	8	1.296	0.7838	unknown	ShapiroWilk
Potassium (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	1084	105.6	normal	ShapiroWilk
Selenium (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	0.81	0.3846	normal	ShapiroWilk
Sodium (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	4704	287.7	normal	ShapiroWilk
Strontium (ug/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	8	62.59	3.851	normal	ShapiroWilk
Sulfate (mg/L)	MW-6 (bg)	Yes	190	5/30/2007	Rosner`s	0.01	26	32.32	32.4	ln(x)	ShapiroWilk
Total Alkalinity (mg/L)	MW-6 (bg)	No	n/a	n/a	EPA 1989	0.05	12	319.3	26.46	normal	ShapiroWilk

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.5475, std. dev. 0.2729, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.8575
Critical = 0.851
The distribution was found to be normally distributed.

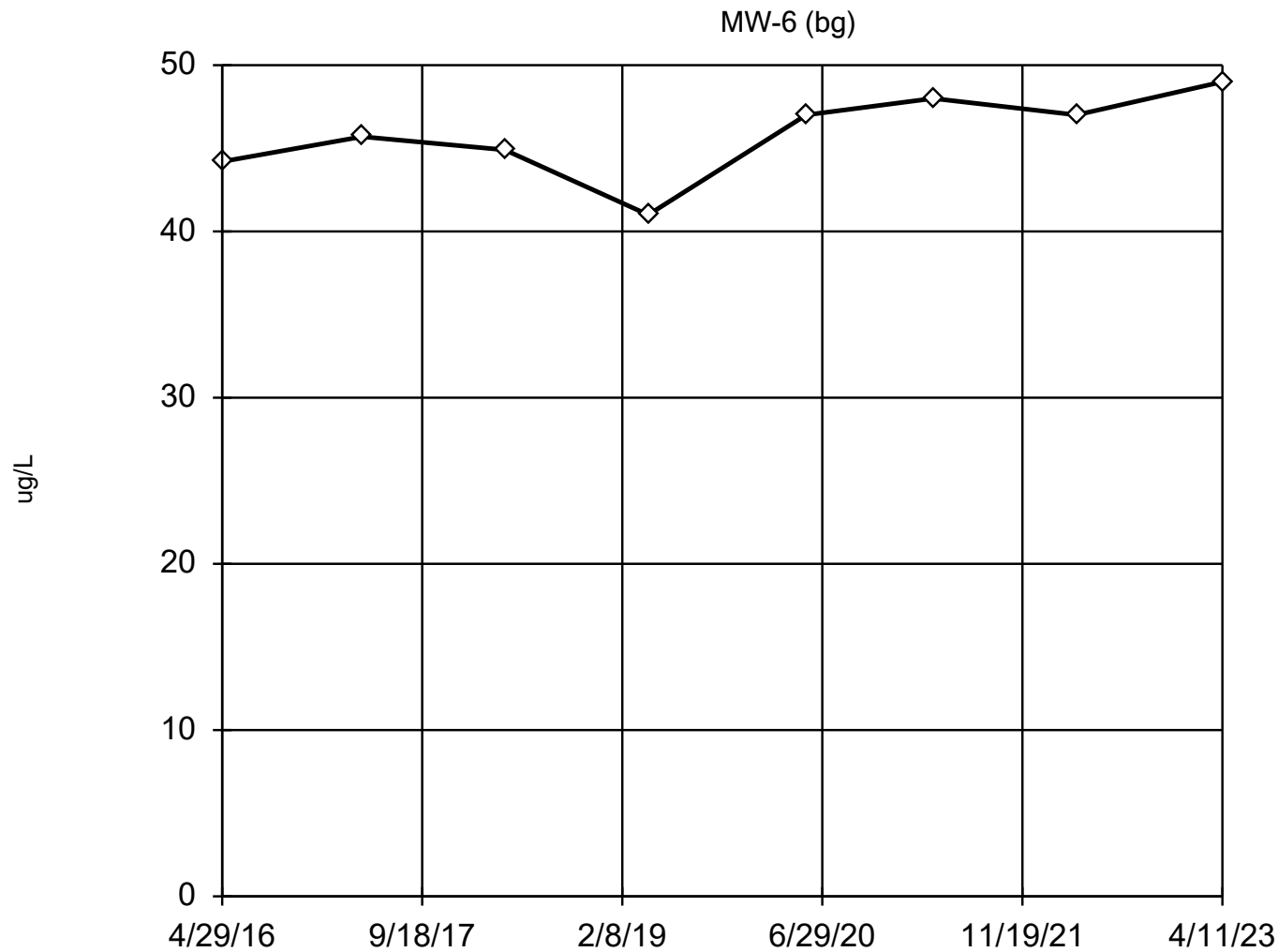
Constituent: Arsenic Analysis Run 10/2/2023 8:46 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

EPA 1989 Outlier Screening

Constituent: Arsenic (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)
4/29/2016	0.26 (J)
4/19/2017	0.27 (J)
4/16/2018	0.19 (J)
4/15/2019	<0.75
5/20/2020	<0.88
4/7/2021	<0.75
4/6/2022	<0.75 (U)
4/11/2023	<0.53 (U)

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 45.85, std. dev. 2.517, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9474
Critical = 0.851
The distribution was found to be normally distributed.

Constituent: Barium Analysis Run 10/2/2023 8:46 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

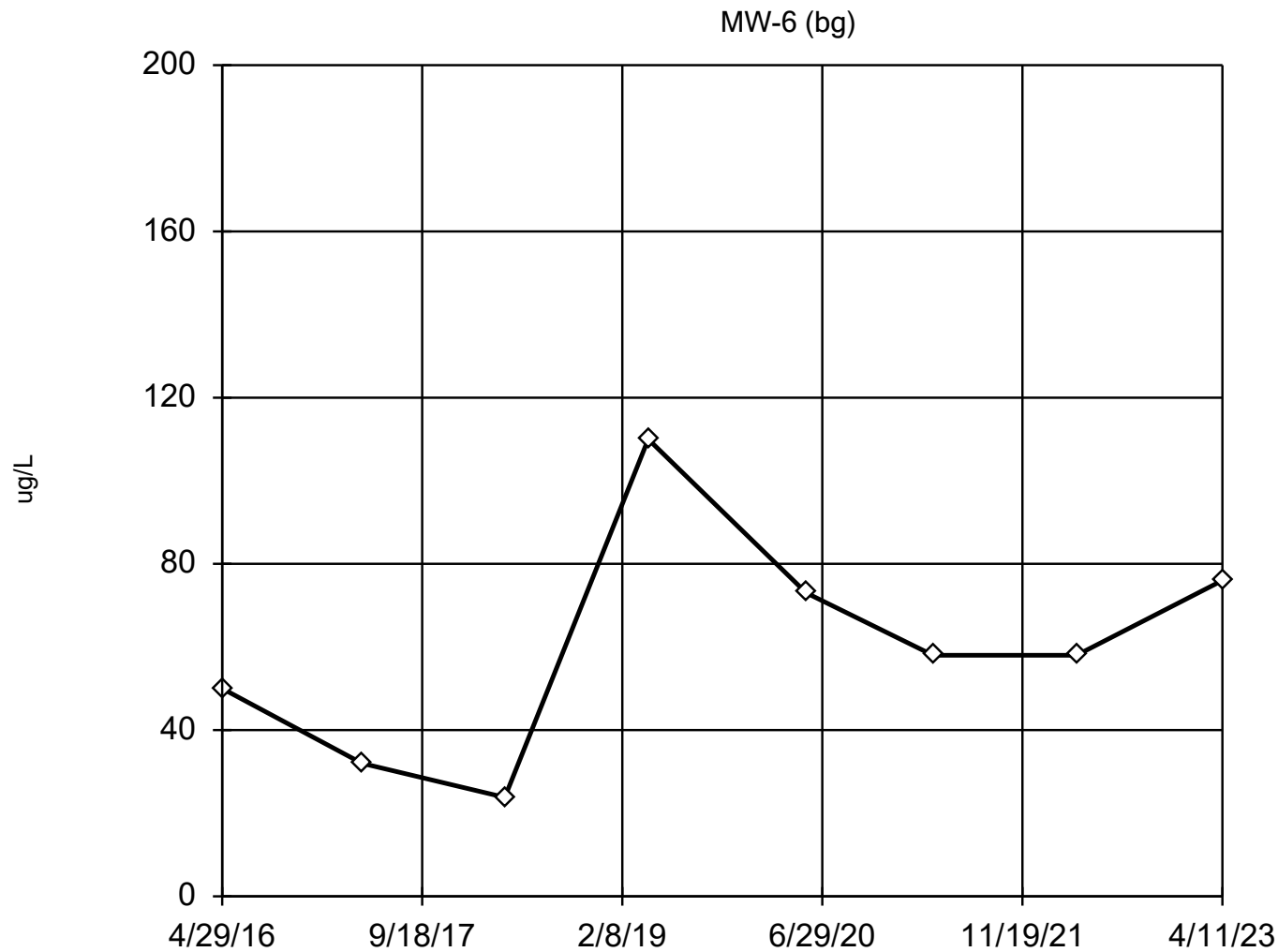
EPA 1989 Outlier Screening

Constituent: Barium (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

4/29/2016	44.2
4/19/2017	45.7
4/16/2018	44.9
4/15/2019	41 (B)
5/20/2020	47
4/7/2021	48
4/6/2022	47
4/11/2023	49

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 60.1, std. dev. 27.06, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9584
Critical = 0.851
The distribution was found to be normally distributed.

Constituent: Boron Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

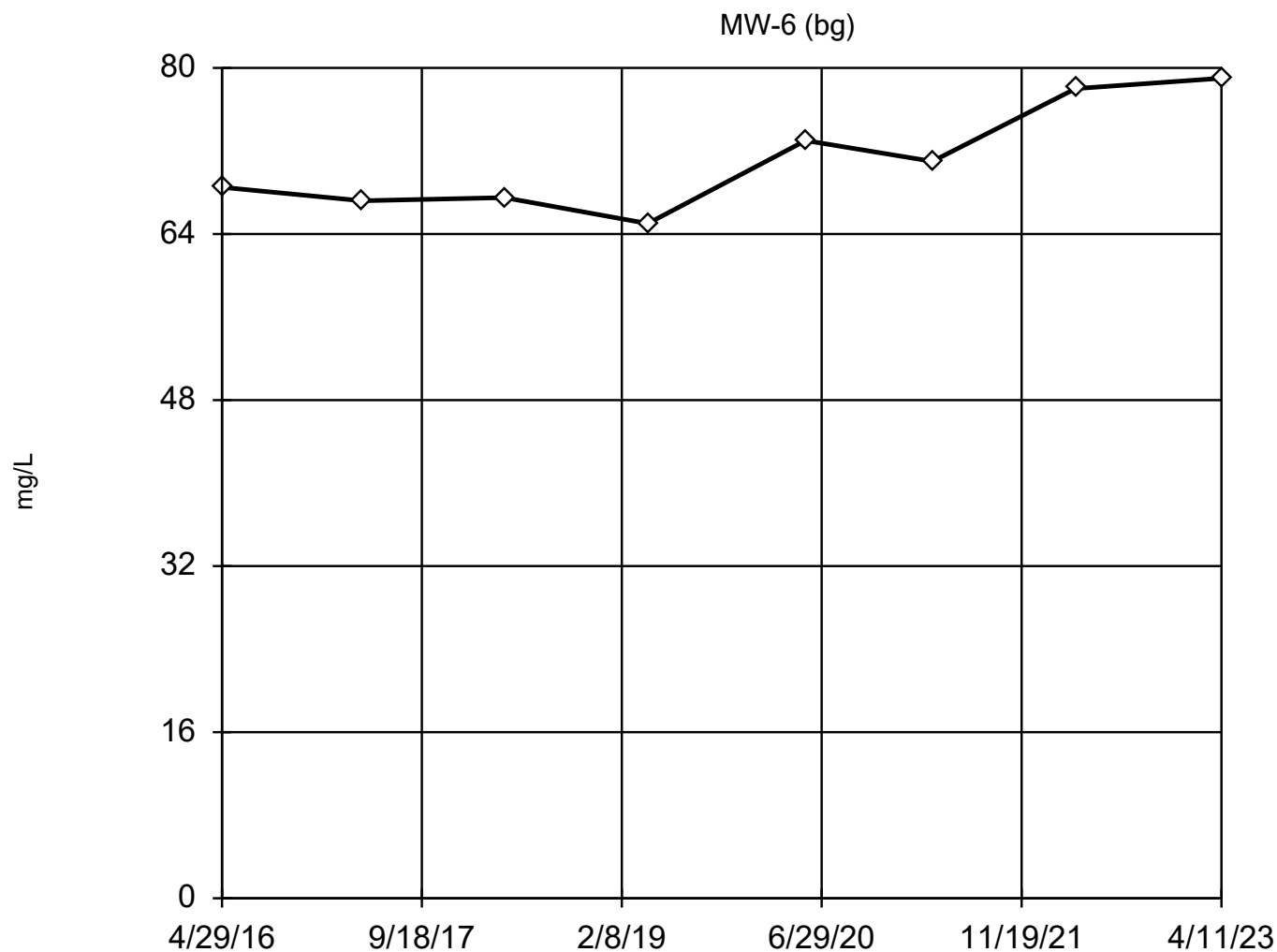
EPA 1989 Outlier Screening

Constituent: Boron (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

4/29/2016	<50
4/19/2017	32 (J,B)
4/16/2018	23.8 (J)
4/15/2019	<110
5/20/2020	<73
4/7/2021	<58
4/6/2022	<58 (U)
4/11/2023	<76 (U)

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 71.15, std. dev. 5.151, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9082
Critical = 0.851
The distribution was found to be normally distributed.

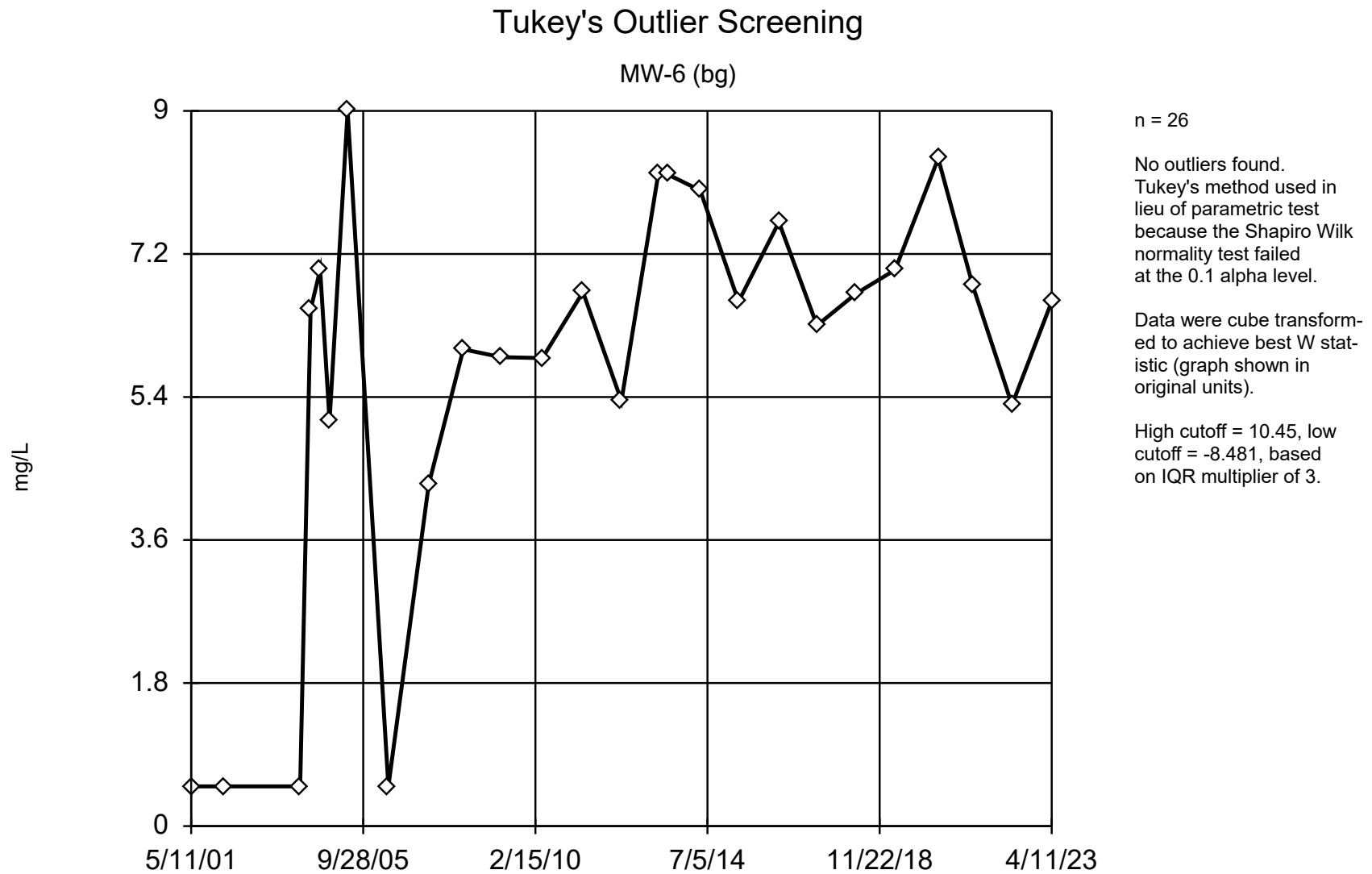
Constituent: Calcium Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

EPA 1989 Outlier Screening

Constituent: Calcium (mg/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

4/29/2016	68.5
4/19/2017	67.2
4/16/2018	67.5
4/15/2019	65
5/20/2020	73
4/7/2021	71
4/6/2022	78
4/11/2023	79



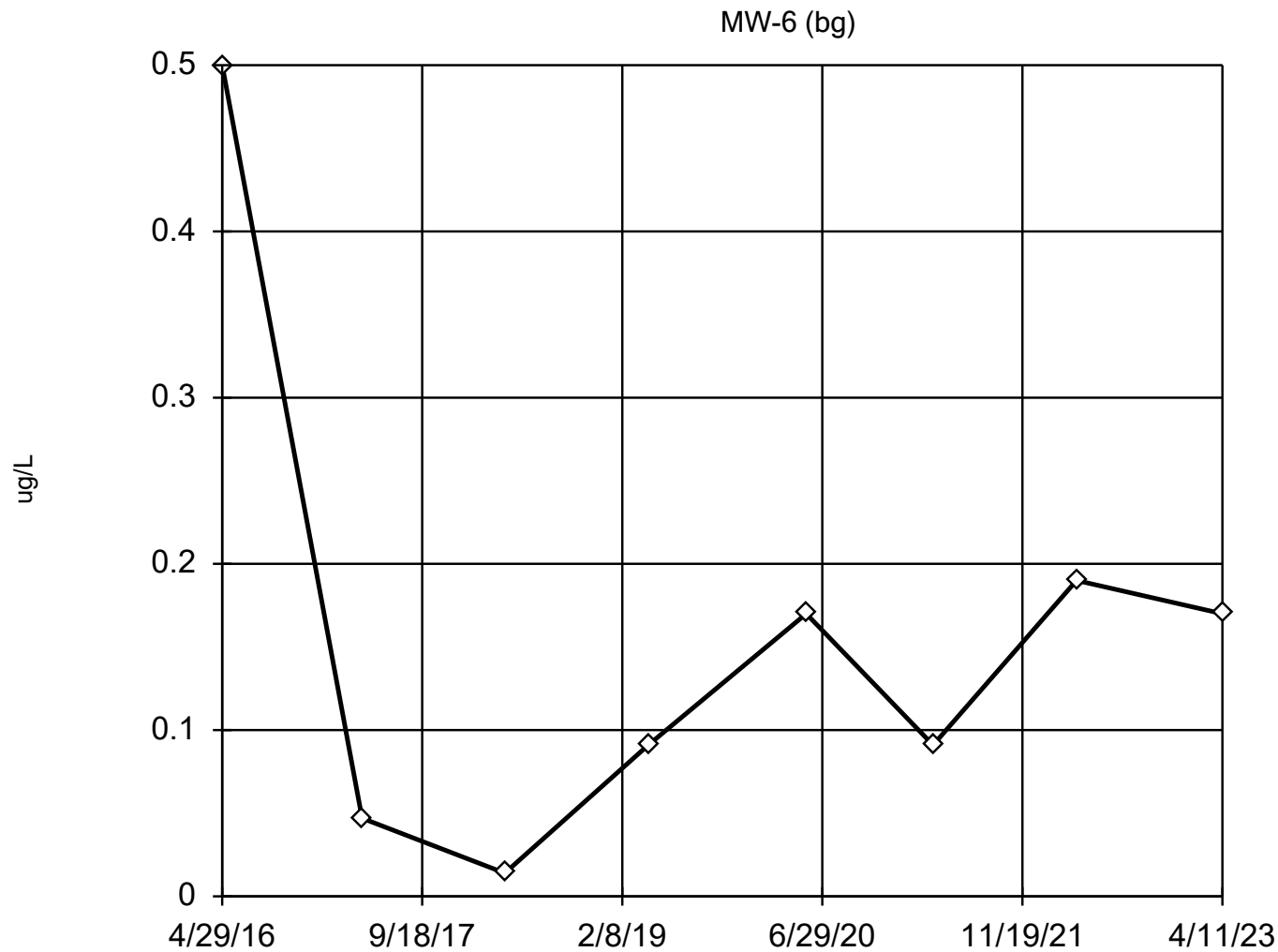
Constituent: Chloride Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Tukey's Outlier Screening

Constituent: Chloride (mg/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)
5/11/2001	<0.5 (X)
3/8/2002	<0.5 (X)
2/19/2004	<0.5 (X)
5/26/2004	6.5
8/23/2004	7
11/18/2004	5.1
5/5/2005	9
5/19/2006	<0.5 (X)
5/30/2007	4.3
4/16/2008	6
4/3/2009	5.9
4/21/2010	5.89
5/4/2011	6.72
4/25/2012	5.35
4/2/2013	8.2
7/2/2013	8.2
4/29/2014	8
4/20/2015	6.6
4/29/2016	7.6
4/19/2017	6.3
4/16/2018	6.7
4/15/2019	7
5/20/2020	8.4
4/7/2021	6.8
4/6/2022	5.3
4/11/2023	6.6

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.1591, std. dev. 0.1513, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9454
Critical = 0.851 (after natural log transformation)
The distribution was found to be log-normal.

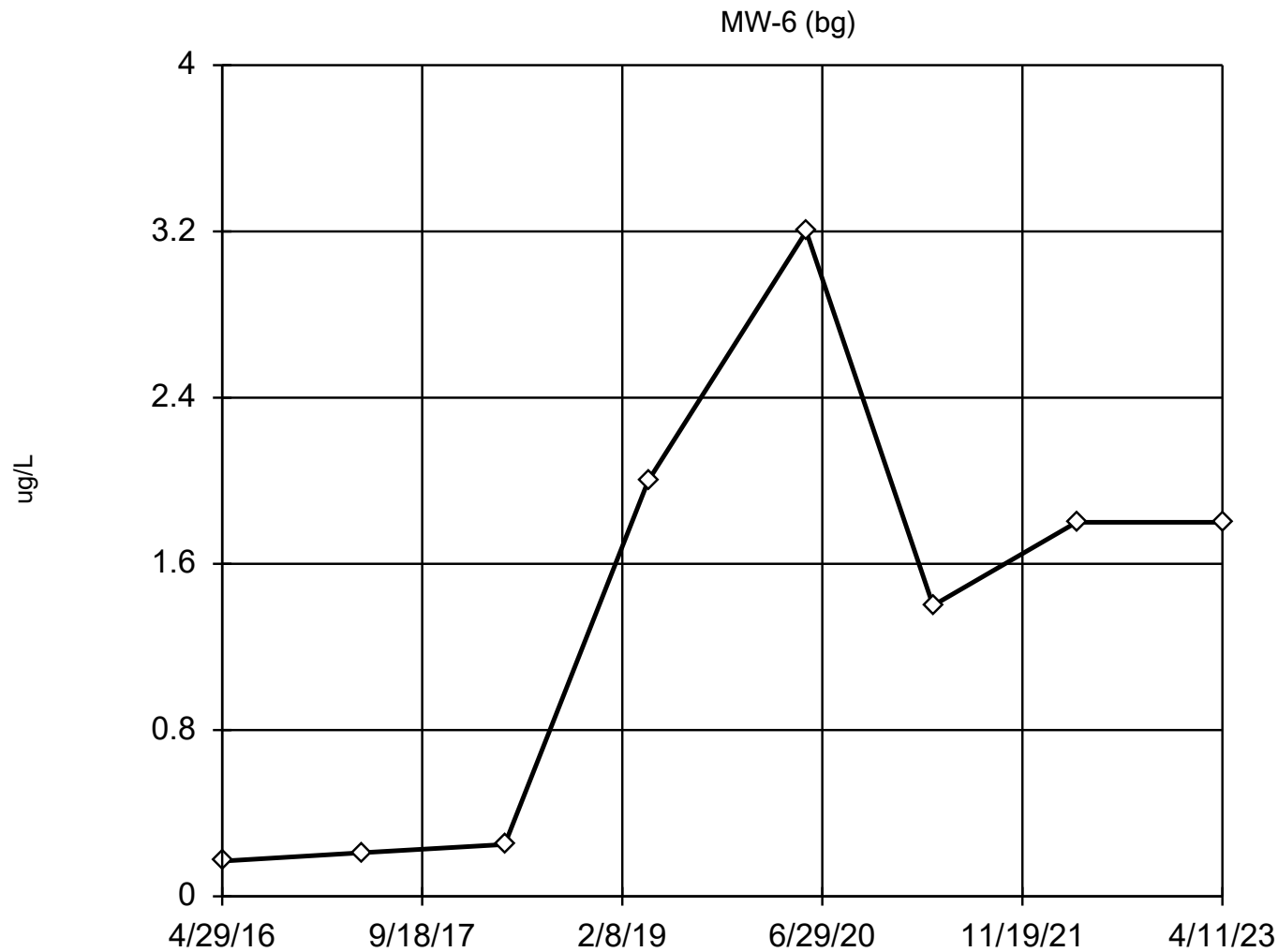
Constituent: Cobalt Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

EPA 1989 Outlier Screening

Constituent: Cobalt (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)
4/29/2016	<0.5
4/19/2017	0.047 (J,B)
4/16/2018	<0.014
4/15/2019	<0.091
5/20/2020	0.17 (J)
4/7/2021	<0.091
4/6/2022	<0.19 (U)
4/11/2023	<0.17 (U)

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 1.354, std. dev. 1.079, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.8892
Critical = 0.851
The distribution was found to be normally distributed.

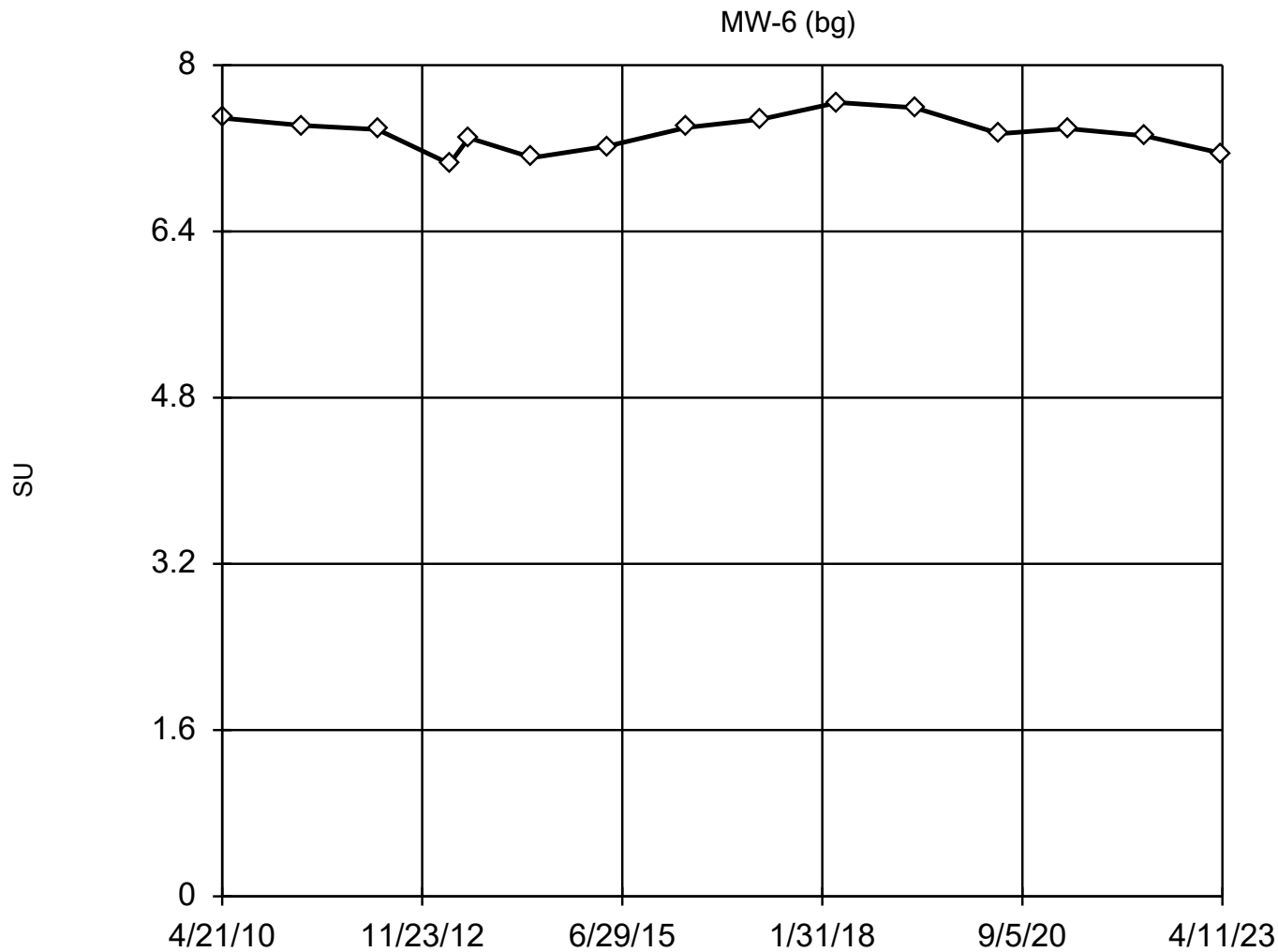
Constituent: Copper Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

EPA 1989 Outlier Screening

Constituent: Copper (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)
4/29/2016	0.17 (J,Y)
4/19/2017	0.21 (J,B)
4/16/2018	0.25 (J,B)
4/15/2019	<2
5/20/2020	<3.2
4/7/2021	<1.4
4/6/2022	<1.8 (U)
4/11/2023	<1.8 (U)

EPA Screening (suspected outliers for Dixon's Test)



n = 15

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 7.352, std. dev. 0.1682, critical Tn 2.409

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9757
Critical = 0.901
The distribution was found to be normally distributed.

Constituent: Field pH Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

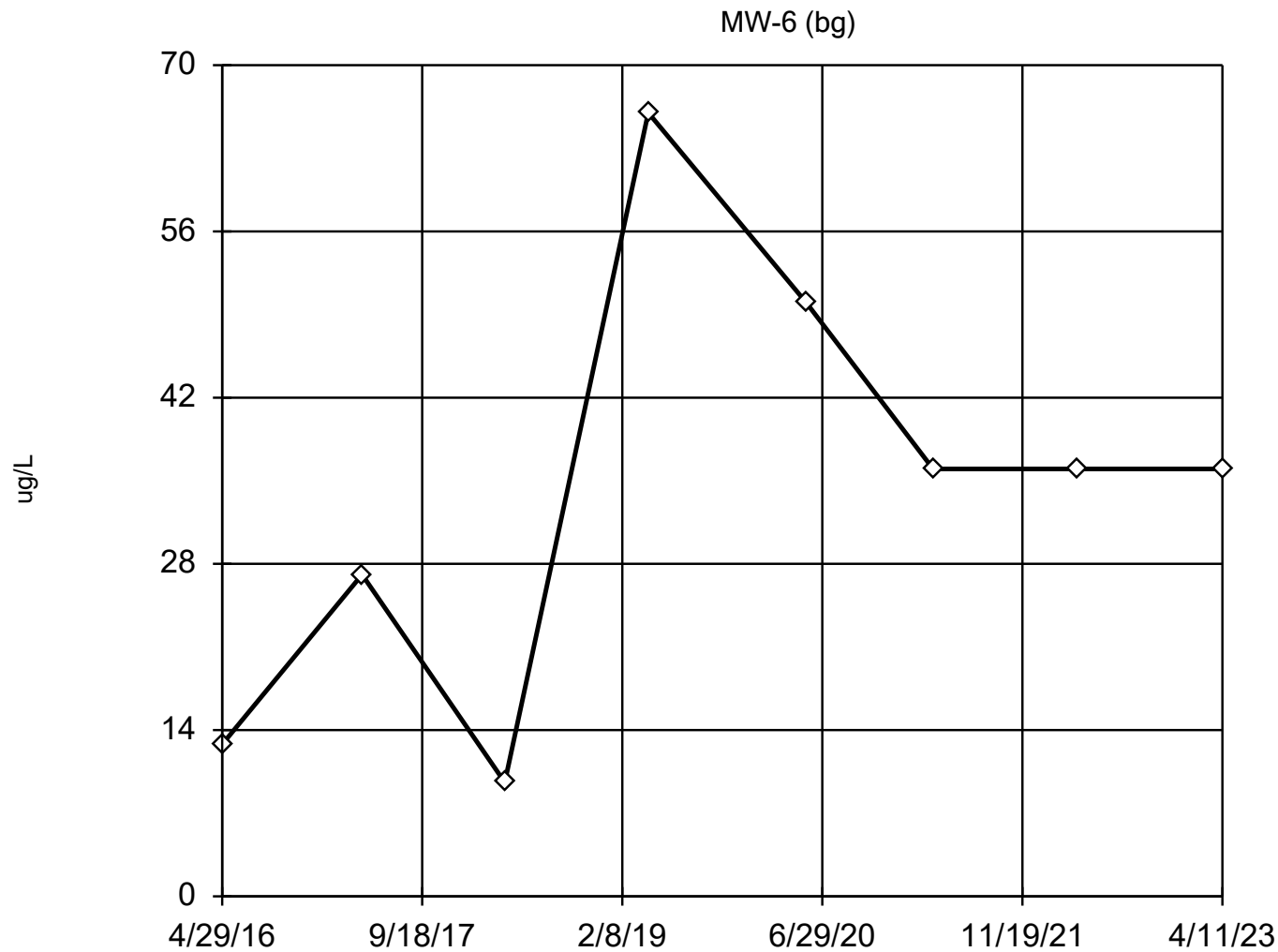
EPA 1989 Outlier Screening

Constituent: Field pH (SU) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

4/21/2010	7.49
5/4/2011	7.42
4/25/2012	7.38
4/2/2013	7.05
7/2/2013	7.3
4/29/2014	7.11
4/20/2015	7.22
4/29/2016	7.4
4/19/2017	7.48
4/16/2018	7.64
4/15/2019	7.59
5/20/2020	7.34
4/7/2021	7.39
4/6/2022	7.32
4/11/2023	7.15

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 34.19, std. dev. 18.46, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9446
Critical = 0.851
The distribution was found to be normally distributed.

Constituent: Iron Analysis Run 10/2/2023 8:47 AM View: Lansing State Data

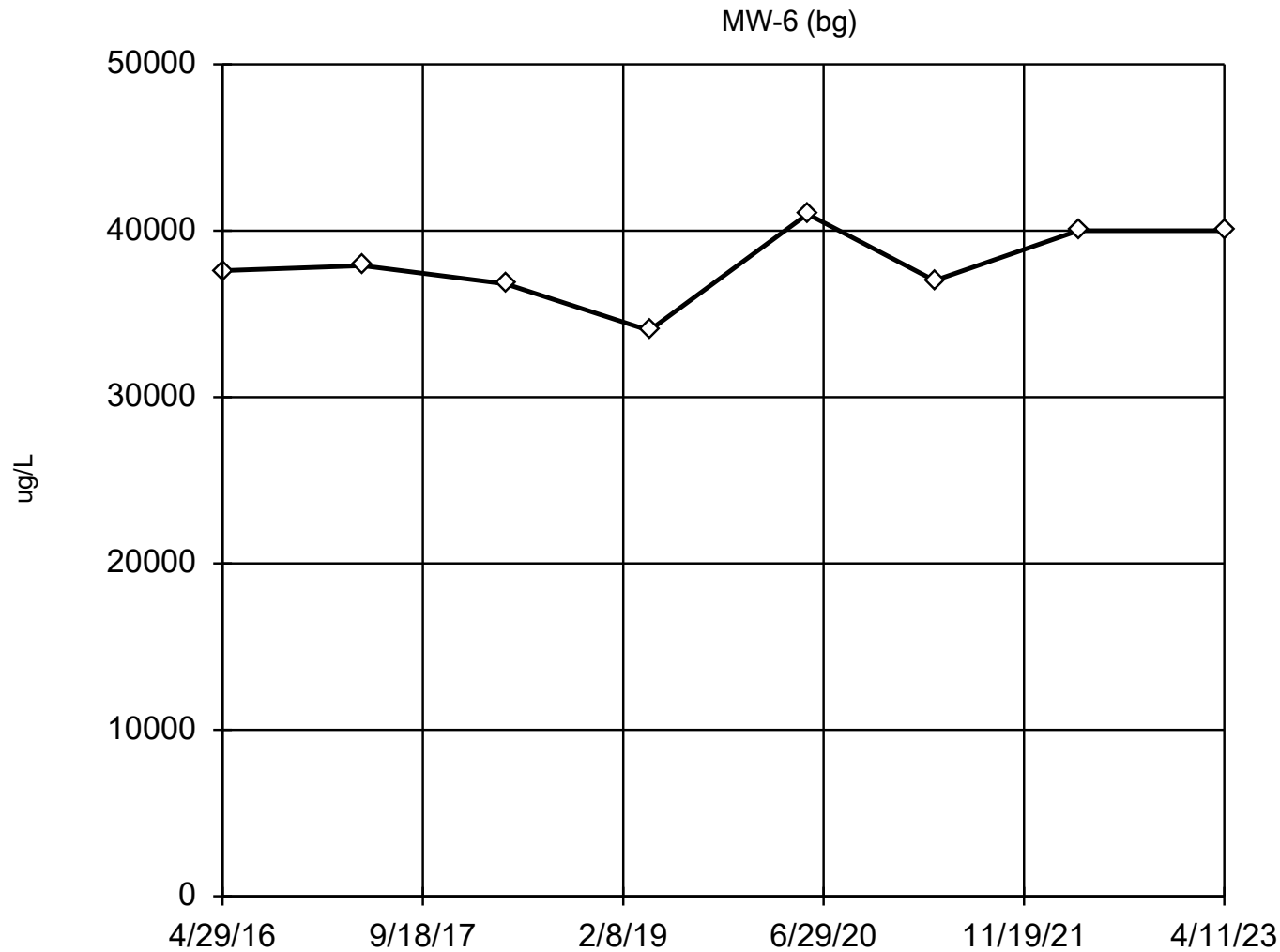
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

EPA 1989 Outlier Screening

Constituent: Iron (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)
4/29/2016	<12.8
4/19/2017	27.1 (J,B)
4/16/2018	<9.6
4/15/2019	<66
5/20/2020	<50
4/7/2021	<36
4/6/2022	<36 (U)
4/11/2023	<36 (U)

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 38038, std. dev. 2255, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9413
Critical = 0.851
The distribution was found to be normally distributed.

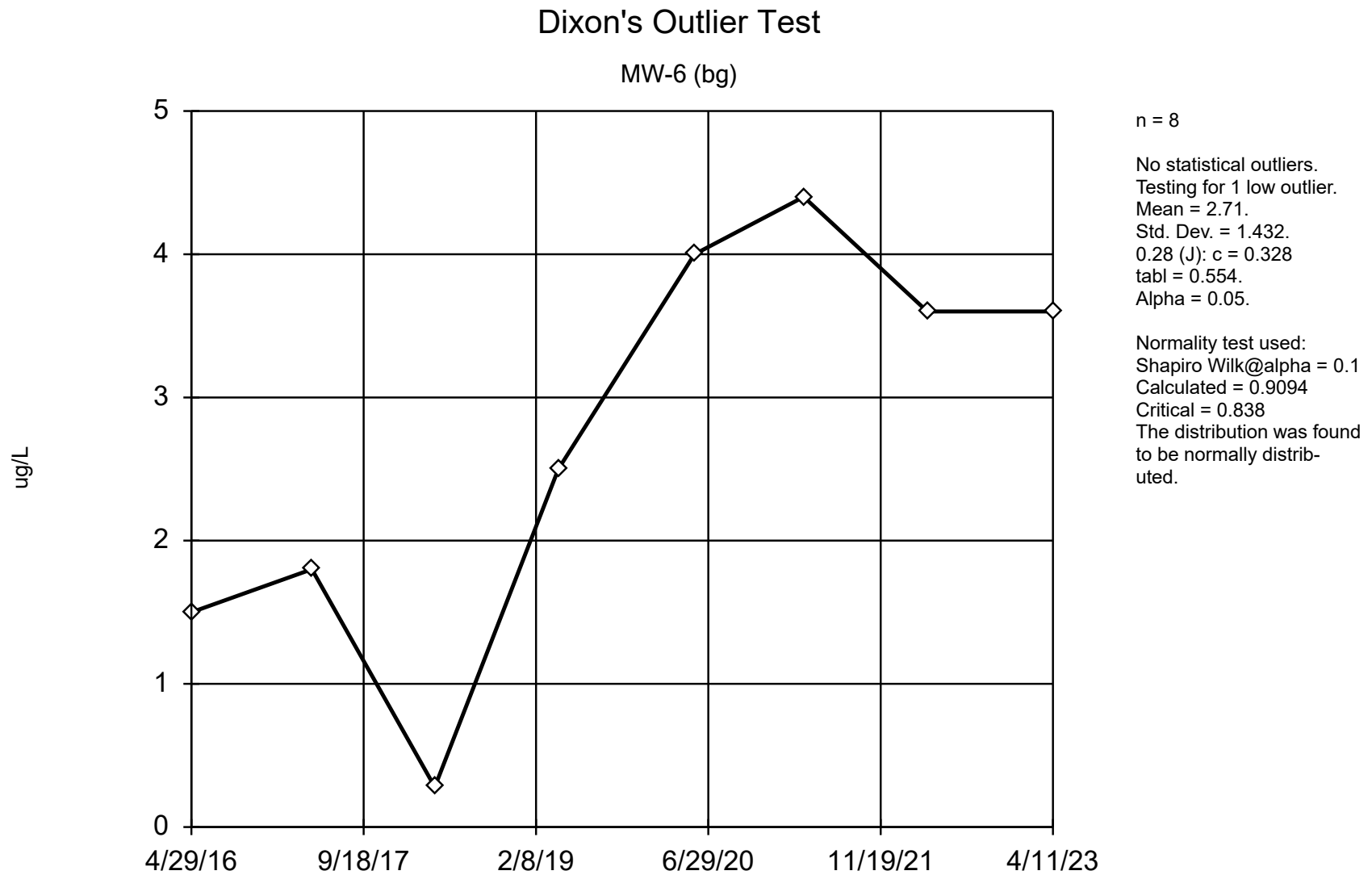
Constituent: Magnesium Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

EPA 1989 Outlier Screening

Constituent: Magnesium (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

4/29/2016	37600
4/19/2017	37900
4/16/2018	36800
4/15/2019	34000
5/20/2020	41000
4/7/2021	37000
4/6/2022	40000
4/11/2023	40000



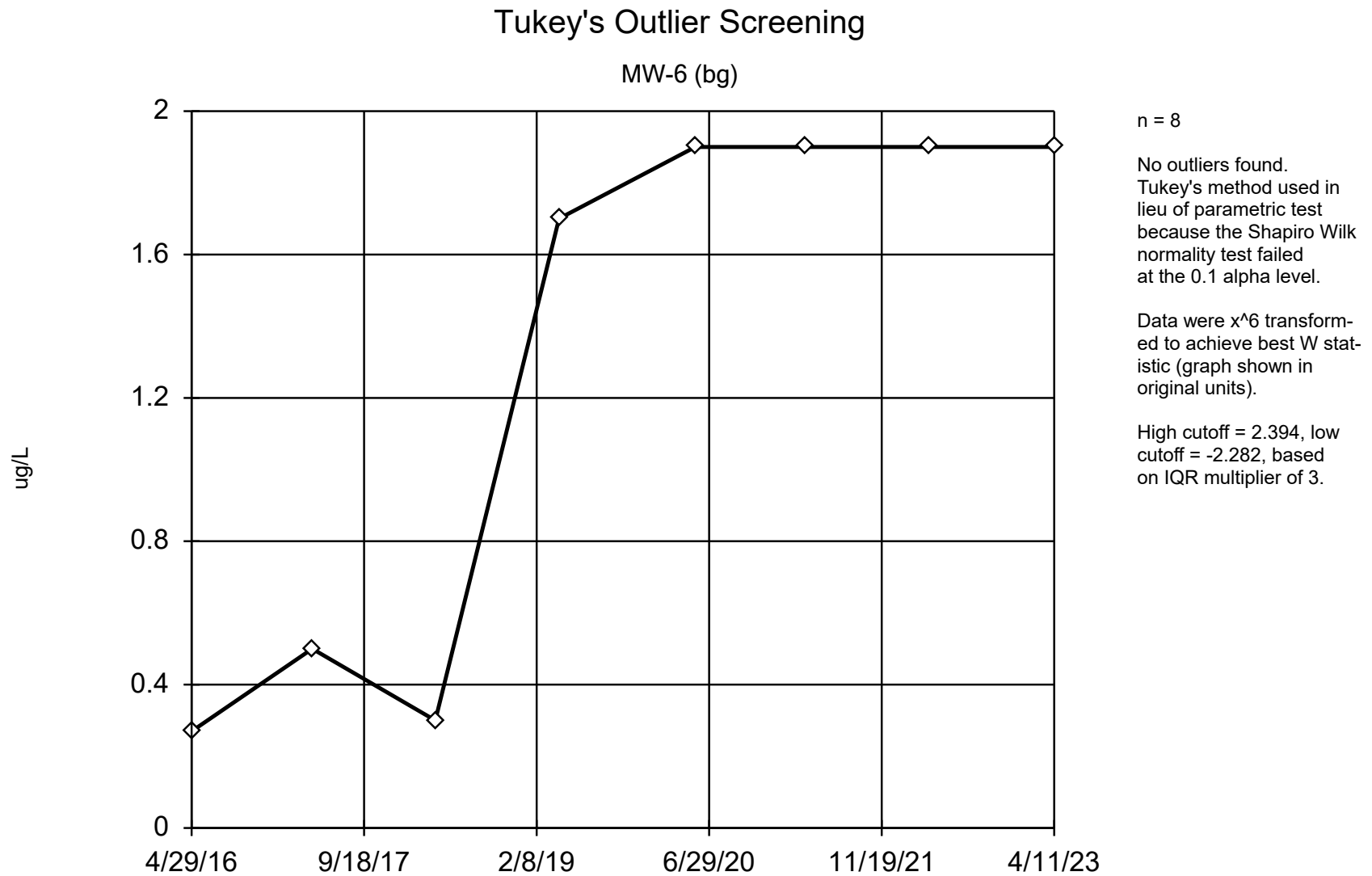
Constituent: Manganese Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Dixon's Outlier Test

Constituent: Manganese (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

4/29/2016	1.5 (Y)
4/19/2017	1.8 (B)
4/16/2018	0.28 (J)
4/15/2019	<2.5
5/20/2020	<4
4/7/2021	<4.4
4/6/2022	<3.6 (U)
4/11/2023	<3.6 (U)



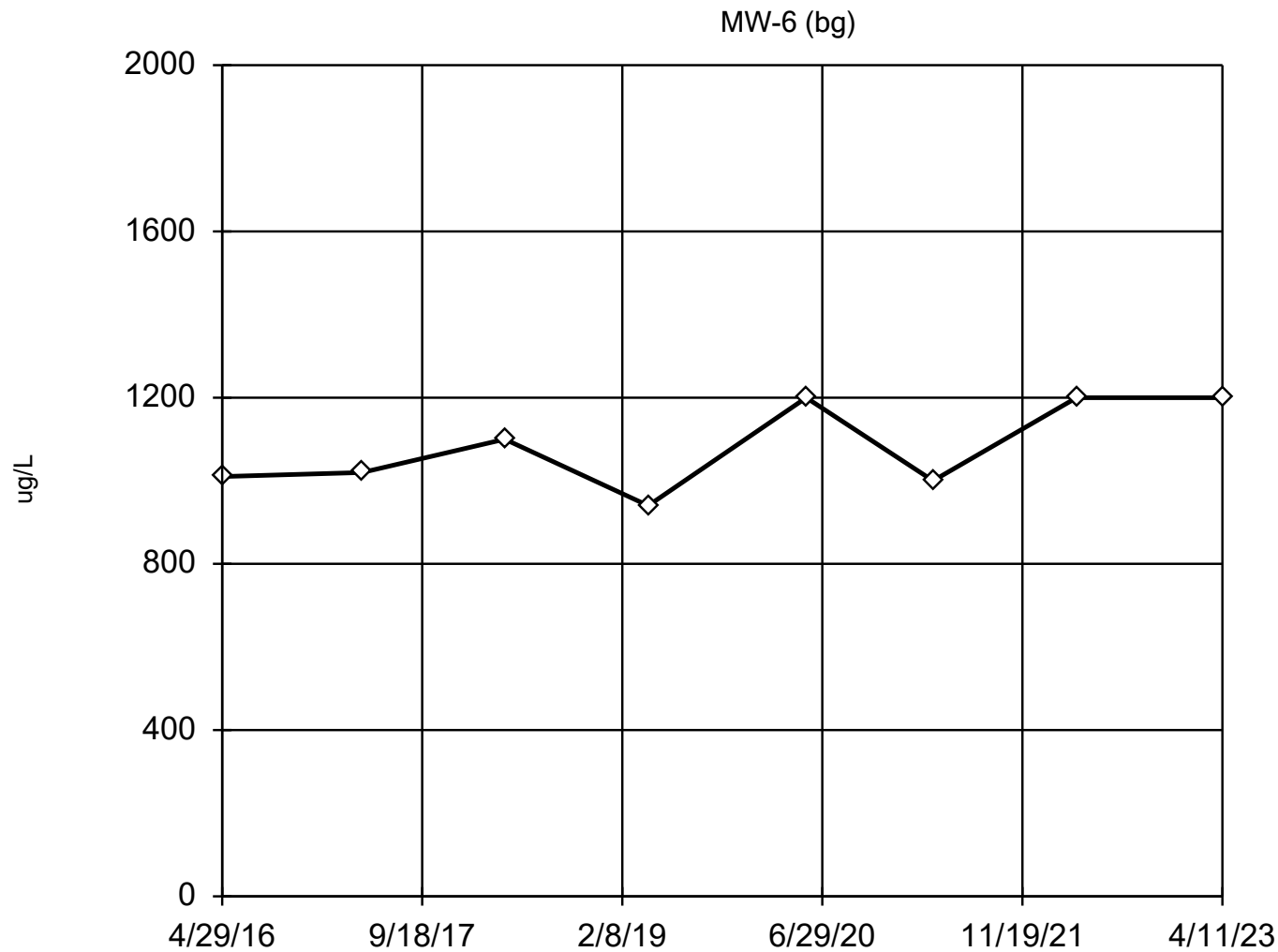
Constituent: Nickel Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Tukey's Outlier Screening

Constituent: Nickel (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)
4/29/2016	<0.27
4/19/2017	0.5 (J,B)
4/16/2018	0.3 (J)
4/15/2019	<1.7
5/20/2020	<1.9
4/7/2021	<1.9
4/6/2022	<1.9 (U)
4/11/2023	<1.9 (U)

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 1084, std. dev. 105.6, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.8551
Critical = 0.851
The distribution was found to be normally distributed.

Constituent: Potassium Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

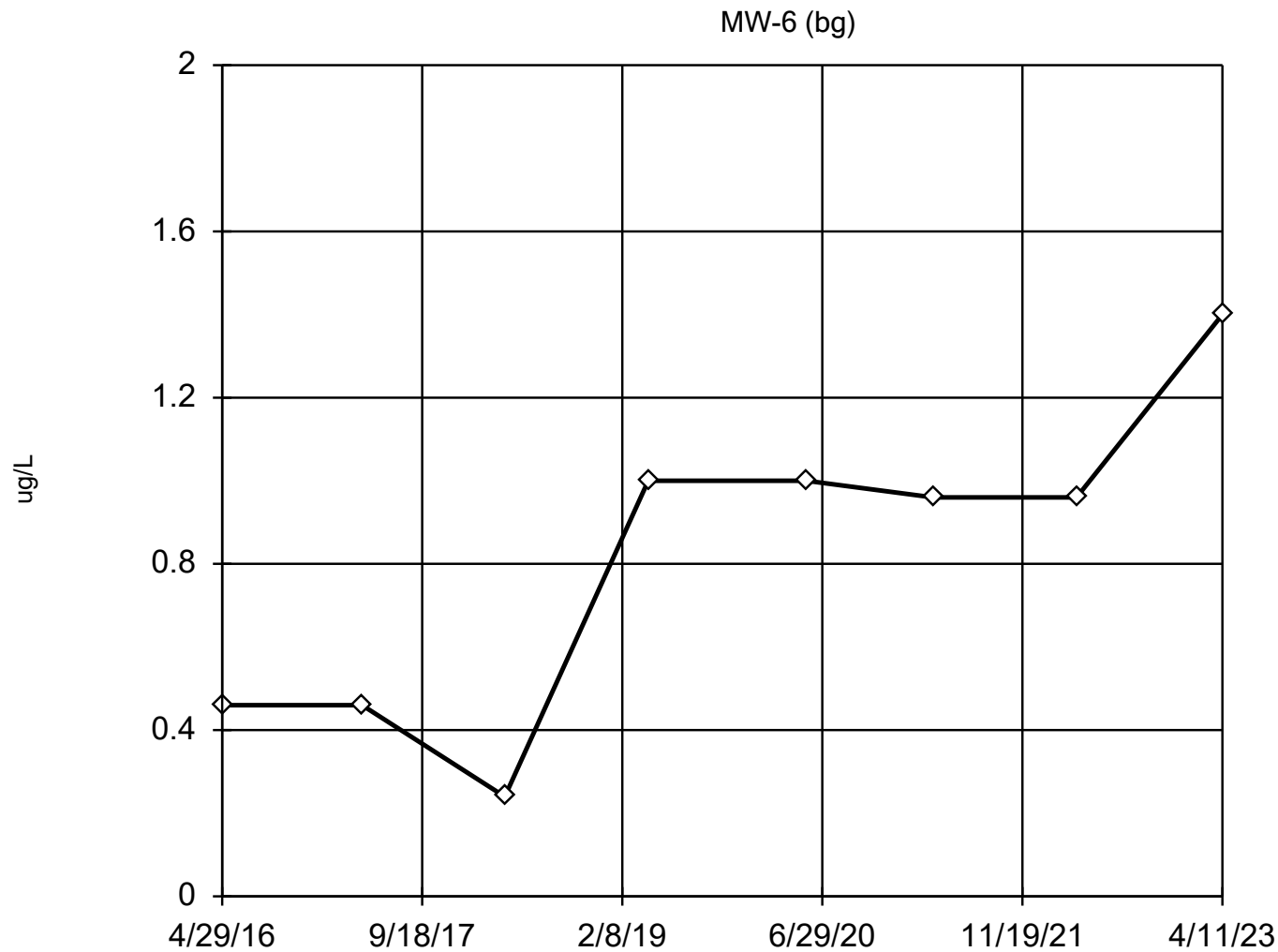
EPA 1989 Outlier Screening

Constituent: Potassium (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

4/29/2016	1010
4/19/2017	1020
4/16/2018	1100
4/15/2019	940
5/20/2020	1200
4/7/2021	1000
4/6/2022	1200
4/11/2023	1200

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.81, std. dev. 0.3846, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9033
Critical = 0.851
The distribution was found to be normally distributed.

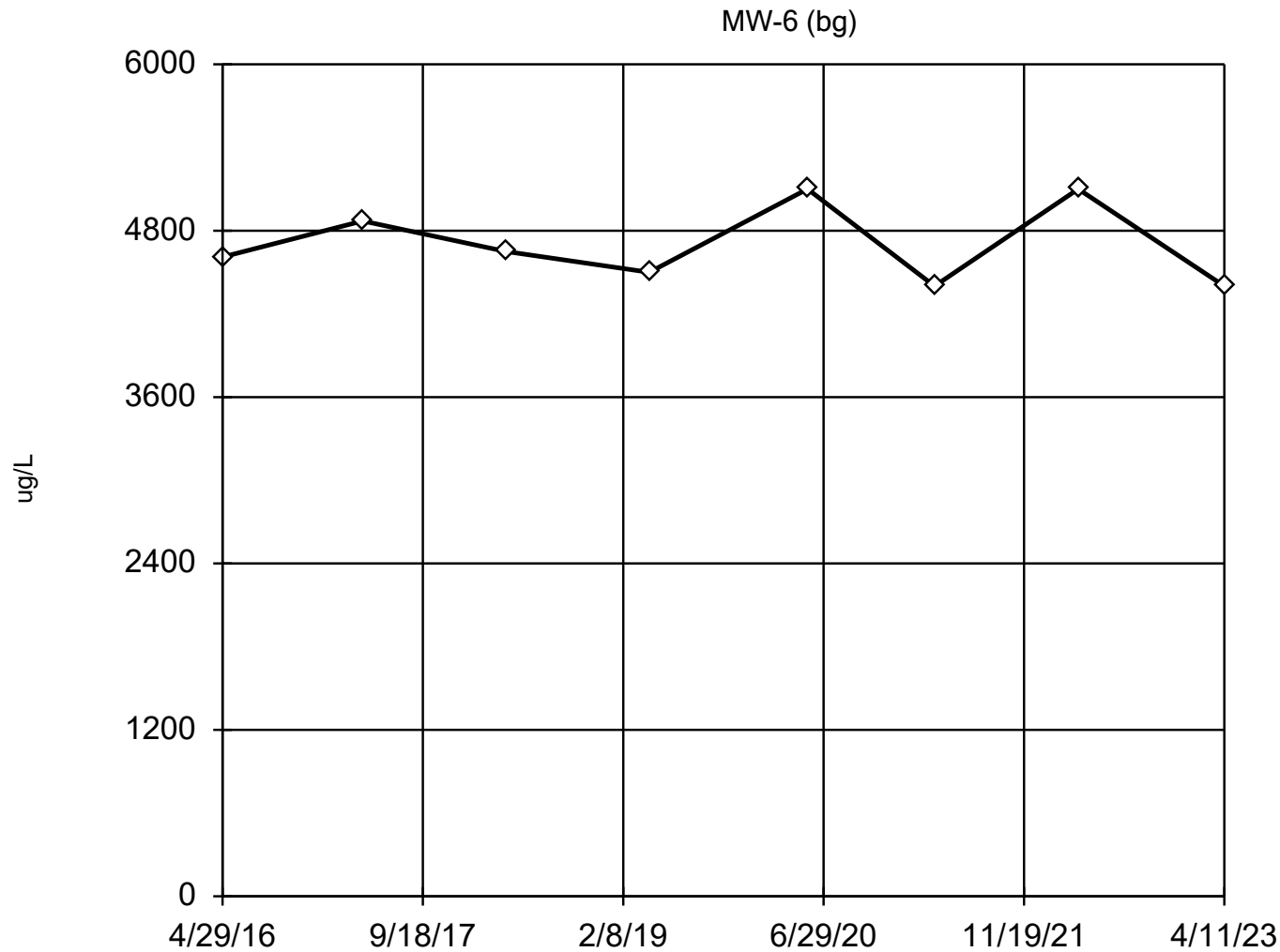
Constituent: Selenium Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

EPA 1989 Outlier Screening

Constituent: Selenium (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)
4/29/2016	0.46 (J)
4/19/2017	0.46 (J)
4/16/2018	0.24 (J)
4/15/2019	<1
5/20/2020	<1
4/7/2021	<0.96
4/6/2022	<0.96 (U)
4/11/2023	<1.4 (U)

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 4704, std. dev. 287.7, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.8746
Critical = 0.851
The distribution was found to be normally distributed.

Constituent: Sodium Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

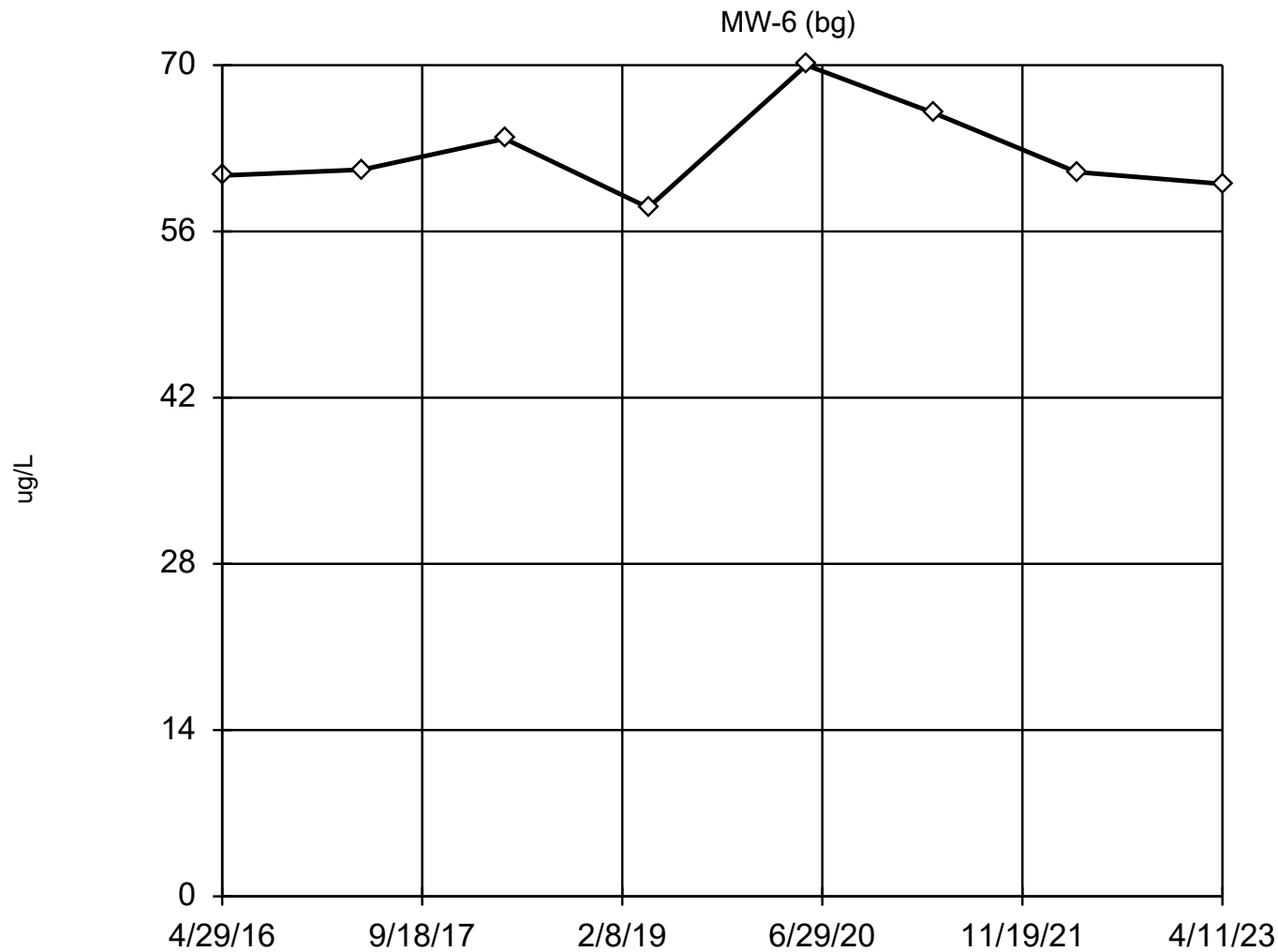
EPA 1989 Outlier Screening

Constituent: Sodium (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

4/29/2016	4610
4/19/2017	4870
4/16/2018	4650
4/15/2019	4500
5/20/2020	5100
4/7/2021	4400
4/6/2022	5100
4/11/2023	4400

EPA Screening (suspected outliers for Dixon's Test)



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 62.59, std. dev. 3.851, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9087
Critical = 0.851
The distribution was found to be normally distributed.

Constituent: Strontium Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

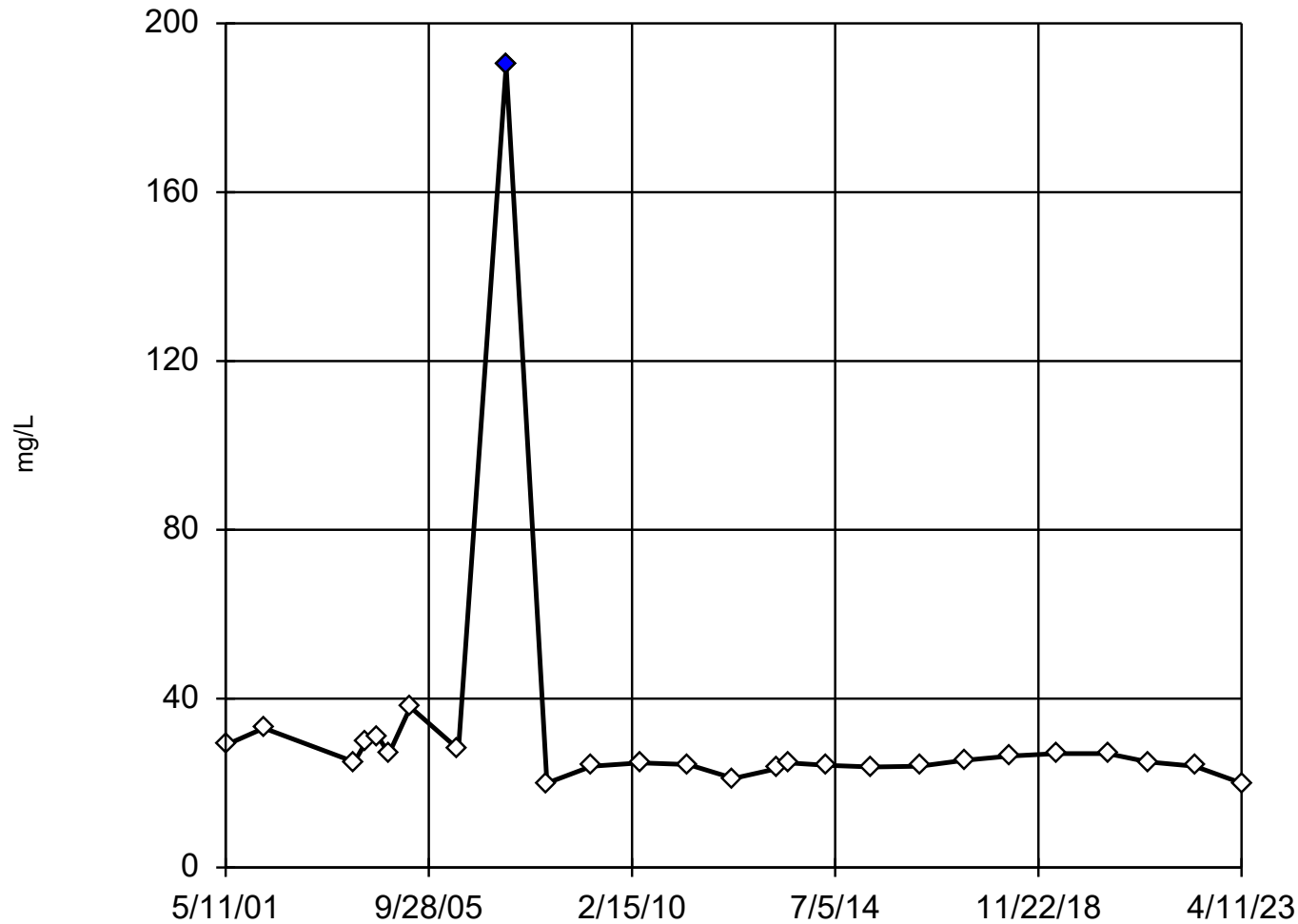
EPA 1989 Outlier Screening

Constituent: Strontium (ug/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)
4/29/2016	60.7 (Y)
4/19/2017	61.2 (N2)
4/16/2018	63.8 (N2)
4/15/2019	58
5/20/2020	70
4/7/2021	66
4/6/2022	61
4/11/2023	60

Rosner's Outlier Test

MW-6 (bg)



n = 26

Statistical outlier is
drawn as solid.

k = 2
r = 4.608
Tabulated value = 2.856
Alpha = 0.01

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9436
Critical = 0.931 (after
natural log transforma-
tion)
The distribution, after
removal of suspect val-
ue, was found to be log-
normal.

Constituent: Sulfate Analysis Run 10/2/2023 8:47 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

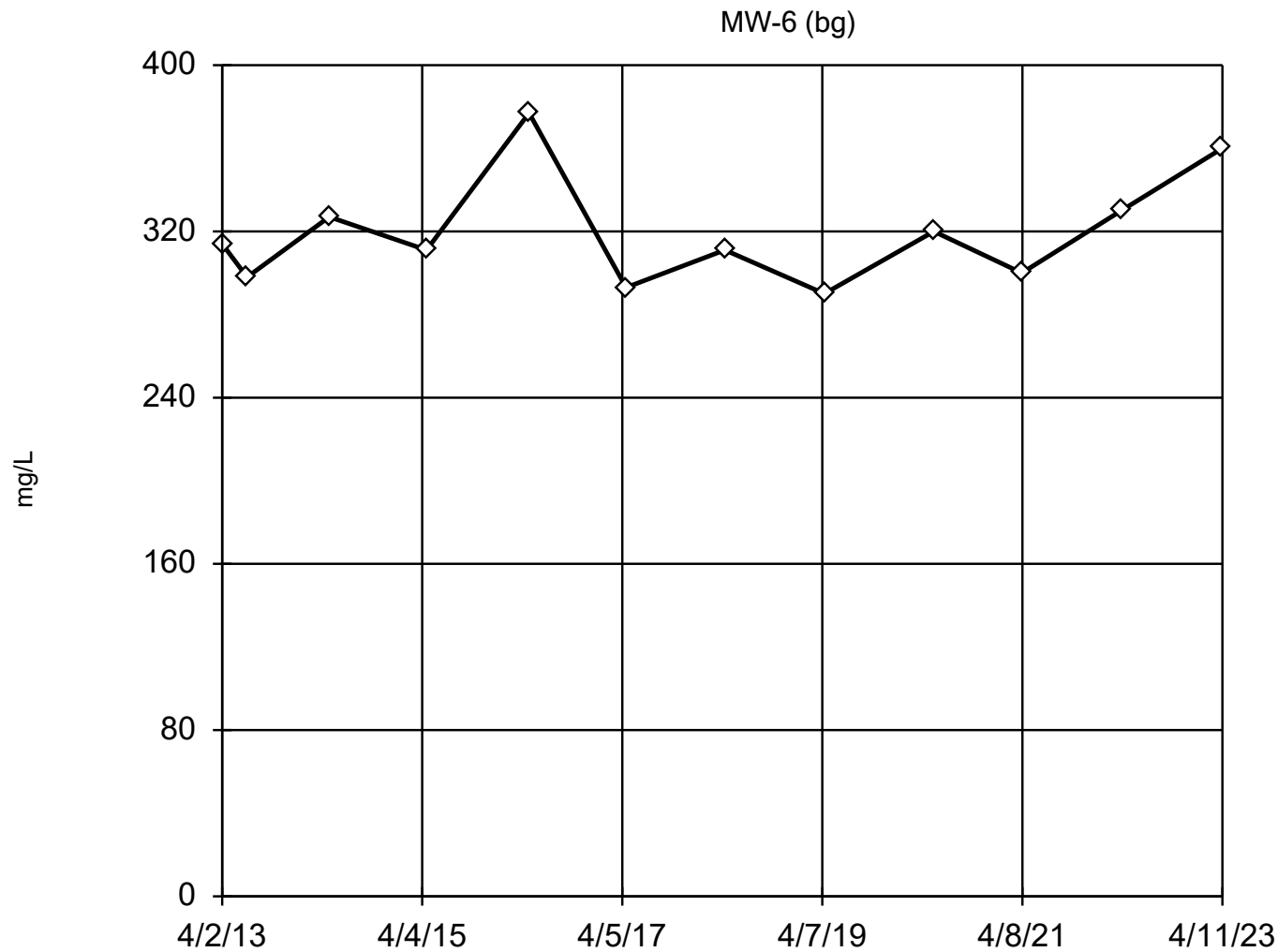
Rosner's Outlier Test

Constituent: Sulfate (mg/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

5/11/2001	29
3/8/2002	33
2/19/2004	25
5/26/2004	30
8/23/2004	31
11/18/2004	27
5/5/2005	38
5/19/2006	28 (J)
5/30/2007	190 (XO)
4/16/2008	20
4/3/2009	24
4/21/2010	24.8
5/4/2011	24.4
4/25/2012	21.1
4/2/2013	23.4
7/2/2013	24.8
4/29/2014	24.2
4/20/2015	23.8
4/29/2016	24
4/19/2017	25.4
4/16/2018	26.4
4/15/2019	27
5/20/2020	27
4/7/2021	25
4/6/2022	24
4/11/2023	20

EPA Screening (suspected outliers for Dixon's Test)



n = 12

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 319.3, std. dev. 26.46, critical Tn 2.285

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.8863
Critical = 0.883
The distribution was found to be normally distributed.

Constituent: Total Alkalinity Analysis Run 10/2/2023 8:47 AM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

EPA 1989 Outlier Screening

Constituent: Total Alkalinity (mg/L) Analysis Run 10/2/2023 8:48 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

MW-6 (bg)

4/2/2013	314
7/2/2013	298
4/29/2014	327
4/20/2015	311
4/29/2016	377
4/19/2017	293
4/16/2018	311
4/15/2019	290
5/20/2020	320
4/7/2021	300
4/6/2022	330
4/11/2023	360



Attachment D3

Interwell Prediction Limit Analysis Results

Prediction Limit

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions Printed 7/14/2023, 9:27 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (ug/L)	MW-11R	0.880	n/a	4/10/2023	36	Yes	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Arsenic (ug/L)	MW-12	0.880	n/a	4/11/2023	22	Yes	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Arsenic (ug/L)	MW-12P	0.880	n/a	4/11/2023	0.53ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Arsenic (ug/L)	MW-13	0.880	n/a	4/7/2022	0.75ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Arsenic (ug/L)	MW-14	0.880	n/a	4/11/2023	0.53ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Arsenic (ug/L)	MW-15	0.880	n/a	4/7/2022	0.75ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Arsenic (ug/L)	TW-18	0.880	n/a	4/11/2023	0.94J	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Barium (ug/L)	MW-11R	53.4	n/a	4/10/2023	520	Yes	8	MW-6	45.85	2.517	0	None	No	0.000885	Param Inter 1 of 2
Barium (ug/L)	MW-12	53.4	n/a	4/11/2023	210	Yes	8	MW-6	45.85	2.517	0	None	No	0.000885	Param Inter 1 of 2
Barium (ug/L)	MW-12P	53.4	n/a	4/11/2023	91	Yes	8	MW-6	45.85	2.517	0	None	No	0.000885	Param Inter 1 of 2
Barium (ug/L)	MW-13	53.4	n/a	4/7/2022	49	No	8	MW-6	45.85	2.517	0	None	No	0.000885	Param Inter 1 of 2
Barium (ug/L)	MW-14	53.4	n/a	4/11/2023	40	No	8	MW-6	45.85	2.517	0	None	No	0.000885	Param Inter 1 of 2
Barium (ug/L)	MW-15	53.4	n/a	4/7/2022	100	Yes	8	MW-6	45.85	2.517	0	None	No	0.000885	Param Inter 1 of 2
Barium (ug/L)	TW-18	53.4	n/a	4/11/2023	180	Yes	8	MW-6	45.85	2.517	0	None	No	0.000885	Param Inter 1 of 2
Boron (ug/L)	MW-11R	110	n/a	4/10/2023	280	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Boron (ug/L)	MW-12	110	n/a	4/11/2023	1400	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Boron (ug/L)	MW-12P	110	n/a	4/11/2023	2200	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Boron (ug/L)	MW-13	110	n/a	4/7/2022	990	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Boron (ug/L)	MW-14	110	n/a	4/11/2023	76ND	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Boron (ug/L)	MW-15	110	n/a	4/7/2022	130	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Boron (ug/L)	TW-18	110	n/a	4/11/2023	190	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Calcium (mg/L)	MW-11R	86.6	n/a	4/10/2023	190	Yes	8	MW-6	71.15	5.151	0	None	No	0.000885	Param Inter 1 of 2
Calcium (mg/L)	MW-12	86.6	n/a	4/11/2023	76	No	8	MW-6	71.15	5.151	0	None	No	0.000885	Param Inter 1 of 2
Calcium (mg/L)	MW-12P	86.6	n/a	4/11/2023	120	Yes	8	MW-6	71.15	5.151	0	None	No	0.000885	Param Inter 1 of 2
Calcium (mg/L)	MW-13	86.6	n/a	4/7/2022	90	Yes	8	MW-6	71.15	5.151	0	None	No	0.000885	Param Inter 1 of 2
Calcium (mg/L)	MW-14	86.6	n/a	4/11/2023	76	No	8	MW-6	71.15	5.151	0	None	No	0.000885	Param Inter 1 of 2
Calcium (mg/L)	MW-15	86.6	n/a	4/7/2022	64	No	8	MW-6	71.15	5.151	0	None	No	0.000885	Param Inter 1 of 2
Calcium (mg/L)	TW-18	86.6	n/a	4/11/2023	100	Yes	8	MW-6	71.15	5.151	0	None	No	0.000885	Param Inter 1 of 2
Chloride (mg/L)	MW-11R	9.29	n/a	4/10/2023	16	Yes	22	MW-6	6.703	1.185	0	None	No	0.000885	Param Inter 1 of 2
Chloride (mg/L)	MW-12	9.29	n/a	4/11/2023	6	No	22	MW-6	6.703	1.185	0	None	No	0.000885	Param Inter 1 of 2
Chloride (mg/L)	MW-12P	9.29	n/a	4/11/2023	17	Yes	22	MW-6	6.703	1.185	0	None	No	0.000885	Param Inter 1 of 2
Chloride (mg/L)	MW-13	9.29	n/a	4/7/2022	18	Yes	22	MW-6	6.703	1.185	0	None	No	0.000885	Param Inter 1 of 2
Chloride (mg/L)	MW-14	9.29	n/a	4/11/2023	7	No	22	MW-6	6.703	1.185	0	None	No	0.000885	Param Inter 1 of 2
Chloride (mg/L)	MW-15	9.29	n/a	4/7/2022	20	Yes	22	MW-6	6.703	1.185	0	None	No	0.000885	Param Inter 1 of 2
Chloride (mg/L)	TW-18	9.29	n/a	4/11/2023	54	Yes	22	MW-6	6.703	1.185	0	None	No	0.000885	Param Inter 1 of 2
Cobalt (ug/L)	MW-11R	0.500	n/a	4/10/2023	7.3	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Cobalt (ug/L)	MW-12	0.500	n/a	4/11/2023	1.2	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Cobalt (ug/L)	MW-12P	0.500	n/a	4/11/2023	0.17ND	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Cobalt (ug/L)	MW-13	0.500	n/a	4/7/2022	0.85	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Cobalt (ug/L)	MW-14	0.500	n/a	4/11/2023	0.17ND	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Cobalt (ug/L)	MW-15	0.500	n/a	4/7/2022	0.19ND	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Cobalt (ug/L)	TW-18	0.500	n/a	4/11/2023	2.9	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Copper (ug/L)	MW-11R	3.20	n/a	4/10/2023	1.8ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Copper (ug/L)	MW-12	3.20	n/a	4/11/2023	1.8ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Copper (ug/L)	MW-12P	3.20	n/a	4/11/2023	1.8ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Copper (ug/L)	MW-13	3.20	n/a	4/7/2022	1.8ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Copper (ug/L)	MW-14	3.20	n/a	4/11/2023	1.8ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Copper (ug/L)	MW-15	3.20	n/a	4/7/2022	1.8ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Copper (ug/L)	TW-18	3.20	n/a	4/11/2023	1.8ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Iron (ug/L)	MW-11R	66.0	n/a	4/10/2023	55000	Yes	8	MW-6	n/a	n/a	87.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2

Prediction Limit

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions Printed 7/14/2023, 9:27 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Iron (ug/L)	MW-12	66.0	n/a	4/11/2023	6800	Yes	8	MW-6	n/a	n/a	87.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Iron (ug/L)	MW-12P	66.0	n/a	4/11/2023	36ND	No	8	MW-6	n/a	n/a	87.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Iron (ug/L)	MW-13	66.0	n/a	4/7/2022	280	Yes	8	MW-6	n/a	n/a	87.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Iron (ug/L)	MW-14	66.0	n/a	4/11/2023	36ND	No	8	MW-6	n/a	n/a	87.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Iron (ug/L)	MW-15	66.0	n/a	4/7/2022	36ND	No	8	MW-6	n/a	n/a	87.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Iron (ug/L)	TW-18	66.0	n/a	4/11/2023	3200	Yes	8	MW-6	n/a	n/a	87.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Magnesium (ug/L)	MW-11R	44800	n/a	4/10/2023	120000	Yes	8	MW-6	38038	2255	0	None	No	0.000885	Param Inter 1 of 2
Magnesium (ug/L)	MW-12	44800	n/a	4/11/2023	34000	No	8	MW-6	38038	2255	0	None	No	0.000885	Param Inter 1 of 2
Magnesium (ug/L)	MW-12P	44800	n/a	4/11/2023	49000	Yes	8	MW-6	38038	2255	0	None	No	0.000885	Param Inter 1 of 2
Magnesium (ug/L)	MW-13	44800	n/a	4/7/2022	24000	No	8	MW-6	38038	2255	0	None	No	0.000885	Param Inter 1 of 2
Magnesium (ug/L)	MW-14	44800	n/a	4/11/2023	36000	No	8	MW-6	38038	2255	0	None	No	0.000885	Param Inter 1 of 2
Magnesium (ug/L)	MW-15	44800	n/a	4/7/2022	22000	No	8	MW-6	38038	2255	0	None	No	0.000885	Param Inter 1 of 2
Magnesium (ug/L)	TW-18	44800	n/a	4/11/2023	37000	No	8	MW-6	38038	2255	0	None	No	0.000885	Param Inter 1 of 2
Manganese (ug/L)	MW-11R	4.40	n/a	4/10/2023	2800	Yes	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Manganese (ug/L)	MW-12	4.40	n/a	4/11/2023	1000	Yes	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Manganese (ug/L)	MW-12P	4.40	n/a	4/11/2023	3.6ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Manganese (ug/L)	MW-13	4.40	n/a	4/7/2022	32	Yes	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Manganese (ug/L)	MW-14	4.40	n/a	4/11/2023	3.6ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Manganese (ug/L)	MW-15	4.40	n/a	4/7/2022	3.6ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Manganese (ug/L)	TW-18	4.40	n/a	4/11/2023	2900	Yes	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Nickel (ug/L)	MW-11R	1.90	n/a	4/10/2023	7.1	Yes	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Nickel (ug/L)	MW-12	1.90	n/a	4/11/2023	3.6J	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Nickel (ug/L)	MW-12P	1.90	n/a	4/11/2023	1.9ND	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Nickel (ug/L)	MW-13	1.90	n/a	4/7/2022	1.9ND	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Nickel (ug/L)	MW-14	1.90	n/a	4/11/2023	1.9ND	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Nickel (ug/L)	MW-15	1.90	n/a	4/7/2022	1.9ND	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Nickel (ug/L)	TW-18	1.90	n/a	4/11/2023	4.8J	No	8	MW-6	n/a	n/a	75	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Potassium (ug/L)	MW-11R	1400	n/a	4/10/2023	7800	Yes	8	MW-6	1084	105.6	0	None	No	0.000885	Param Inter 1 of 2
Potassium (ug/L)	MW-12	1400	n/a	4/11/2023	2500	Yes	8	MW-6	1084	105.6	0	None	No	0.000885	Param Inter 1 of 2
Potassium (ug/L)	MW-12P	1400	n/a	4/11/2023	6000	Yes	8	MW-6	1084	105.6	0	None	No	0.000885	Param Inter 1 of 2
Potassium (ug/L)	MW-13	1400	n/a	4/7/2022	1500	Yes	8	MW-6	1084	105.6	0	None	No	0.000885	Param Inter 1 of 2
Potassium (ug/L)	MW-14	1400	n/a	4/11/2023	1000	No	8	MW-6	1084	105.6	0	None	No	0.000885	Param Inter 1 of 2
Potassium (ug/L)	MW-15	1400	n/a	4/7/2022	1600	Yes	8	MW-6	1084	105.6	0	None	No	0.000885	Param Inter 1 of 2
Potassium (ug/L)	TW-18	1400	n/a	4/11/2023	1500	Yes	8	MW-6	1084	105.6	0	None	No	0.000885	Param Inter 1 of 2
Selenium (ug/L)	MW-11R	1.40	n/a	4/10/2023	1.4J	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Selenium (ug/L)	MW-12	1.40	n/a	4/11/2023	1.4ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Selenium (ug/L)	MW-12P	1.40	n/a	4/11/2023	2.9J	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Selenium (ug/L)	MW-13	1.40	n/a	4/7/2022	8.4	Yes	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Selenium (ug/L)	MW-14	1.40	n/a	4/11/2023	1.4ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Selenium (ug/L)	MW-15	1.40	n/a	4/7/2022	4J	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Selenium (ug/L)	TW-18	1.40	n/a	4/11/2023	1.4ND	No	8	MW-6	n/a	n/a	62.5	n/a	n/a	0.01836	NP Inter (NDs) 1 of 2
Sodium (ug/L)	MW-11R	5570	n/a	4/10/2023	26000	Yes	8	MW-6	4704	287.7	0	None	No	0.000885	Param Inter 1 of 2
Sodium (ug/L)	MW-12	5570	n/a	4/11/2023	120000	Yes	8	MW-6	4704	287.7	0	None	No	0.000885	Param Inter 1 of 2
Sodium (ug/L)	MW-12P	5570	n/a	4/11/2023	45000	Yes	8	MW-6	4704	287.7	0	None	No	0.000885	Param Inter 1 of 2
Sodium (ug/L)	MW-13	5570	n/a	4/7/2022	16000	Yes	8	MW-6	4704	287.7	0	None	No	0.000885	Param Inter 1 of 2
Sodium (ug/L)	MW-14	5570	n/a	4/11/2023	3300	No	8	MW-6	4704	287.7	0	None	No	0.000885	Param Inter 1 of 2
Sodium (ug/L)	MW-15	5570	n/a	4/7/2022	16000	Yes	8	MW-6	4704	287.7	0	None	No	0.000885	Param Inter 1 of 2
Sodium (ug/L)	TW-18	5570	n/a	4/11/2023	42000	Yes	8	MW-6	4704	287.7	0	None	No	0.000885	Param Inter 1 of 2
Strontium (ug/L)	MW-11R	74.1	n/a	4/10/2023	520	Yes	8	MW-6	62.59	3.851	0	None	No	0.000885	Param Inter 1 of 2
Strontium (ug/L)	MW-12	74.1	n/a	4/11/2023	70	No	8	MW-6	62.59	3.851	0	None	No	0.000885	Param Inter 1 of 2

Prediction Limit

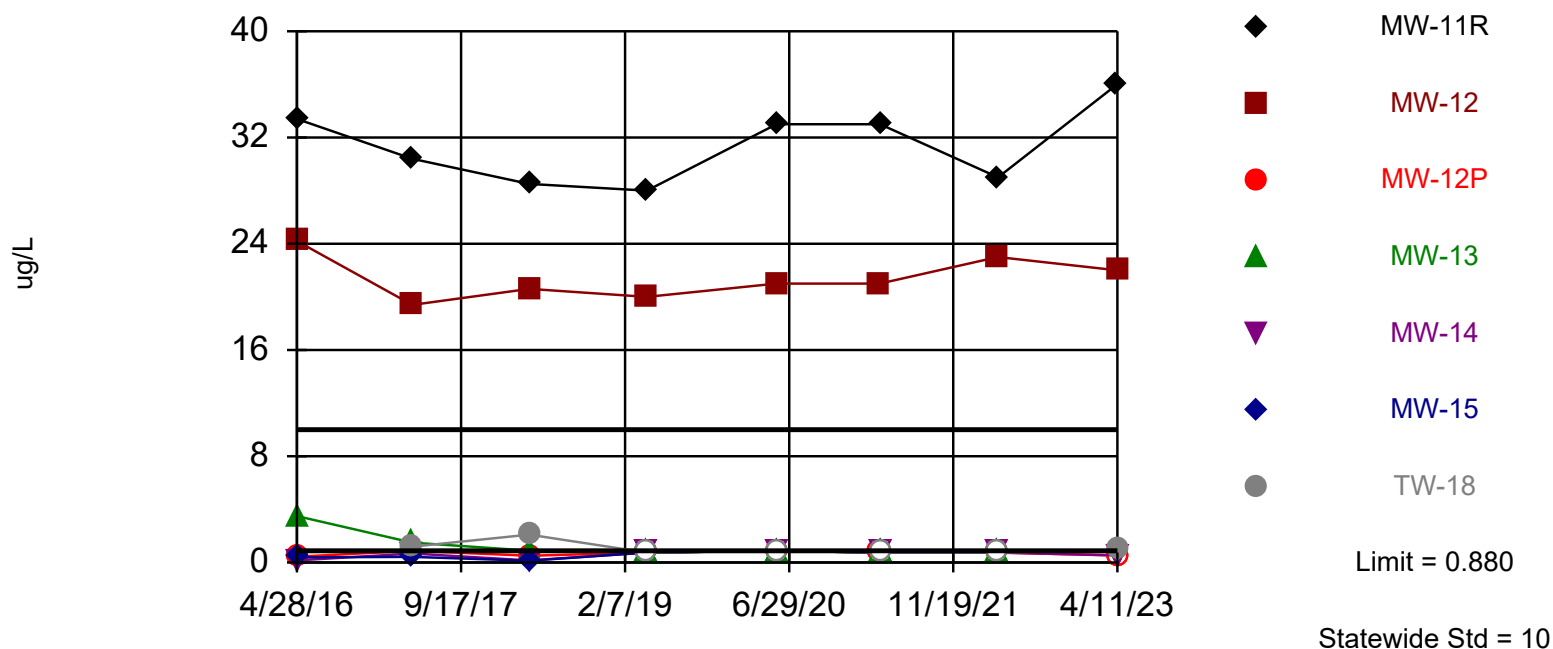
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions Printed 7/14/2023, 9:27 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Wells</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Strontium (ug/L)	MW-12P	74.1	n/a	4/11/2023	140	Yes	8	MW-6	62.59	3.851	0	None	No	0.000885	Param Inter 1 of 2
Strontium (ug/L)	MW-13	74.1	n/a	4/7/2022	1000	Yes	8	MW-6	62.59	3.851	0	None	No	0.000885	Param Inter 1 of 2
Strontium (ug/L)	MW-14	74.1	n/a	4/11/2023	58	No	8	MW-6	62.59	3.851	0	None	No	0.000885	Param Inter 1 of 2
Strontium (ug/L)	MW-15	74.1	n/a	4/7/2022	330	Yes	8	MW-6	62.59	3.851	0	None	No	0.000885	Param Inter 1 of 2
Strontium (ug/L)	TW-18	74.1	n/a	4/11/2023	150	Yes	8	MW-6	62.59	3.851	0	None	No	0.000885	Param Inter 1 of 2
Sulfate (mg/L)	MW-11R	34.5	n/a	4/10/2023	1.05ND	No	25	MW-6	26.01	3.983	0	None	No	0.000885	Param Inter 1 of 2
Sulfate (mg/L)	MW-12	34.5	n/a	4/11/2023	210	Yes	25	MW-6	26.01	3.983	0	None	No	0.000885	Param Inter 1 of 2
Sulfate (mg/L)	MW-12P	34.5	n/a	4/11/2023	170	Yes	25	MW-6	26.01	3.983	0	None	No	0.000885	Param Inter 1 of 2
Sulfate (mg/L)	MW-13	34.5	n/a	4/7/2022	150	Yes	25	MW-6	26.01	3.983	0	None	No	0.000885	Param Inter 1 of 2
Sulfate (mg/L)	MW-14	34.5	n/a	4/11/2023	18	No	25	MW-6	26.01	3.983	0	None	No	0.000885	Param Inter 1 of 2
Sulfate (mg/L)	MW-15	34.5	n/a	4/7/2022	45	Yes	25	MW-6	26.01	3.983	0	None	No	0.000885	Param Inter 1 of 2
Sulfate (mg/L)	TW-18	34.5	n/a	4/11/2023	6.1	No	25	MW-6	26.01	3.983	0	None	No	0.000885	Param Inter 1 of 2
Total Alkalinity (mg/L)	MW-11R	386	253	4/10/2023	1100	Yes	12	MW-6	319.3	26.46	0	None	No	0.0004425	Param Inter 1 of 2
Total Alkalinity (mg/L)	MW-12	386	253	4/11/2023	400	Yes	12	MW-6	319.3	26.46	0	None	No	0.0004425	Param Inter 1 of 2
Total Alkalinity (mg/L)	MW-12P	386	253	4/11/2023	420	Yes	12	MW-6	319.3	26.46	0	None	No	0.0004425	Param Inter 1 of 2
Total Alkalinity (mg/L)	MW-13	386	253	6/2/2022	140	Yes	12	MW-6	319.3	26.46	0	None	No	0.0004425	Param Inter 1 of 2
Total Alkalinity (mg/L)	MW-14	386	253	4/11/2023	330	No	12	MW-6	319.3	26.46	0	None	No	0.0004425	Param Inter 1 of 2
Total Alkalinity (mg/L)	MW-15	386	253	6/2/2022	180	Yes	12	MW-6	319.3	26.46	0	None	No	0.0004425	Param Inter 1 of 2
Total Alkalinity (mg/L)	TW-18	386	253	4/11/2023	470	Yes	12	MW-6	319.3	26.46	0	None	No	0.0004425	Param Inter 1 of 2

Exceeds Limit: MW-11R, MW-12

Arsenic

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Annual per-constituent alpha = 0.1216. Individual comparison alpha = 0.01836 (1 of 2). Comparing 7 points to limit.

Prediction Limit

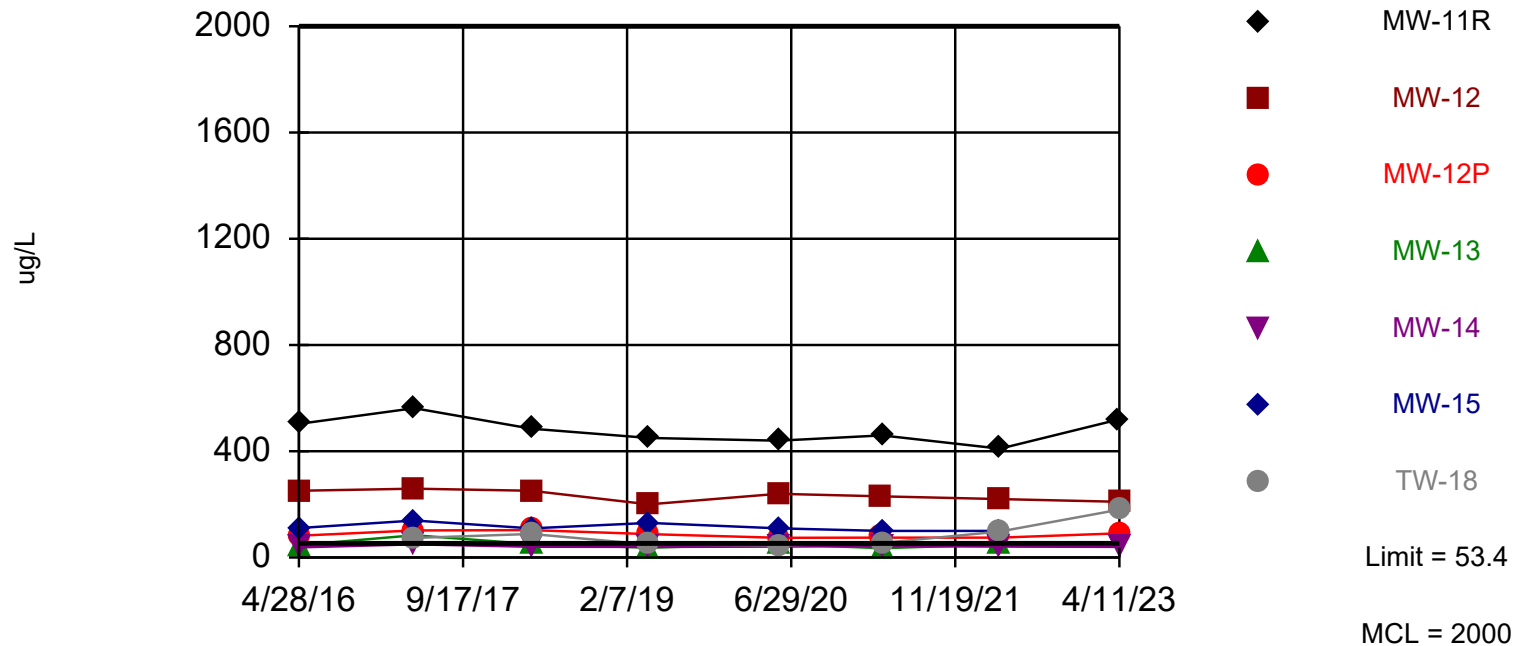
Constituent: Arsenic (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	33.4	24.2	3.5	0.44 (J)				
4/29/2016					0.26 (J)	0.39 (J)	0.16 (J)	
4/19/2017					0.27 (J)			
4/20/2017	30.4	19.4	1.5	0.88 (J)		0.42 (J)	0.68 (J)	1.2
4/16/2018					0.19 (J)			
4/17/2018	28.5	20.6	0.89 (J)	0.51 (J)		0.14 (J)	0.16 (J)	2.1
4/15/2019					<0.75		<0.75	
4/16/2019	28	20	<0.75	<0.75		<0.75		<0.75
5/20/2020					<0.88			
5/21/2020	33	21	<0.88	<0.88				
5/22/2020						<0.88	<0.88	<0.88
4/6/2021		21		<0.75				
4/7/2021	33		<0.75		<0.75	<0.75	<0.75	<0.75
4/6/2022		23		<0.75 (U)	<0.75 (U)		<0.75 (U)	<0.75 (U)
4/7/2022	29		<0.75 (U)			<0.75 (U)		
4/10/2023	36							
4/11/2023		22		<0.53 (U)	<0.53 (U)		<0.53 (U)	0.94 (J)

Exceeds Limit: MW-11R, MW-12, MW-12P,
MW-15, TW-18

Barium

Interwell Parametric



Background Data Summary: Mean=45.85, Std. Dev.=2.517, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9474, critical = 0.749. Kappa = 2.995 (c=17, w=7, 1 of 2, event alpha = 0.1). Report alpha = 0.006179. Individual comparison alpha = 0.000885. Comparing 7 points to limit.

Prediction Limit

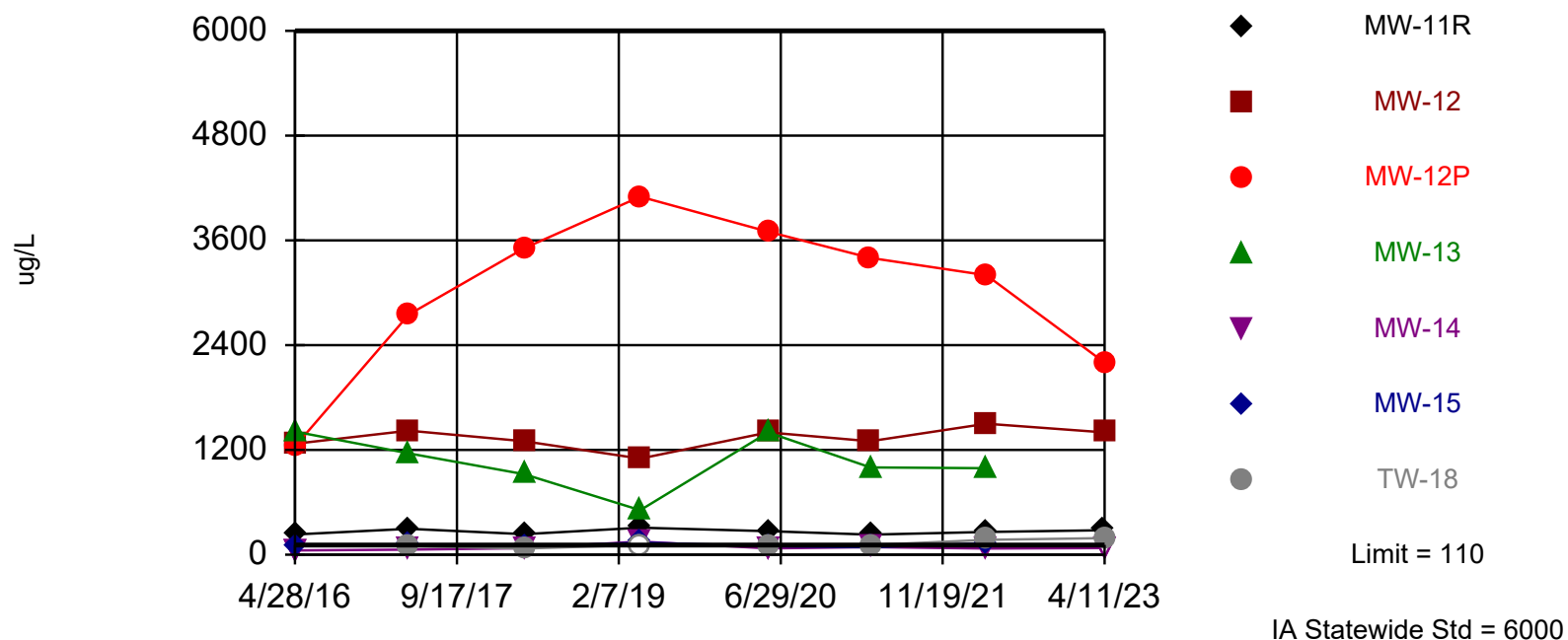
Constituent: Barium (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	503	251	46.4	82.2				
4/29/2016					44.2	111	38.2	
4/19/2017					45.7			
4/20/2017	562	259	83.8	102		139	49.8	73.6
4/16/2018					44.9			
4/17/2018	485	251	50.5	103		110	40.6	88.4
4/15/2019					41 (B)		40 (B)	
4/16/2019	450 (B)	200 (B)	37 (B)	88 (B)		130 (B)		49 (B)
5/20/2020					47			
5/21/2020	440	240	50	74				
5/22/2020						110	41	45
4/6/2021		230		75				
4/7/2021	460		35		48	100	43	55
4/6/2022		220		75	47		41	98
4/7/2022	410		49			100		
4/10/2023	520							
4/11/2023		210		91	49		40	180

Exceeds Limit: MW-11R, MW-12, MW-12P,
MW-13, MW-15, TW-18

Boron

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Annual per-constituent alpha = 0.1216. Individual comparison alpha = 0.01836 (1 of 2). Comparing 7 points to limit.

Prediction Limit

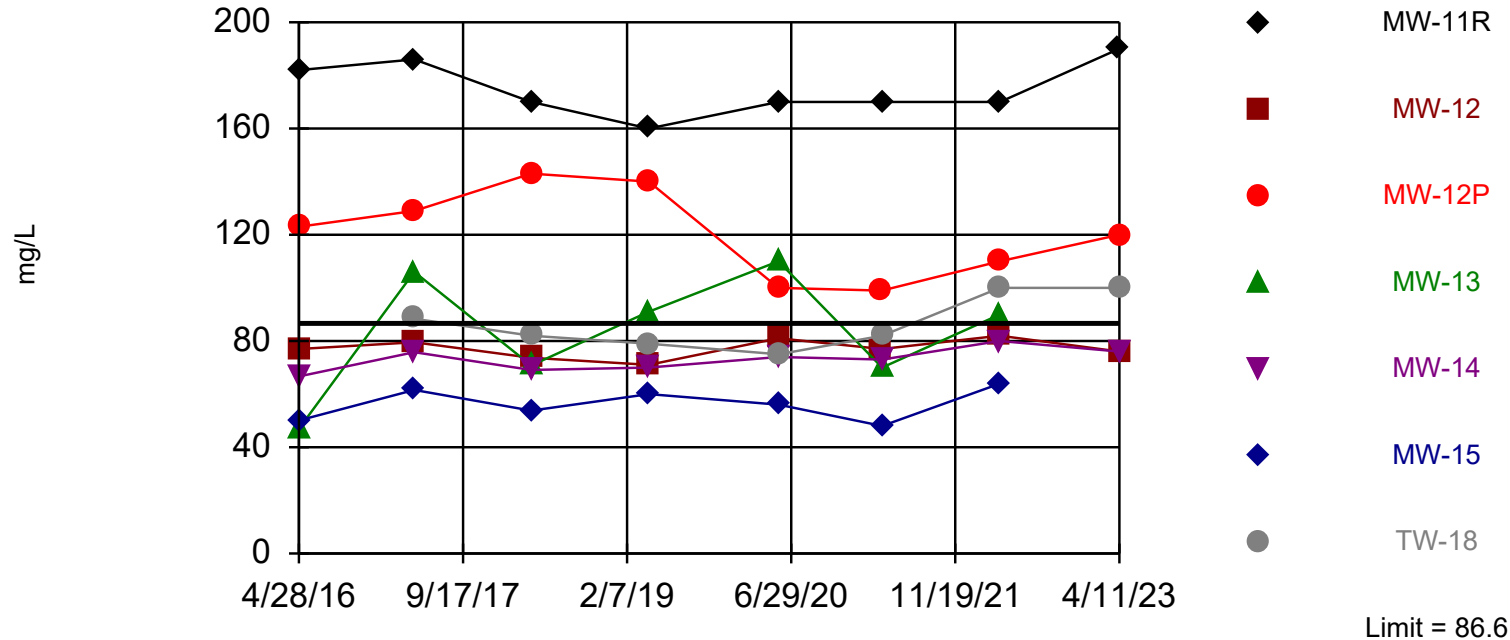
Constituent: Boron (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	231	1270	1410	1240				
4/29/2016					<50	97.1 (J)	<50	
4/19/2017					32 (J,B)			
4/20/2017	296	1420	1160	2750		116	57.3 (J)	97.6 (J)
4/16/2018					23.8 (J)			
4/17/2018	236	1300	922	3510		86.5 (J)	75 (J)	71.2 (J)
4/15/2019					<110		150 (J)	
4/16/2019	310	1100	510	4100		140 (J)		<110
5/20/2020					<73			
5/21/2020	270	1400	1400	3700				
5/22/2020						98 (J)	<73	110
4/6/2021		1300		3400				
4/7/2021	230		1000		<58	86 (J)	87 (J)	110
4/6/2022		1500		3200	<58 (U)		70 (J)	170
4/7/2022	260		990			130		
4/10/2023	280							
4/11/2023		1400		2200	<76 (U)		<76 (U)	190

Exceeds Limit: MW-11R, MW-12P, MW-13,
TW-18

Calcium

Interwell Parametric



Background Data Summary: Mean=71.15, Std. Dev.=5.151, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9082, critical = 0.749. Kappa = 2.995 (c=17, w=7, 1 of 2, event alpha = 0.1). Report alpha = 0.006179. Individual comparison alpha = 0.000885. Comparing 7 points to limit.

Prediction Limit Analysis Run 7/14/2023 9:25 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data

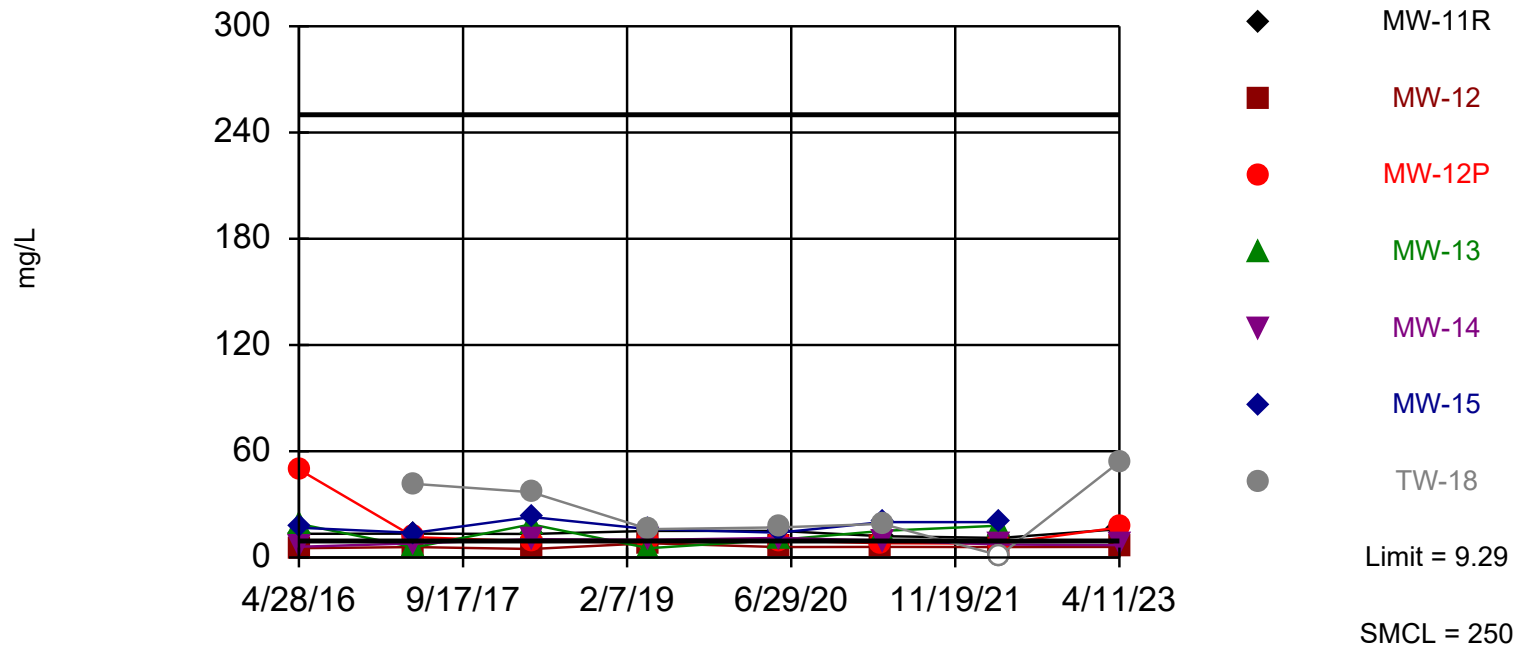
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	182	77	47	123				
4/29/2016					68.5	50.1	66.7	
4/19/2017					67.2			
4/20/2017	186	79.5	106	129		61.6	75.8	88.4
4/16/2018					67.5			
4/17/2018	170 (M1)	73.7	70.8	143		53.8	69.1	82
4/15/2019					65		70	
4/16/2019	160	71	91	140		60		79
5/20/2020					73			
5/21/2020	170	81	110	100				
5/22/2020						56	74	75
4/6/2021		77		99				
4/7/2021	170		70		71	48	73	82
4/6/2022		82		110	78		80	100
4/7/2022	170		90			64		
4/10/2023	190							
4/11/2023		76		120	79		76	100

Exceeds Limit: MW-11R, MW-12P, MW-13,
MW-15, TW-18

Chloride

Interwell Parametric



Background Data Summary: Mean=6.703, Std. Dev.=1.185, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9782, critical = 0.878. Kappa = 2.187 (c=17, w=7, 1 of 2, event alpha = 0.1). Report alpha = 0.006179. Individual comparison alpha = 0.000885. Comparing 7 points to limit.

Prediction Limit

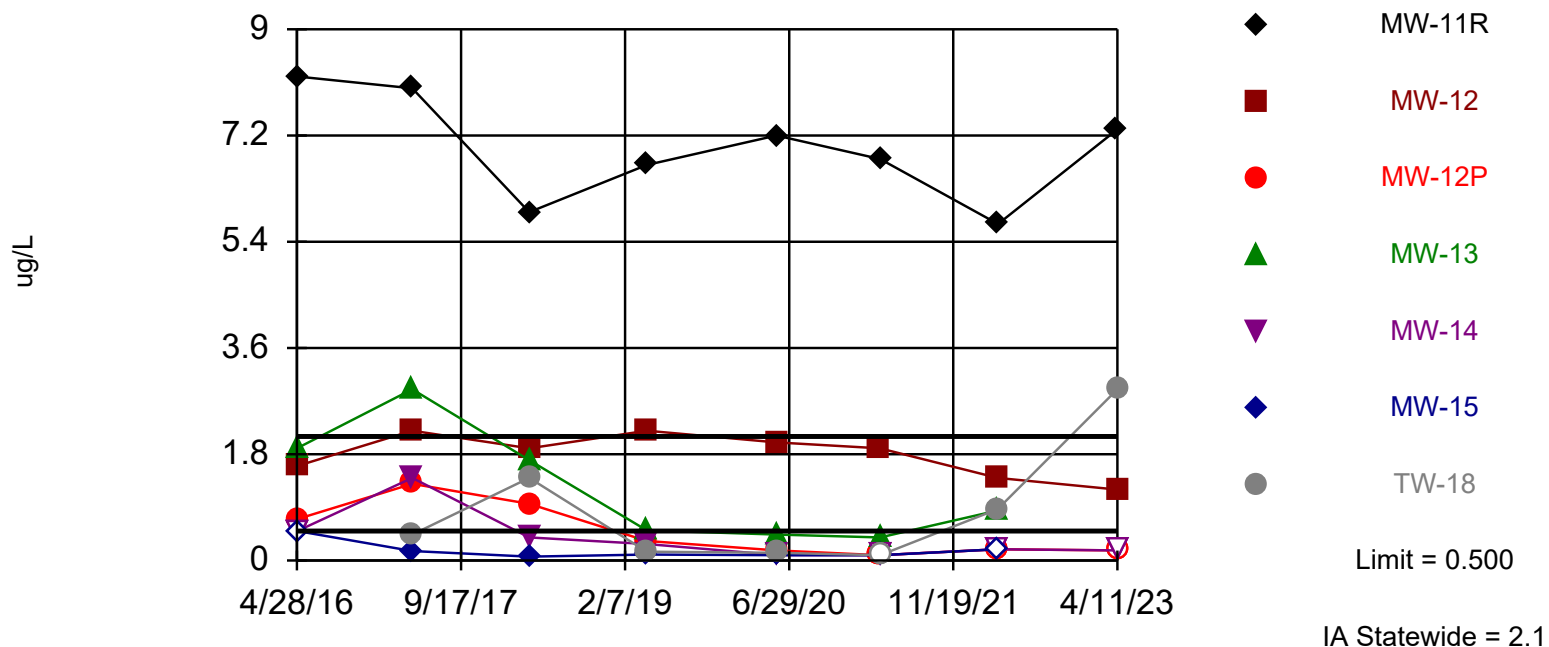
Constituent: Chloride (mg/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)	MW-12P	MW-11R	MW-12	MW-13	MW-15	MW-14	TW-18
5/11/2001	<0.5 (X)							
3/8/2002	<0.5 (X)							
2/19/2004	<0.5 (X)							
5/26/2004	6.5							
8/23/2004	7							
11/18/2004	5.1							
5/5/2005	9							
5/19/2006	<0.5 (X)							
5/30/2007	4.3							
4/16/2008	6							
4/3/2009	5.9							
4/21/2010	5.89							
5/4/2011	6.72							
4/25/2012	5.35							
4/2/2013	8.2							
7/2/2013	8.2							
4/29/2014	8							
4/20/2015	6.6							
4/28/2016		49.7	13.4	5.3	19			
4/29/2016	7.6					16.8	6.1	
4/19/2017	6.3							
4/20/2017		11.5	13.5	5.9	5.7	13.9	8	41.6
4/16/2018	6.7							
4/17/2018		9.1	13.3	4.8	18.7	22.9	10.3	36.9
4/15/2019	7						10	
4/16/2019		8.5	15	8.1	5.3	16		16
5/20/2020	8.4							
5/21/2020		9.6	15	5.9	10			
5/22/2020						14	11	17
4/6/2021		8.1		6				
4/7/2021	6.8		12		15	20	9.6	19
4/6/2022	5.3	7.9		5.9			7.3	<2.3 (U)
4/7/2022			11		18	20		
4/10/2023			16					
4/11/2023	6.6	17		6			7	54

Exceeds Limit: MW-11R, MW-12, MW-13,
TW-18

Cobalt

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Annual per-constituent alpha = 0.1216. Individual comparison alpha = 0.01836 (1 of 2). Comparing 7 points to limit.

Prediction Limit Analysis Run 7/14/2023 9:25 AM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Prediction Limit

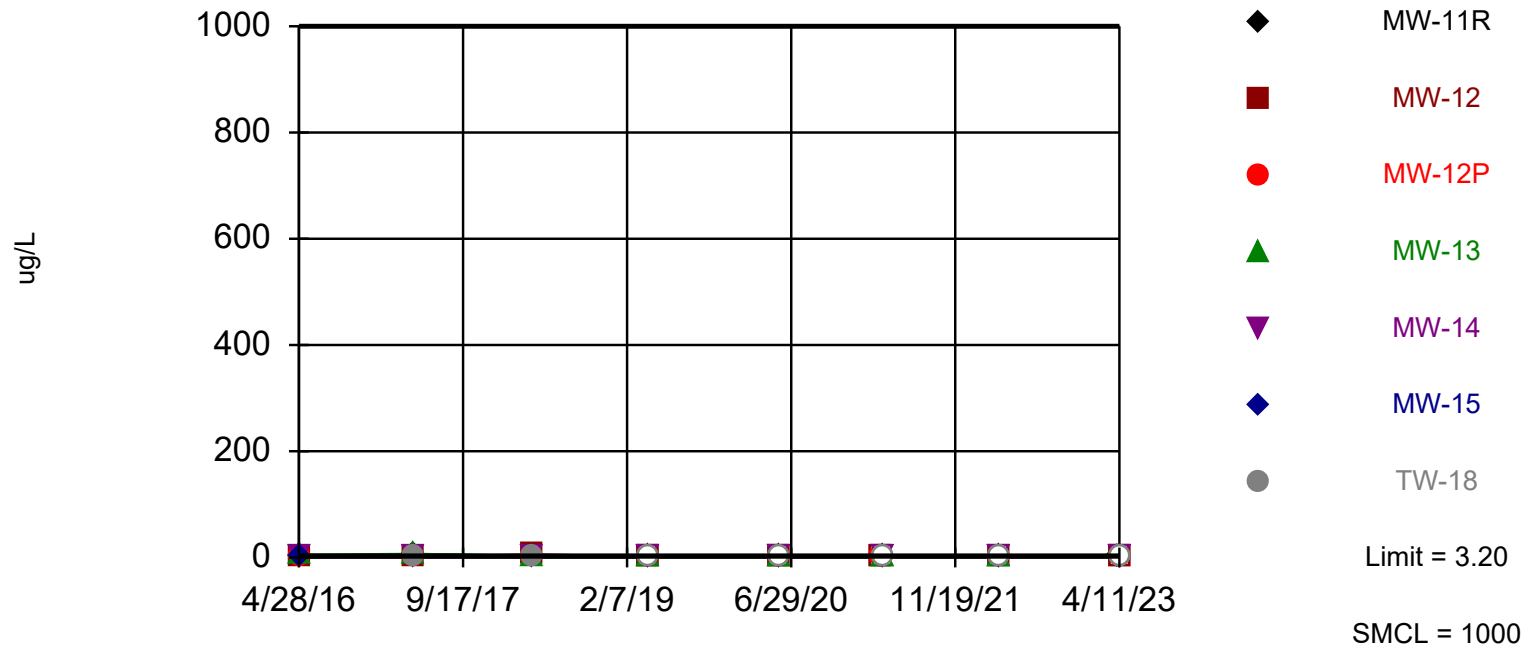
Constituent: Cobalt (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	8.2	1.6	1.9	0.7 (J)				
4/29/2016					<0.5	<0.5	<0.5	
4/19/2017					0.047 (J,B)			
4/20/2017	8	2.2	2.9	1.3		0.16 (J,B)	1.4	0.44 (J)
4/16/2018					<0.014			
4/17/2018	5.9	1.9	1.7	0.96 (J)		0.066 (J)	0.39 (J)	1.4
4/15/2019					<0.091		0.28 (J)	
4/16/2019	6.7	2.2	0.51	0.33 (J)		0.1 (J)		0.15 (J)
5/20/2020					0.17 (J)			
5/21/2020	7.2	2	0.44 (J)	0.17 (J)				
5/22/2020						<0.091	0.092 (J)	0.13 (J)
4/6/2021		1.9		<0.091				
4/7/2021	6.8		0.39 (J)		<0.091	<0.091	<0.091	<0.091
4/6/2022		1.4		<0.19 (U)	<0.19 (U)		<0.19 (U)	0.87
4/7/2022	5.7		0.85			<0.19 (U)		
4/10/2023	7.3							
4/11/2023		1.2		<0.17 (U)	<0.17 (U)		<0.17 (U)	2.9

Within Limit

Copper

Interwell Non-parametric



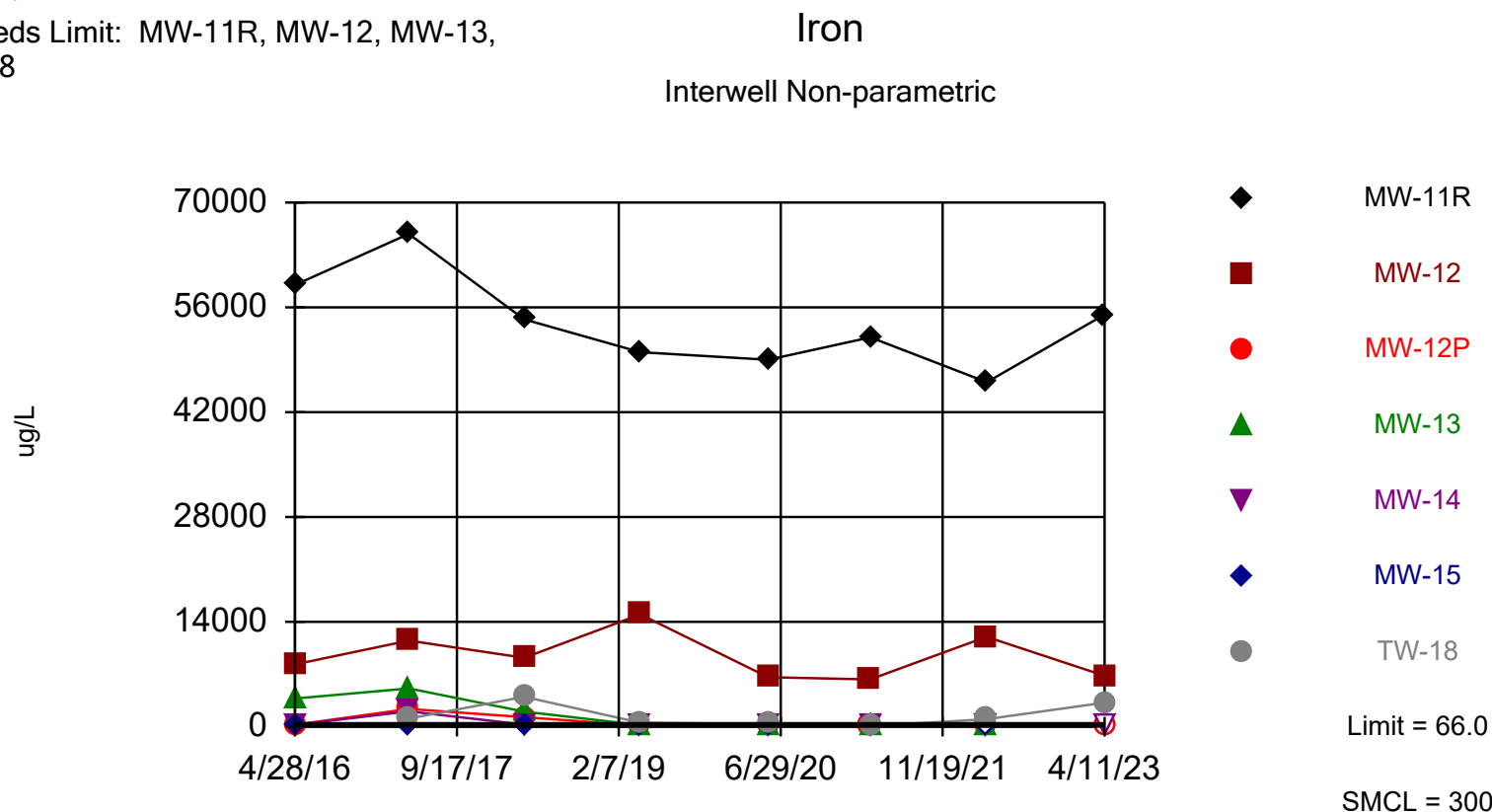
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Annual per-constituent alpha = 0.1216. Individual comparison alpha = 0.01836 (1 of 2). Comparing 7 points to limit.

Prediction Limit

Constituent: Copper (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	0.94 (J,Y)	0.97 (J,Y)	5.1	0.58 (J,Y)				
4/29/2016					0.17 (J,Y)	0.96 (J,Y)	0.42 (J,Y)	
4/19/2017					0.21 (J,B)			
4/20/2017	5.8	1.7	6.6	2.3		0.87 (J,B)	2.3	0.84 (J,B)
4/16/2018					0.25 (J,B)			
4/17/2018	3.4	5.7	3.6	1.7		0.7 (J,B)	0.51 (J,B)	2.2
4/15/2019					<2		<2	
4/16/2019	<2	<2	<2	<2		<2		<2
5/20/2020					<3.2			
5/21/2020	<3.2	<3.2	<3.2	<3.2				
5/22/2020						<3.2	<3.2	<3.2
4/6/2021		<1.4		<1.4				
4/7/2021	<1.4		<1.4		<1.4	<1.4	<1.4	<1.4
4/6/2022		1.8 (J)		<1.8 (U)	<1.8 (U)		<1.8 (U)	<1.8 (U)
4/7/2022	<1.8 (U)		<1.8 (U)			<1.8 (U)		
4/10/2023	<1.8 (U)							
4/11/2023		<1.8 (U)		<1.8 (U)	<1.8 (U)		<1.8 (U)	<1.8 (U)

Exceeds Limit: MW-11R, MW-12, MW-13,
TW-18



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Annual per-constituent alpha = 0.1216. Individual comparison alpha = 0.01836 (1 of 2). Comparing 7 points to limit.

Prediction Limit

Constituent: Iron (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data

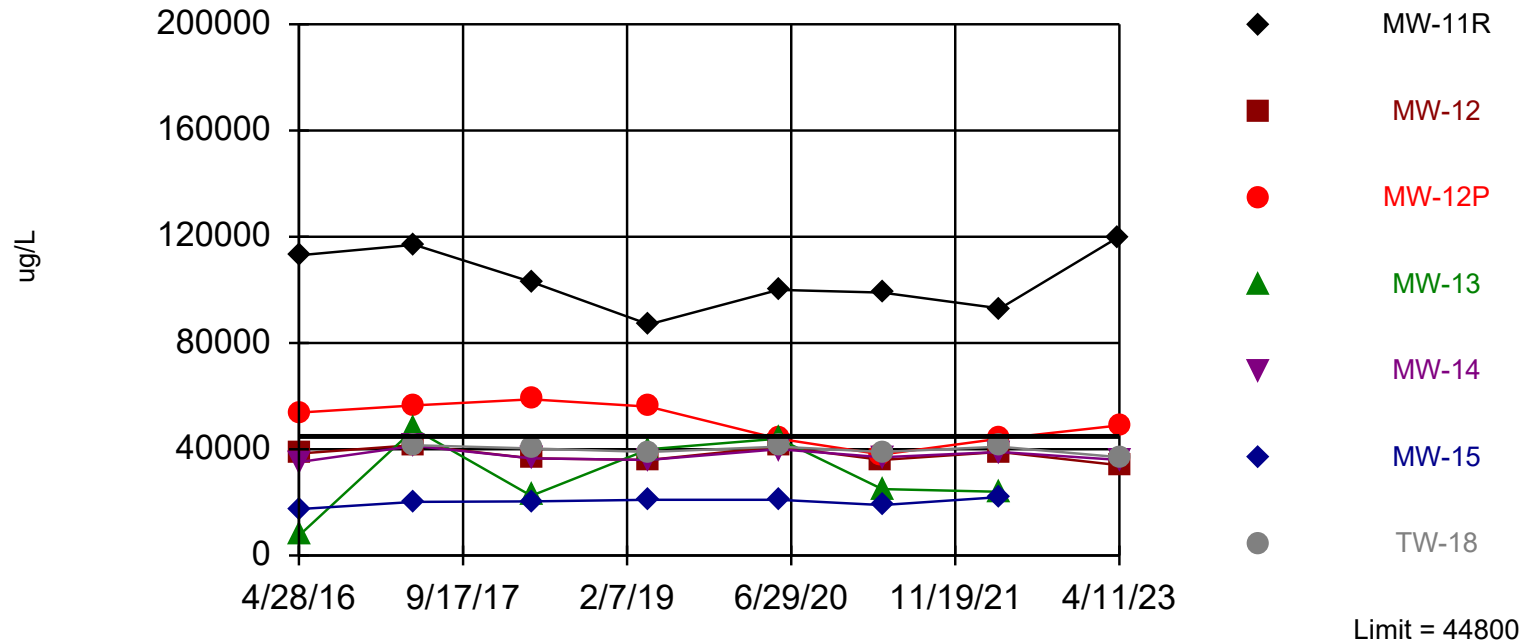
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	59000	8320	3760	250				
4/29/2016					<12.8	64.8	226	
4/19/2017					27.1 (J,B)			
4/20/2017	65800	11500	5100	2370		94.5 (B)	2040	1090
4/16/2018					<9.6			
4/17/2018	54400	9190	2010	1270		13.4 (J)	285	3980
4/15/2019					<66		110 (B)	
4/16/2019	50000 (B)	15000 (B)	220 (B)	130 (B)		<66		530 (B)
5/20/2020					<50			
5/21/2020	49000	6600	240	120				
5/22/2020						<50	57 (J)	340
4/6/2021		6300		<36				
4/7/2021	52000		180		<36	<36	39 (J)	79 (J)
4/6/2022		12000		39 (J)	<36 (U)		<36 (U)	1000
4/7/2022	46000		280			<36 (U)		
4/10/2023	55000							
4/11/2023		6800		<36 (U)	<36 (U)		<36 (U)	3200

Exceeds Limit: MW-11R, MW-12P

Magnesium

Interwell Parametric



Background Data Summary: Mean=38038, Std. Dev.=2255, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9413, critical = 0.749. Kappa = 2.995 (c=17, w=7, 1 of 2, event alpha = 0.1). Report alpha = 0.006179. Individual comparison alpha = 0.000885. Comparing 7 points to limit.

Prediction Limit Analysis Run 7/14/2023 9:25 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Prediction Limit

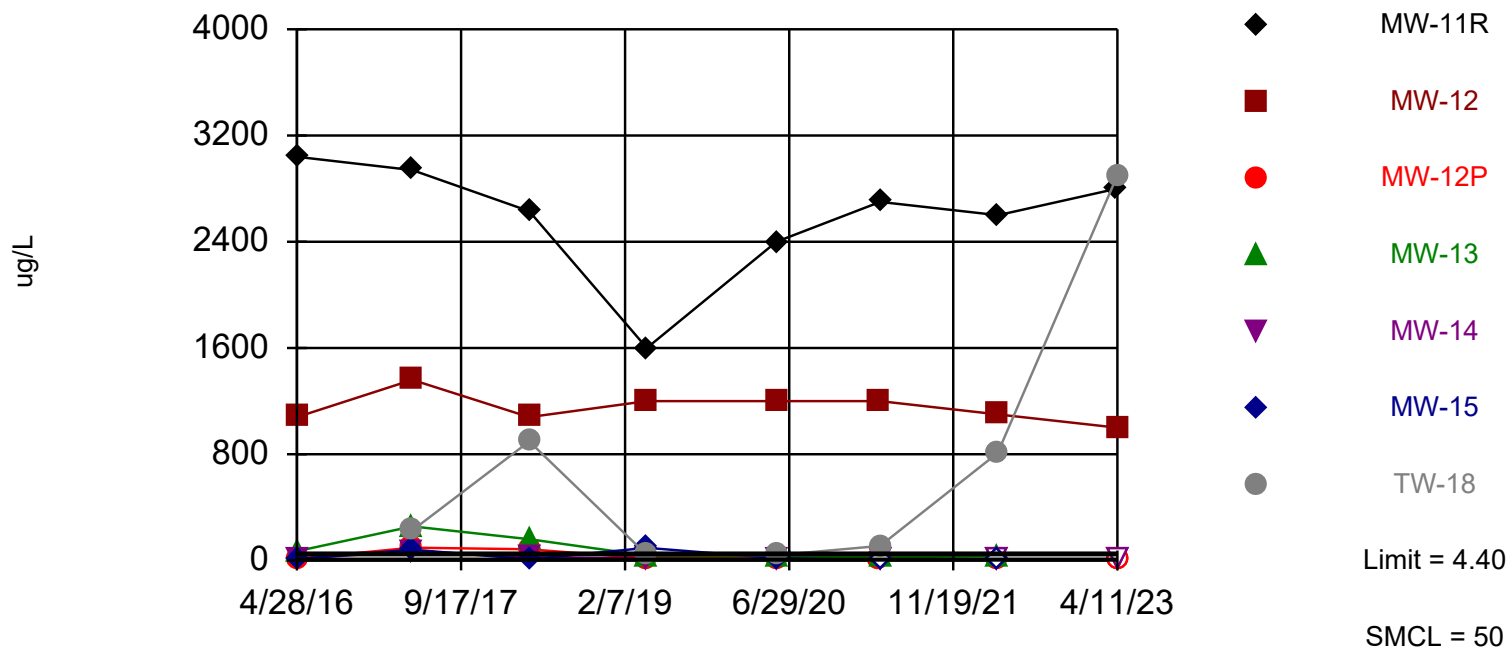
Constituent: Magnesium (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	113000	38400	7490	53800				
4/29/2016					37600	17500	35200	
4/19/2017					37900			
4/20/2017	117000	41600	47600	56500		20200	41300	41500
4/16/2018					36800			
4/17/2018	103000 (M1)	36600	22500	58800		20400	36600	40300
4/15/2019					34000		36000	
4/16/2019	87000	36000	40000	56000		21000		39000
5/20/2020					41000			
5/21/2020	100000	41000	44000	44000				
5/22/2020						21000	40000	41000
4/6/2021		36000		38000				
4/7/2021	99000		25000		37000	19000	37000	39000
4/6/2022		39000		44000	40000		39000	41000
4/7/2022	93000		24000			22000		
4/10/2023	120000							
4/11/2023		34000		49000	40000		36000	37000

Exceeds Limit: MW-11R, MW-12, MW-13,
TW-18

Manganese

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Annual per-constituent alpha = 0.1216. Individual comparison alpha = 0.01836 (1 of 2). Comparing 7 points to limit.

Prediction Limit

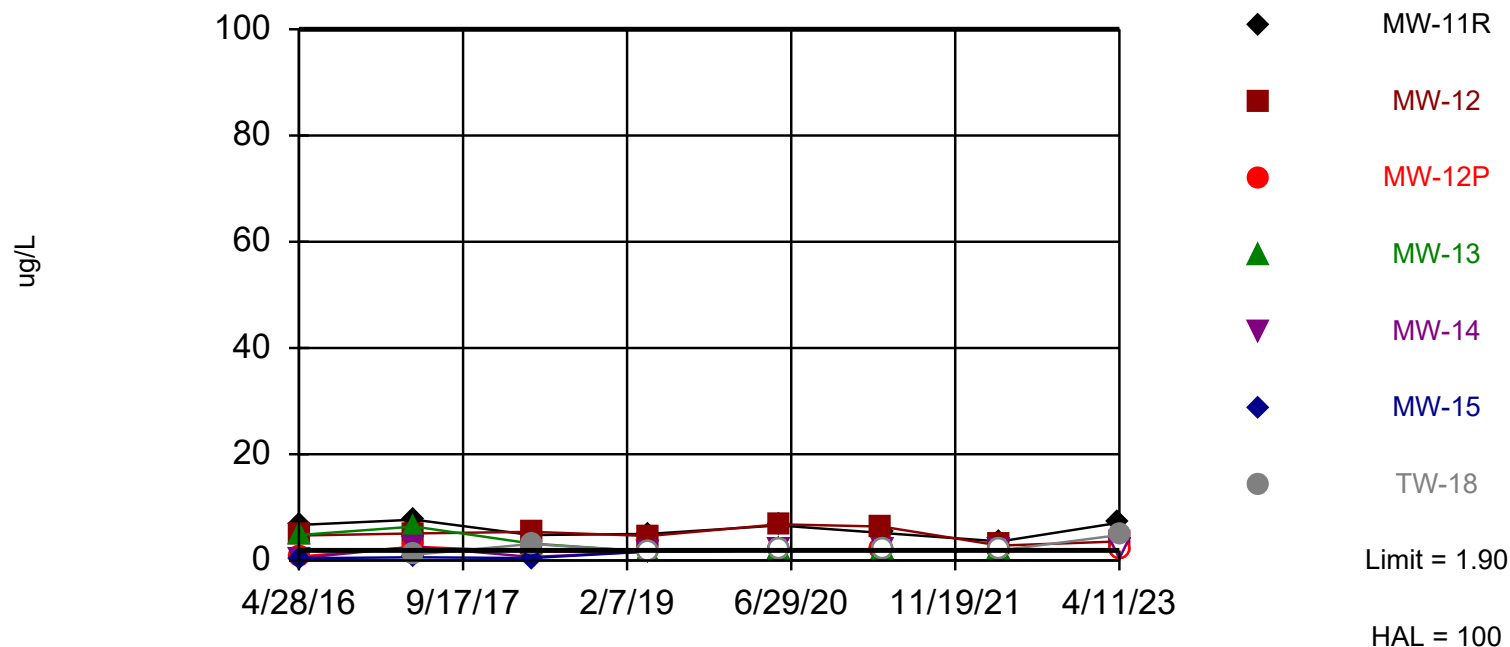
Constituent: Manganese (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	3040	1080	70.4	13.7				
4/29/2016					1.5 (Y)	11.1	12.6	
4/19/2017					1.8 (B)			
4/20/2017	2940	1360	257	96.9		82.1	71.7	227
4/16/2018					0.28 (J)			
4/17/2018	2630	1080	160	84.8		9.1	25.8	897
4/15/2019					<2.5		15	
4/16/2019	1600	1200	36	16		96		43
5/20/2020					<4			
5/21/2020	2400	1200	32	18				
5/22/2020						17	6 (J)	40
4/6/2021		1200		6.7 (J)				
4/7/2021	2700		26		<4.4	<4.4	<4.4	110
4/6/2022		1100		4.9 (J)	<3.6 (U)		<3.6 (U)	810
4/7/2022	2600		32			<3.6 (U)		
4/10/2023	2800							
4/11/2023		1000		<3.6 (U)	<3.6 (U)		<3.6 (U)	2900

Exceeds Limit: MW-11R

Nickel

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Annual per-constituent alpha = 0.1216. Individual comparison alpha = 0.01836 (1 of 2). Comparing 7 points to limit.

Prediction Limit

Constituent: Nickel (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data

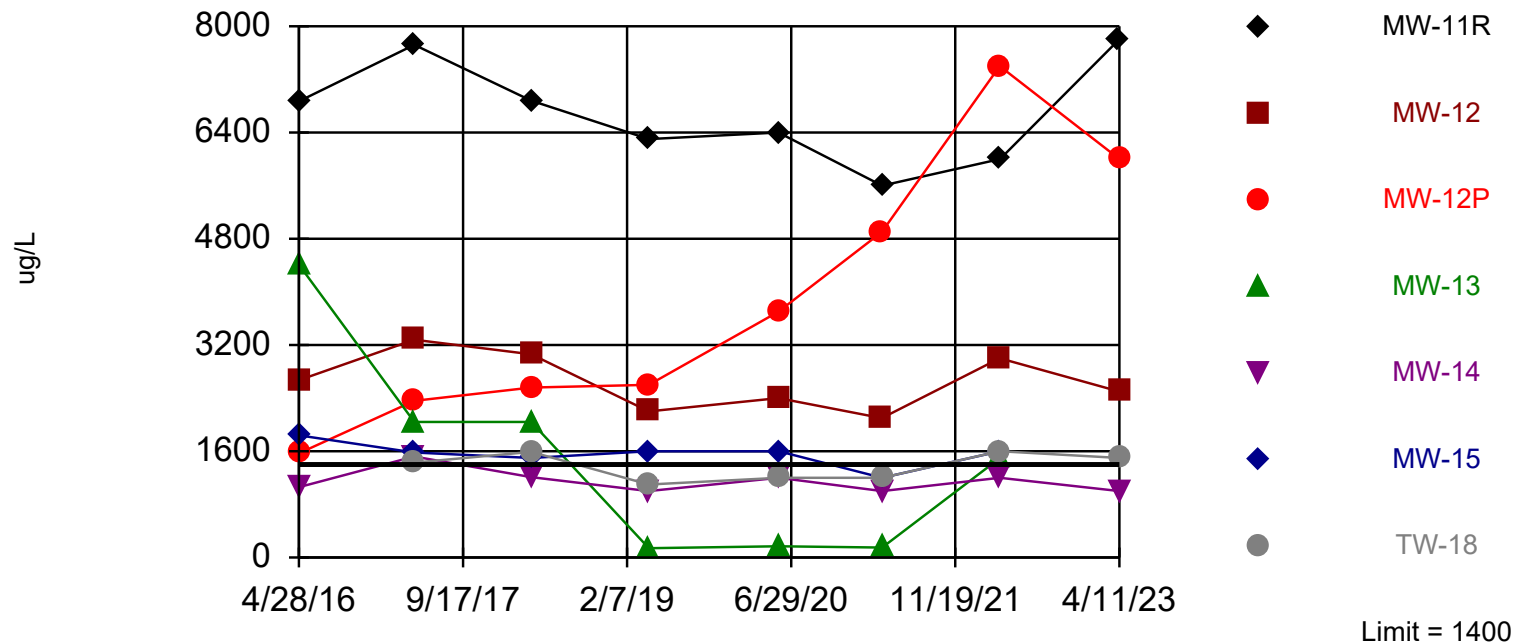
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	6.7	4.7	4.8	0.74 (J)				
4/29/2016					<0.27	0.44 (J)	0.42 (J)	
4/19/2017					0.5 (J,B)			
4/20/2017	7.7	5.1	6.4	2.6		0.62 (J,B)	2.6	1.1 (B)
4/16/2018					0.3 (J)			
4/17/2018	4.8	5.4	3.2	1.7		0.46 (J)	0.67 (J)	3.1
4/15/2019					<1.7		<1.7	
4/16/2019	5	4.6 (J)	<1.7	<1.7		<1.7		<1.7
5/20/2020					<1.9			
5/21/2020	6.6	6.8	<1.9	<1.9				
5/22/2020						<1.9	<1.9	<1.9
4/6/2021		6.4		<1.9				
4/7/2021	5.2		<1.9		<1.9	<1.9	<1.9	<1.9
4/6/2022		2.8 (J)		<1.9 (U)	<1.9 (U)		<1.9 (U)	<1.9 (U)
4/7/2022	3.6 (J)		<1.9 (U)			<1.9 (U)		
4/10/2023	7.1							
4/11/2023		3.6 (J)		<1.9 (U)	<1.9 (U)		<1.9 (U)	4.8 (J)

Exceeds Limit: MW-11R, MW-12, MW-12P,
MW-13, MW-15, TW-18

Potassium

Interwell Parametric



Background Data Summary: Mean=1084, Std. Dev.=105.6, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8551, critical = 0.749. Kappa = 2.995 (c=17, w=7, 1 of 2, event alpha = 0.1). Report alpha = 0.006179. Individual comparison alpha = 0.000885. Comparing 7 points to limit.

Prediction Limit

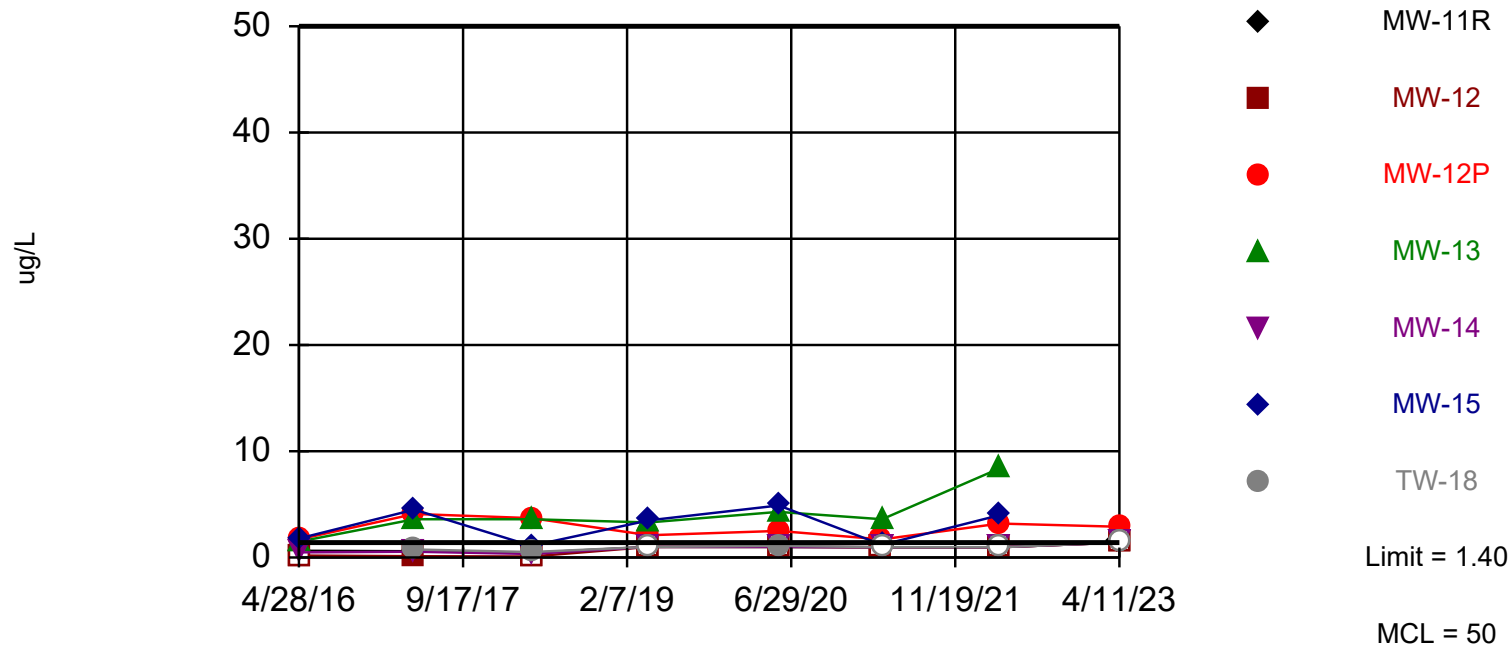
Constituent: Potassium (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	6870	2670	4410	1570				
4/29/2016					1010	1840	1060	
4/19/2017					1020			
4/20/2017	7720	3280	2040	2360		1580	1520	1430
4/16/2018					1100			
4/17/2018	6880	3060	2040	2560		1500	1210	1590
4/15/2019					940		1000	
4/16/2019	6300	2200	140 (J)	2600		1600		1100
5/20/2020					1200			
5/21/2020	6400	2400	170 (J)	3700				
5/22/2020						1600	1200	1200
4/6/2021		2100		4900				
4/7/2021	5600		150 (J)		1000	1200	1000	1200
4/6/2022		3000		7400	1200		1200	1600
4/7/2022	6000		1500			1600		
4/10/2023	7800							
4/11/2023		2500		6000	1200		1000	1500

Exceeds Limit: MW-13

Selenium

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Annual per-constituent alpha = 0.1216. Individual comparison alpha = 0.01836 (1 of 2). Comparing 7 points to limit.

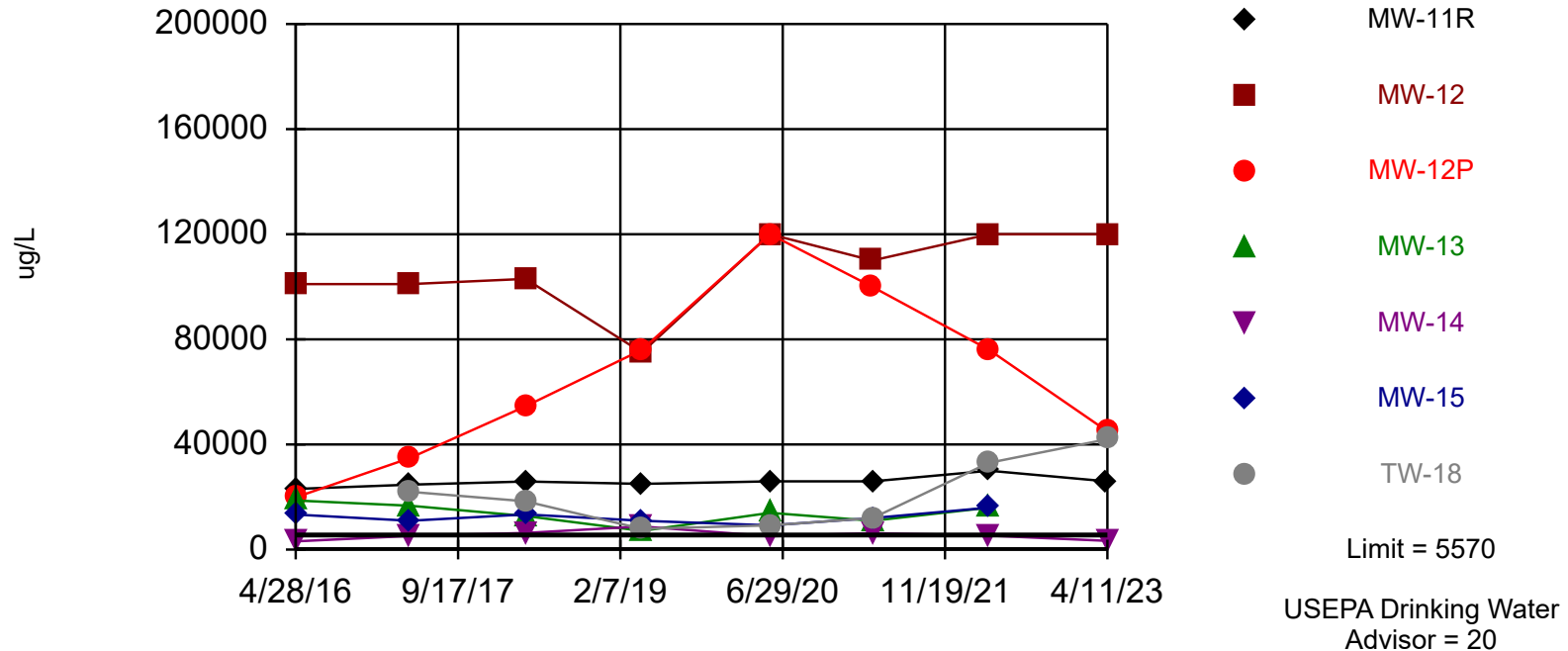
Prediction Limit

Constituent: Selenium (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	0.63 (J)	<0.18	1.5	1.7				
4/29/2016					0.46 (J)	1.8	0.48 (J)	
4/19/2017					0.46 (J)			
4/20/2017	0.59 (J)	0.13 (J)	3.6	4.1		4.5	0.54 (J)	0.76 (J)
4/16/2018					0.24 (J)			
4/17/2018	0.44 (J)	<0.086	3.6	3.7		1.1	0.34 (J)	0.51 (J)
4/15/2019					<1		<1	
4/16/2019	<1	<1	3.3 (J)	2.1 (J)		3.5 (J)		<1
5/20/2020					<1			
5/21/2020	<1	<1	4.3 (J)	2.5 (J)				
5/22/2020						4.9 (J)	<1	1.1 (J)
4/6/2021		<0.96		1.7 (J)				
4/7/2021	<0.96		3.6 (J,B)		<0.96	1.2 (J,B)	<0.96	<0.96
4/6/2022		<0.96 (U)		3.2 (J)	<0.96 (U)		<0.96 (U)	<0.96 (U)
4/7/2022	<0.96 (U)		8.4			4 (J)		
4/10/2023	1.4 (J)							
4/11/2023		<1.4 (U)		2.9 (J)	<1.4 (U)		<1.4 (U)	<1.4 (U)

Exceeds Limit: MW-11R, MW-12, MW-12P,
MW-13, MW-15, TW-18

Sodium Interwell Parametric



Background Data Summary: Mean=4704, Std. Dev.=287.7, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8746, critical = 0.749. Kappa = 2.995 (c=17, w=7, 1 of 2, event alpha = 0.1). Report alpha = 0.006179. Individual comparison alpha = 0.000885. Comparing 7 points to limit.

Prediction Limit Analysis Run 7/14/2023 9:25 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Prediction Limit

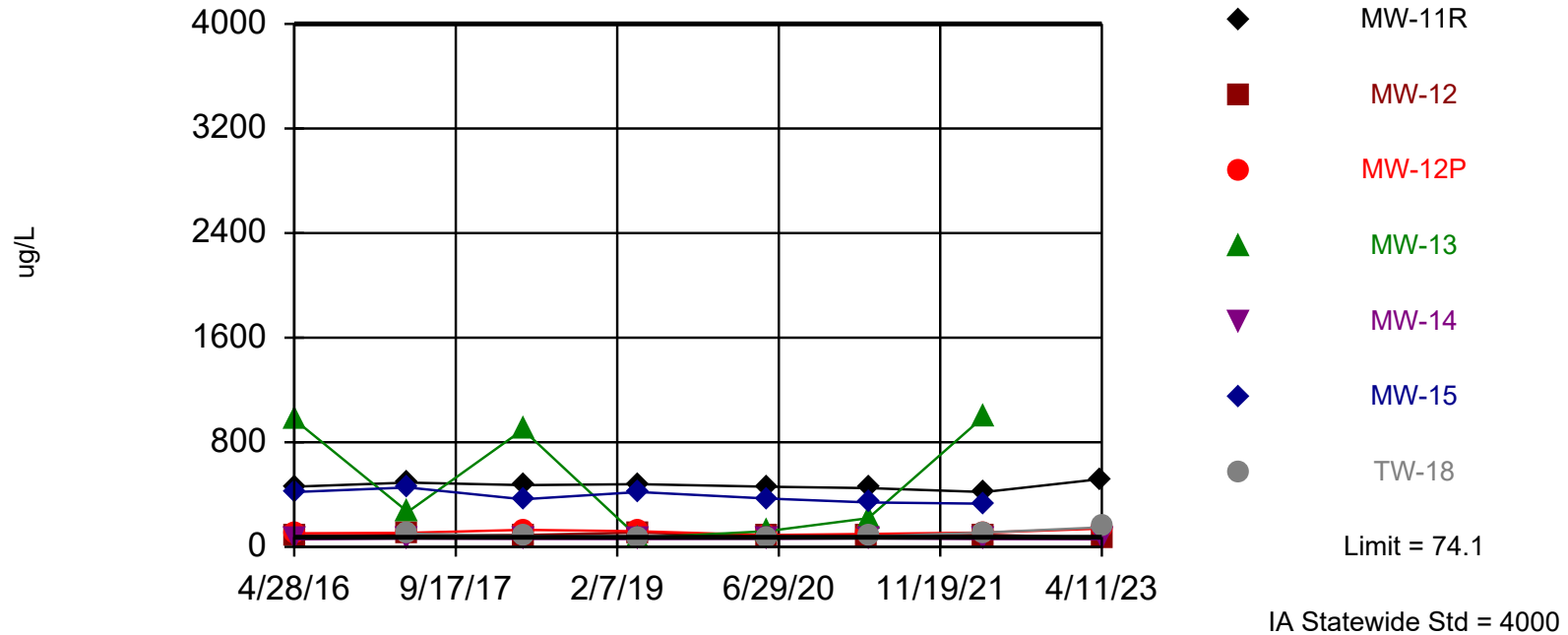
Constituent: Sodium (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	23100	101000	18700	19900				
4/29/2016					4610	13300	3140	
4/19/2017					4870			
4/20/2017	24700	101000	16700	34800		11000	5220	22000
4/16/2018					4650			
4/17/2018	25900	103000	12800	54500		13400	6340	18400
4/15/2019					4500		8800	
4/16/2019	25000	75000	7100	76000		11000		7900
5/20/2020					5100			
5/21/2020	26000	120000	14000	120000				
5/22/2020						9200	5100	9200
4/6/2021		110000		100000				
4/7/2021	26000		11000		4400	12000	6300	12000
4/6/2022		120000		76000	5100		5300	33000
4/7/2022	30000		16000			16000		
4/10/2023	26000							
4/11/2023		120000		45000	4400		3300	42000

Exceeds Limit: MW-11R, MW-12P, MW-13,
MW-15, TW-18

Strontium

Interwell Parametric



Background Data Summary: Mean=62.59, Std. Dev.=3.851, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9087, critical = 0.749. Kappa = 2.995 (c=17, w=7, 1 of 2, event alpha = 0.1). Report alpha = 0.006179. Individual comparison alpha = 0.000885. Comparing 7 points to limit.

Prediction Limit Analysis Run 7/14/2023 9:25 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Prediction Limit

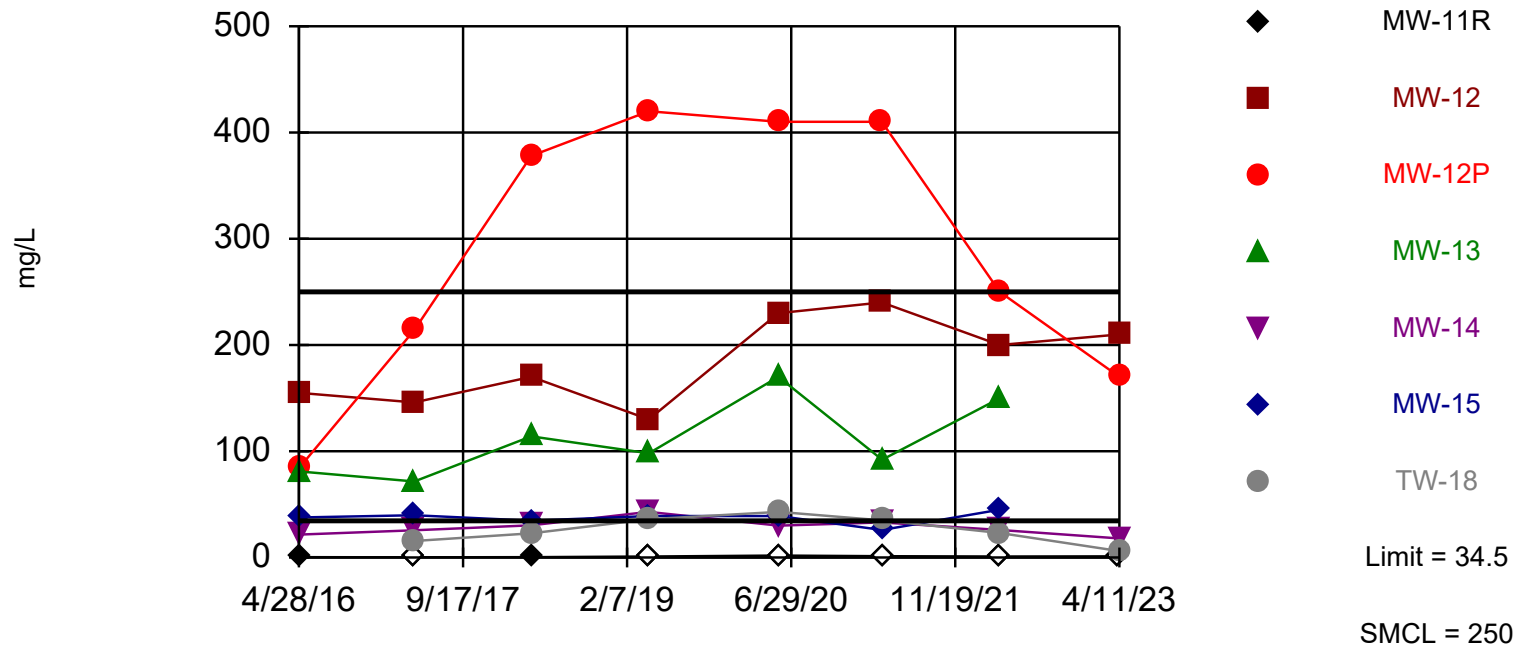
Constituent: Strontium (ug/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-11R	MW-12	MW-13	MW-12P	MW-6 (bg)	MW-15	MW-14	TW-18
4/28/2016	460 (Y)	83.9	975 (Y)	104 (Y)				
4/29/2016					60.7 (Y)	419 (Y)	58.3 (Y)	
4/19/2017					61.2 (N2)			
4/20/2017	492 (N2)	94.2 (N2)	268 (N2)	107 (N2)		454 (N2)	63.8 (N2)	101 (N2)
4/16/2018					63.8 (N2)			
4/17/2018	473 (N2)	90.6 (N2)	897 (N2)	130 (N2)		364 (N2)	61.6 (N2)	85.6 (N2)
4/15/2019					58		60	
4/16/2019	480	110	70	120		420		67
5/20/2020					70			
5/21/2020	460	81	120	91				
5/22/2020						370	62	63
4/6/2021		79		99				
4/7/2021	450		220		66	340	65	80
4/6/2022		93		110	61		61	110
4/7/2022	420		1000			330		
4/10/2023	520							
4/11/2023		70		140	60		58	150

Exceeds Limit: MW-12, MW-12P, MW-13,
MW-15

Sulfate

Interwell Parametric



Background Data Summary: Mean=26.01, Std. Dev.=3.983, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9063, critical = 0.888. Kappa = 2.141 (c=17, w=7, 1 of 2, event alpha = 0.1). Report alpha = 0.006179. Individual comparison alpha = 0.000885. Comparing 7 points to limit.

Prediction Limit

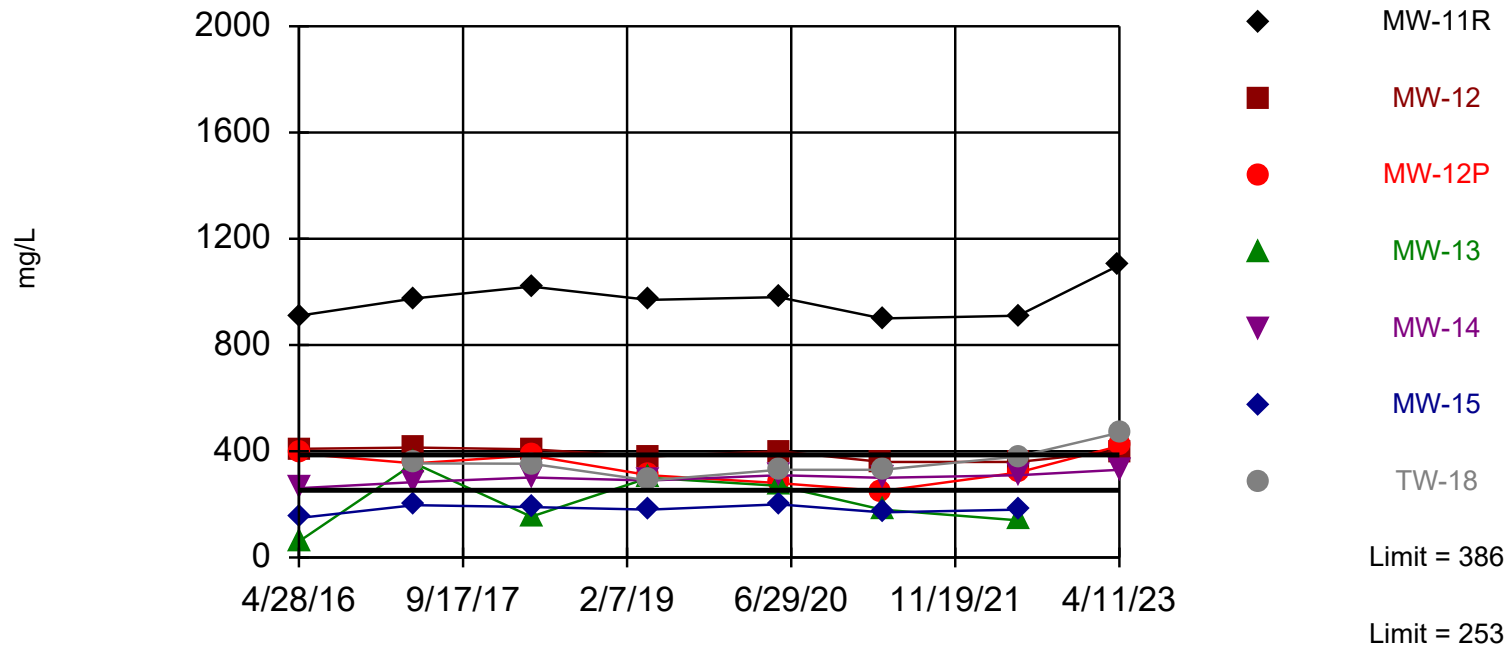
Constituent: Sulfate (mg/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)	MW-13	MW-11R	MW-12P	MW-12	MW-15	MW-14	TW-18
5/11/2001	29							
3/8/2002	33							
2/19/2004	25							
5/26/2004	30							
8/23/2004	31							
11/18/2004	27							
5/5/2005	38							
5/19/2006	28 (J)							
5/30/2007	190 (X)							
4/16/2008	20							
4/3/2009	24							
4/21/2010	24.8							
5/4/2011	24.4							
4/25/2012	21.1							
4/2/2013	23.4							
7/2/2013	24.8							
4/29/2014	24.2							
4/20/2015	23.8							
4/28/2016		81.1	0.38 (J,Y)	84.1	155			
4/29/2016	24					37.7	21.5	
4/19/2017	25.4							
4/20/2017		71.5	<0.5	214	146	39.8	25.7	15.5
4/16/2018	26.4							
4/17/2018		114	0.39 (J)	378	170	34.6	30.3	22.7
4/15/2019	27						43	
4/16/2019		98	<1.8	420	130	39		36
5/20/2020	27							
5/21/2020		170	<3.6	410	230			
5/22/2020						39	30	43
4/6/2021				410	240			
4/7/2021	25	92	<2.5			26	33	35
4/6/2022	24			250	200		26	23
4/7/2022		150	<2 (U)			45		
4/10/2023			<2.1 (U)					
4/11/2023	20			170	210		18	6.1

Exceeds Limits: MW-11R, MW-12, MW-12P, MW-13, MW-15, TW-18

Total Alkalinity

Interwell Parametric



Background Data Summary: Mean=319.3, Std. Dev.=26.46, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8863, critical = 0.805. Kappa = 2.521 (c=17, w=7, 1 of 2, event alpha = 0.1). Report alpha = 0.006179. Individual comparison alpha = 0.0004425. Comparing 7 points to limit.

Prediction Limit Analysis Run 7/14/2023 9:25 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

Prediction Limit

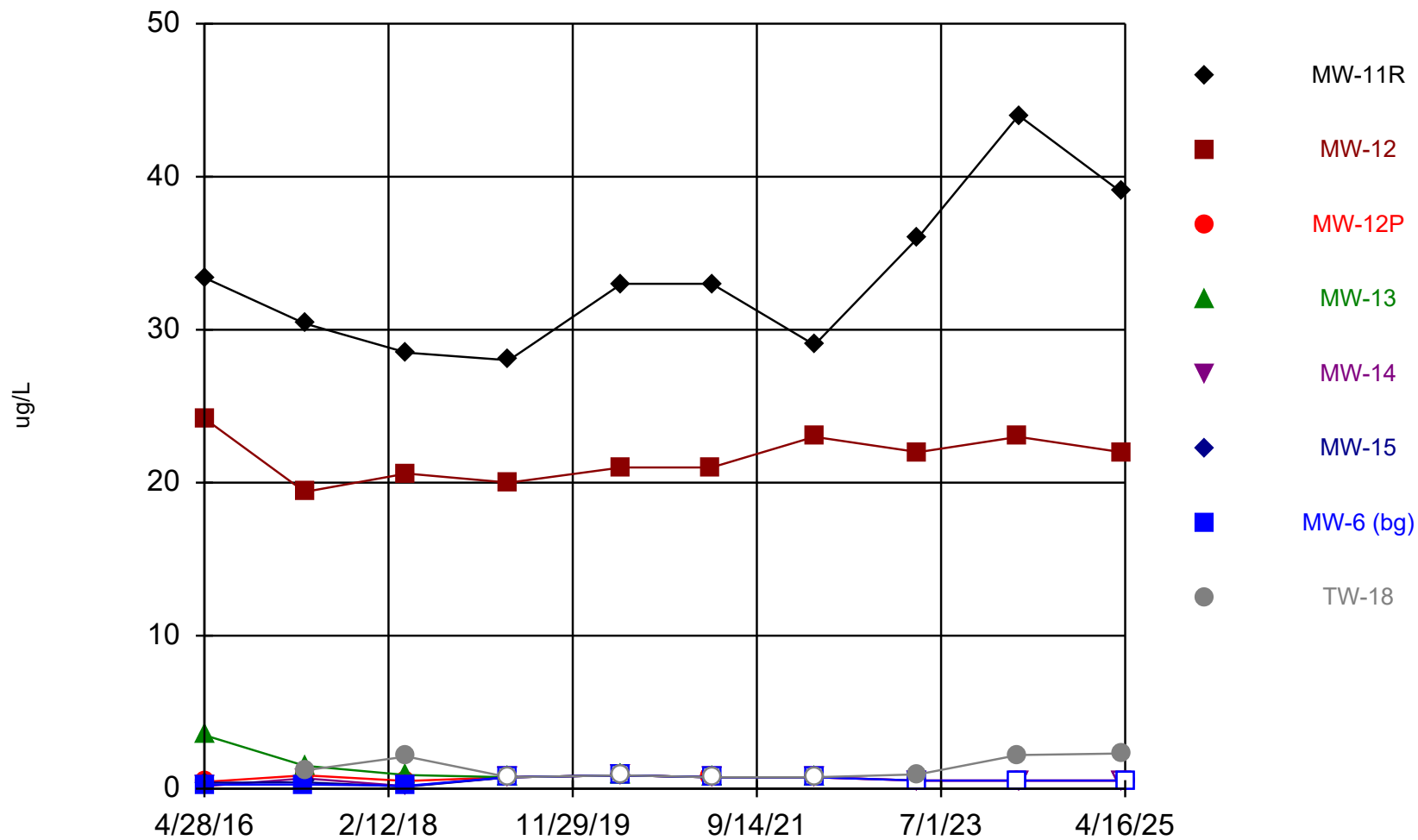
Constituent: Total Alkalinity (mg/L) Analysis Run 7/14/2023 9:27 AM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LAN - 2016 thru 2020 Data additions

	MW-6 (bg)	MW-11R	MW-12	MW-13	MW-12P	MW-15	MW-14	TW-18
4/2/2013	314							
7/2/2013	298							
4/29/2014	327							
4/20/2015	311							
4/28/2016		910	409	60.2	391			
4/29/2016	377					149	261	
4/19/2017	293							
4/20/2017		975	414	355	354	197	284	354
4/16/2018	311							
4/17/2018		1020	407	154	384	190	301	353
4/15/2019	290						290	
4/16/2019		970	380	300	310	180		290
5/20/2020	320							
5/21/2020		980	400	270	280			
5/22/2020						200	310	330
4/6/2021			360		250			
4/7/2021	300	900		180		170	300	330
4/6/2022	330							
6/2/2022		910	360	140	320	180	310	380
4/10/2023		1100						
4/11/2023	360		400		420		330	470



D2 2016 through 2025 Data Summary

Time Series



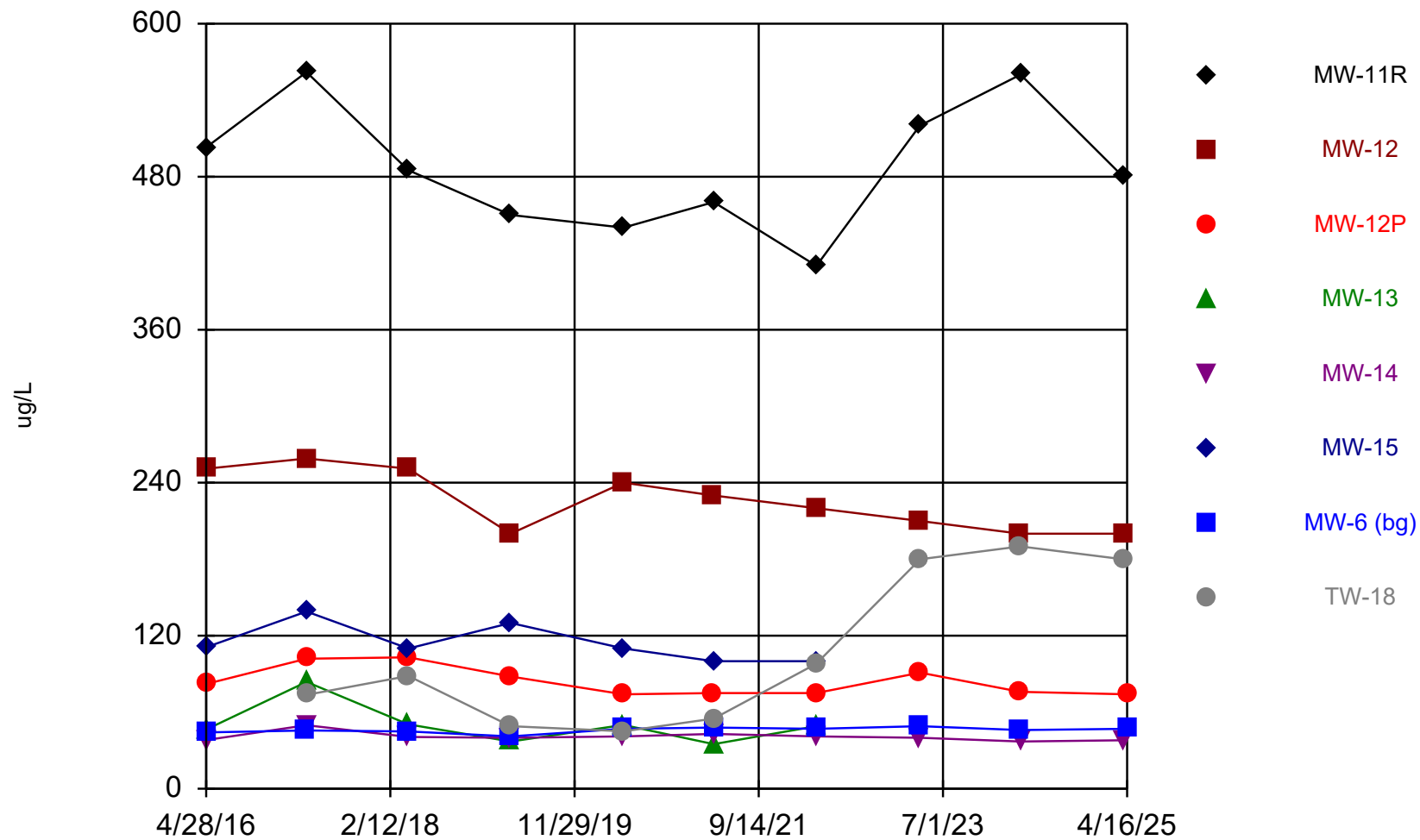
Constituent: Arsenic Analysis Run 10/14/2025 1:34 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Arsenic (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	33.4	24.2	0.44 (J)	3.5				
4/29/2016					0.16 (J)	0.39 (J)	0.26 (J)	
4/19/2017							0.27 (J)	
4/20/2017	30.4	19.4	0.88 (J)	1.5	0.68 (J)	0.42 (J)		1.2
4/16/2018							0.19 (J)	
4/17/2018	28.5	20.6	0.51 (J)	0.89 (J)	0.16 (J)	0.14 (J)		2.1
4/15/2019					<0.75		<0.75	
4/16/2019	28	20	<0.75	<0.75		<0.75		<0.75
5/20/2020							<0.88	
5/21/2020	33	21	<0.88	<0.88				
5/22/2020					<0.88	<0.88		<0.88
4/6/2021		21	<0.75					
4/7/2021	33			<0.75	<0.75	<0.75	<0.75	<0.75
4/6/2022		23	<0.75 (U)		<0.75 (U)		<0.75 (U)	<0.75 (U)
4/7/2022	29			<0.75 (U)		<0.75 (U)		
4/10/2023	36							
4/11/2023		22	<0.53 (U)		<0.53 (U)		<0.53 (U)	0.94 (J)
4/1/2024		23	<0.53 (U)				<0.53 (U)	2.2
4/2/2024	44				<0.53 (U)			
4/1/2025								2.3
4/2/2025	39	22			<0.53			
4/16/2025			<0.53				<0.53	

Time Series



Constituent: Barium Analysis Run 10/14/2025 1:34 PM View: Lansing State Data

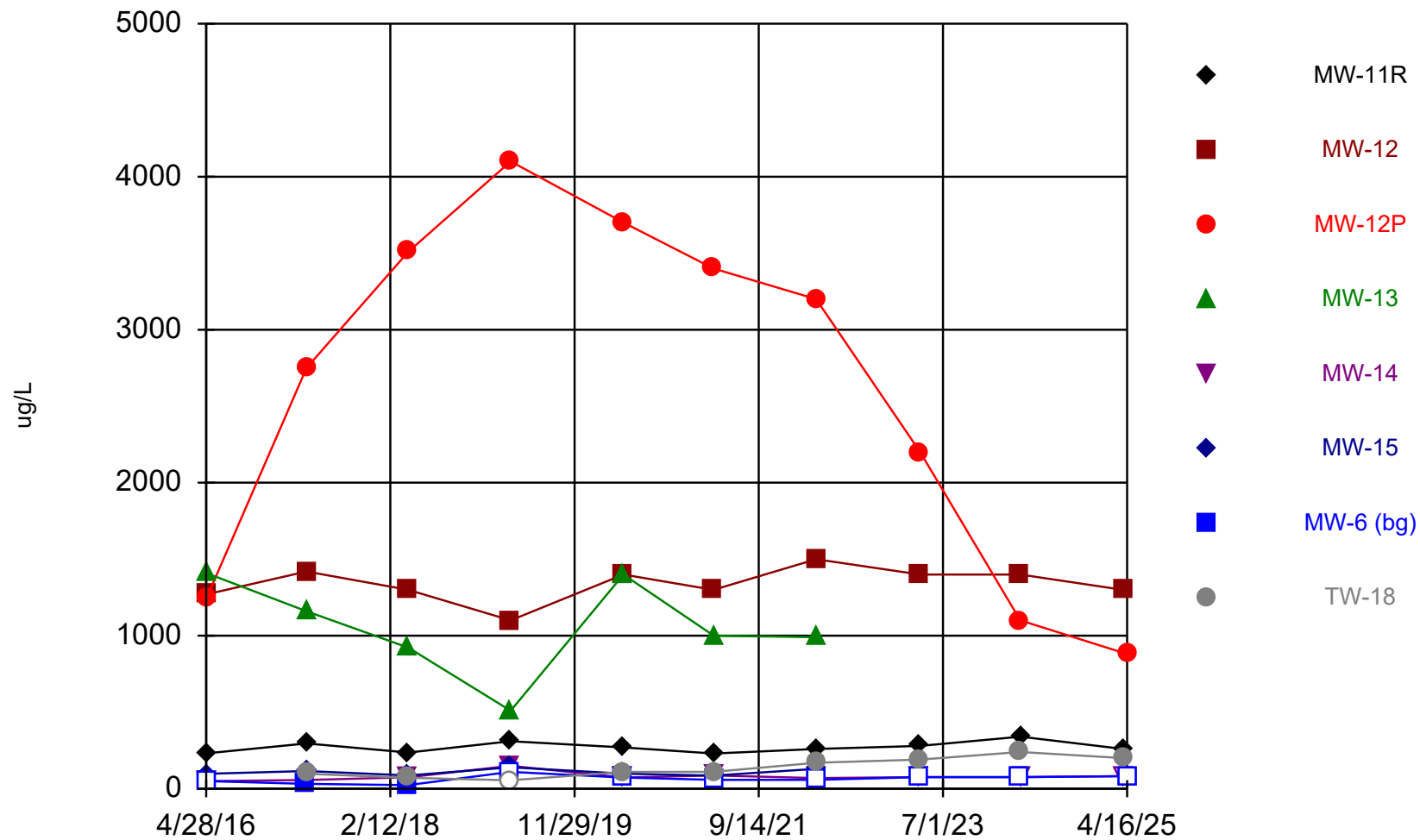
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Barium (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	503	251	82.2	46.4				
4/29/2016					38.2	111	44.2	
4/19/2017							45.7	
4/20/2017	562	259	102	83.8	49.8	139		73.6
4/16/2018							44.9	
4/17/2018	485	251	103	50.5	40.6	110		88.4
4/15/2019					40 (B)		41 (B)	
4/16/2019	450 (B)	200 (B)	88 (B)	37 (B)		130 (B)		49 (B)
5/20/2020							47	
5/21/2020	440	240	74	50				
5/22/2020					41	110		45
4/6/2021		230	75					
4/7/2021	460			35	43	100	48	55
4/6/2022		220	75		41		47	98
4/7/2022	410			49		100		
4/10/2023	520							
4/11/2023		210	91		40		49	180
4/1/2024		200	76				46	190
4/2/2024	560				37			
4/1/2025								180
4/2/2025	480	200			38			
4/16/2025			74				47	

Time Series



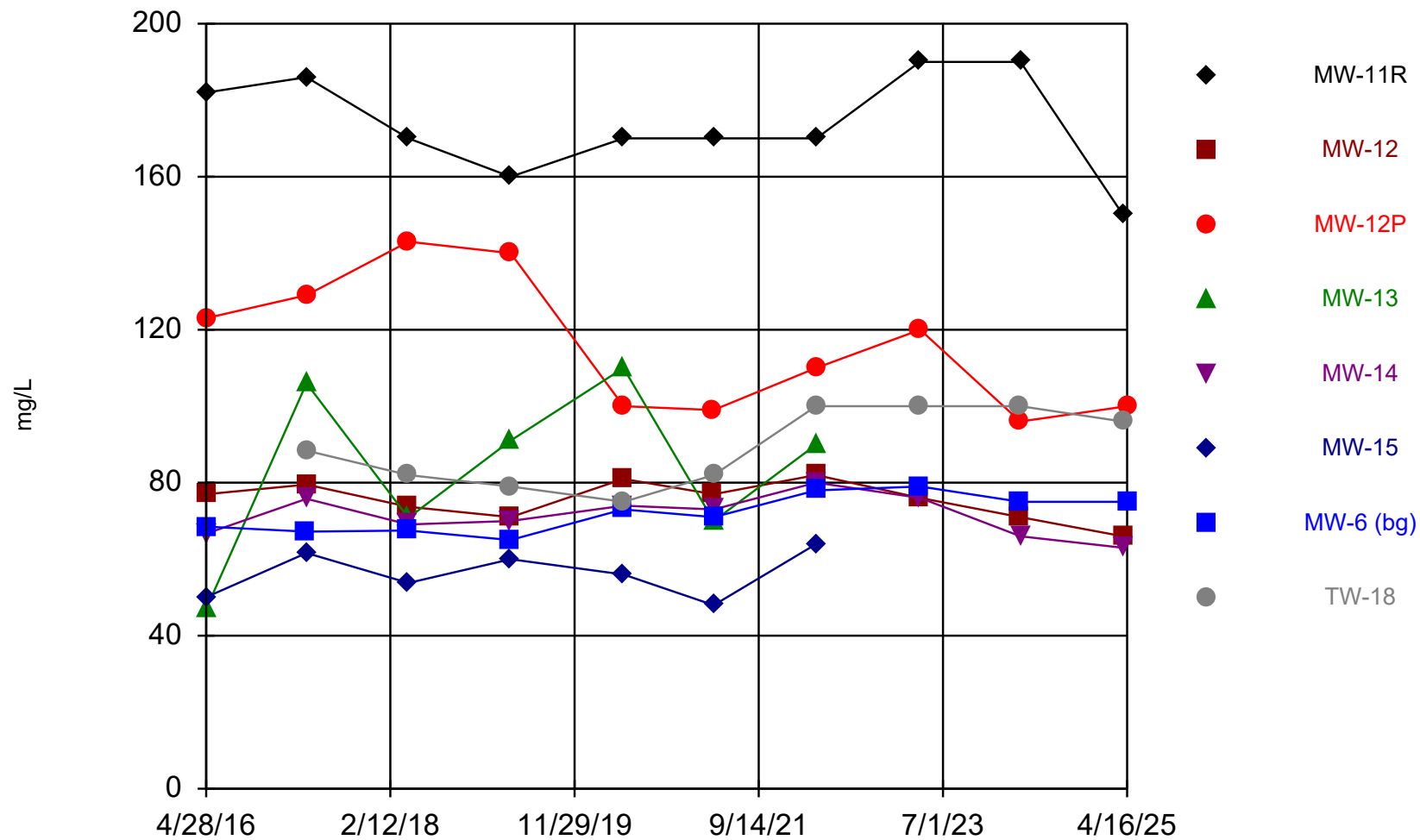
Constituent: Boron Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Boron (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	231	1270	1240	1410				
4/29/2016					<50	97.1 (J)	<50	
4/19/2017							32 (J,B)	
4/20/2017	296	1420	2750	1160	57.3 (J)	116		97.6 (J)
4/16/2018							23.8 (J)	
4/17/2018	236	1300	3510	922	75 (J)	86.5 (J)		71.2 (J)
4/15/2019					150 (J)		<110	
4/16/2019	310	1100	4100	510		140 (J)		<110
5/20/2020							<73	
5/21/2020	270	1400	3700	1400				
5/22/2020					<73	98 (J)		110
4/6/2021		1300	3400					
4/7/2021	230			1000	87 (J)	86 (J)	<58	110
4/6/2022		1500	3200		70 (J)		<58 (U)	170
4/7/2022	260			990		130		
4/10/2023	280							
4/11/2023		1400	2200		<76 (U)		<76 (U)	190
4/1/2024		1400	1100				<76 (U)	240
4/2/2024	340 (J)				<76 (U)			
4/1/2025								200
4/2/2025	260	1300			<82			
4/16/2025			880				<82	

Time Series



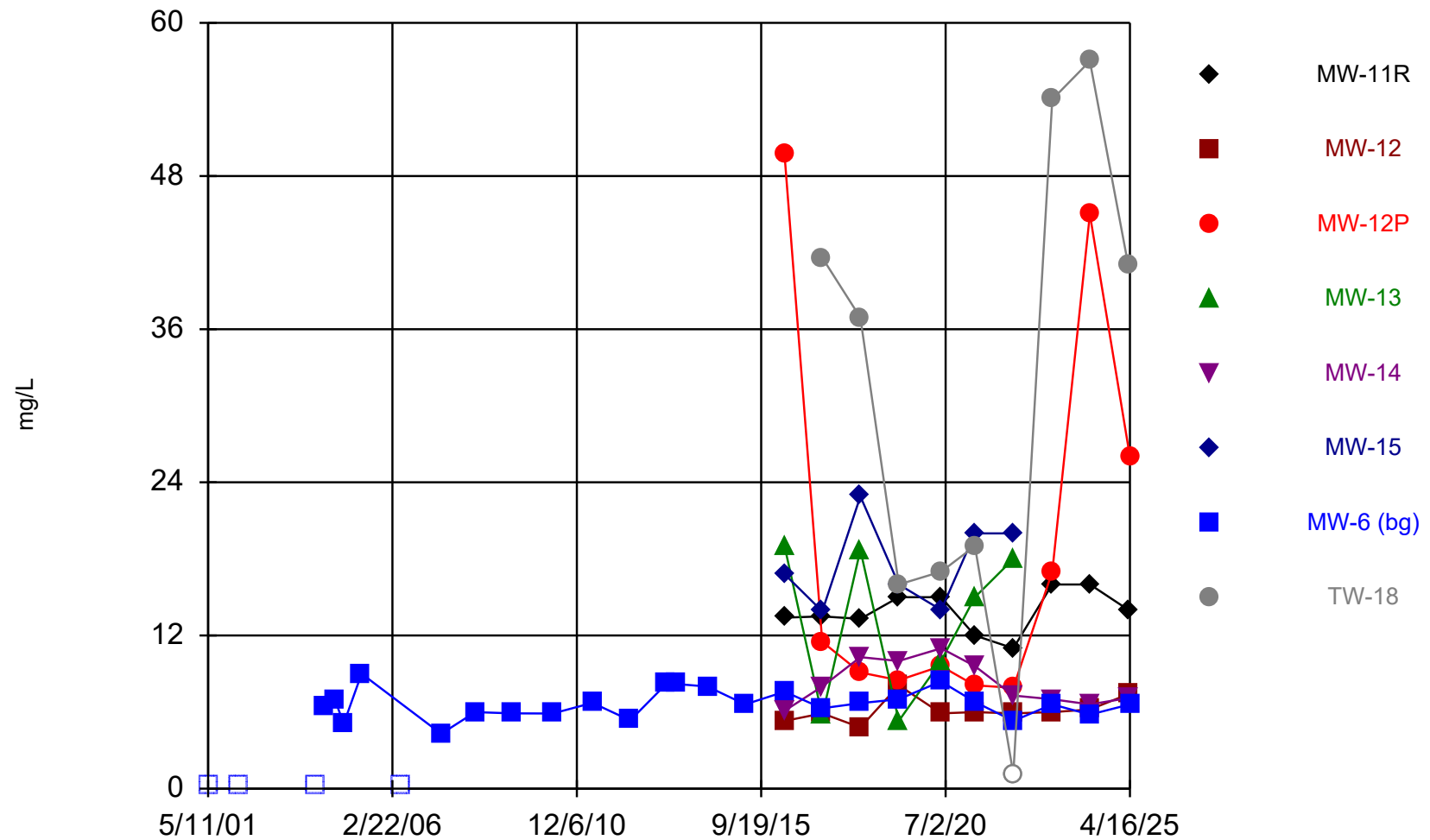
Constituent: Calcium Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Calcium (mg/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	182	77	123	47				
4/29/2016					66.7	50.1	68.5	
4/19/2017							67.2	
4/20/2017	186	79.5	129	106	75.8	61.6		88.4
4/16/2018							67.5	
4/17/2018	170 (M1)	73.7	143	70.8	69.1	53.8		82
4/15/2019					70		65	
4/16/2019	160	71	140	91		60		79
5/20/2020							73	
5/21/2020	170	81	100	110				
5/22/2020					74	56		75
4/6/2021		77	99					
4/7/2021	170			70	73	48	71	82
4/6/2022		82	110		80		78	100
4/7/2022	170			90		64		
4/10/2023	190							
4/11/2023		76	120		76		79	100
4/1/2024		71	96				75	100
4/2/2024	190				66			
4/1/2025								96
4/2/2025	150	66			63			
4/16/2025			100				75	

Time Series



Constituent: Chloride Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

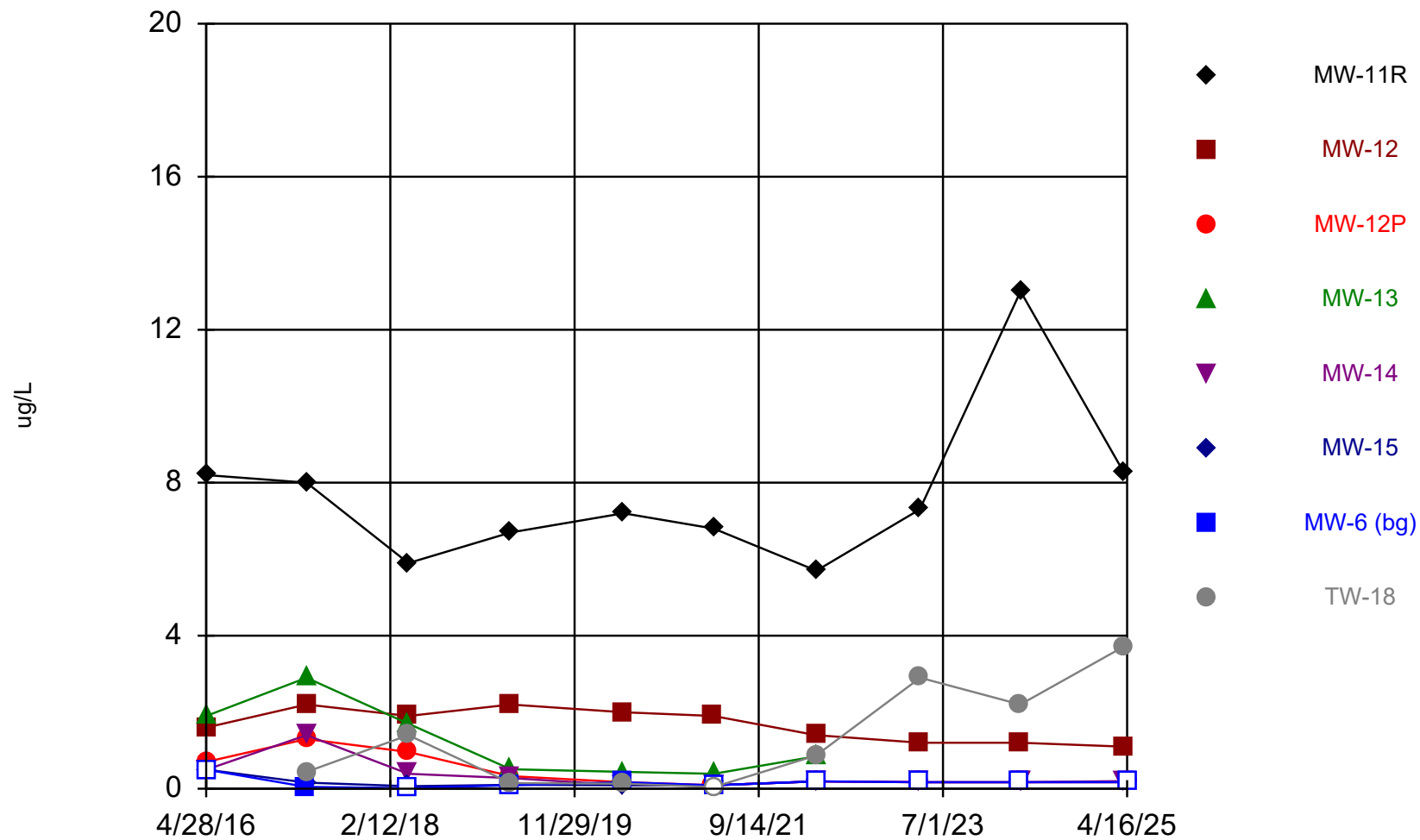
Time Series

Constituent: Chloride (mg/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
5/11/2001							<0.5 (X)	
3/8/2002							<0.5 (X)	
2/19/2004							<0.5 (X)	
5/26/2004							6.5	
8/23/2004							7	
11/18/2004							5.1	
5/5/2005							9	
5/19/2006							<0.5 (X)	
5/30/2007							4.3	
4/16/2008							6	
4/3/2009							5.9	
4/21/2010							5.89	
5/4/2011							6.72	
4/25/2012							5.35	
4/2/2013							8.2	
7/2/2013							8.2	
4/29/2014							8	
4/20/2015							6.6	
4/28/2016	13.4	5.3	49.7	19				
4/29/2016					6.1	16.8	7.6	
4/19/2017							6.3	
4/20/2017	13.5	5.9	11.5	5.7	8	13.9		41.6
4/16/2018							6.7	
4/17/2018	13.3	4.8	9.1	18.7	10.3	22.9		36.9
4/15/2019					10		7	
4/16/2019	15	8.1	8.5	5.3		16		16
5/20/2020							8.4	
5/21/2020	15	5.9	9.6	10				
5/22/2020					11	14		17
4/6/2021		6	8.1					
4/7/2021	12			15	9.6	20	6.8	19
4/6/2022		5.9	7.9		7.3		5.3	<2.3 (U)
4/7/2022	11			18		20		
4/10/2023	16							
4/11/2023		6	17		7		6.6	54
4/1/2024		6.2	45				5.8	57
4/2/2024	16				6.6			
4/1/2025								41
4/2/2025	14	7.4			7.1			
4/16/2025			26				6.6	

ND substitution: RL or RL/2 if <15% NDs.

Time Series



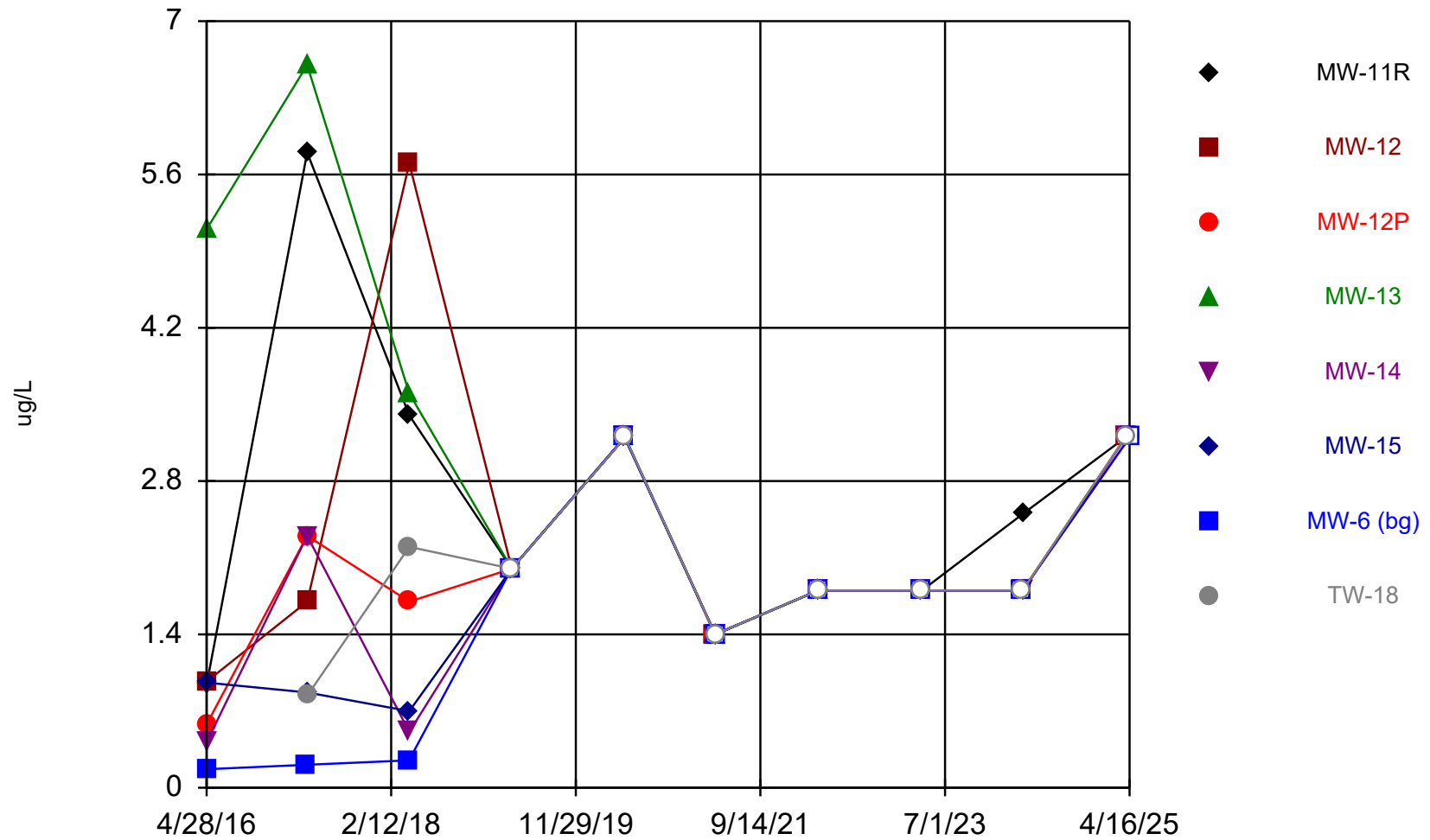
Constituent: Cobalt Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Cobalt (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	8.2	1.6	0.7 (J)	1.9				
4/29/2016					<0.5	<0.5	<0.5	
4/19/2017							0.047 (J,B)	
4/20/2017	8	2.2	1.3	2.9	1.4	0.16 (J,B)		0.44 (J)
4/16/2018							<0.014	
4/17/2018	5.9	1.9	0.96 (J)	1.7	0.39 (J)	0.066 (J)		1.4
4/15/2019					0.28 (J)		<0.091	
4/16/2019	6.7	2.2	0.33 (J)	0.51		0.1 (J)		0.15 (J)
5/20/2020							0.17 (J)	
5/21/2020	7.2	2	0.17 (J)	0.44 (J)				
5/22/2020					0.092 (J)	<0.091		0.13 (J)
4/6/2021		1.9	<0.091					
4/7/2021	6.8			0.39 (J)	<0.091	<0.091	<0.091	<0.091
4/6/2022		1.4	<0.19 (U)		<0.19 (U)		<0.19 (U)	0.87
4/7/2022	5.7			0.85		<0.19 (U)		
4/10/2023	7.3							
4/11/2023		1.2	<0.17 (U)		<0.17 (U)		<0.17 (U)	2.9
4/1/2024		1.2	<0.17 (U)				<0.17 (U)	2.2
4/2/2024	13				<0.17 (U)			
4/1/2025								3.7
4/2/2025	8.3	1.1			0.2 (J)			
4/16/2025			<0.17				<0.17	

Time Series



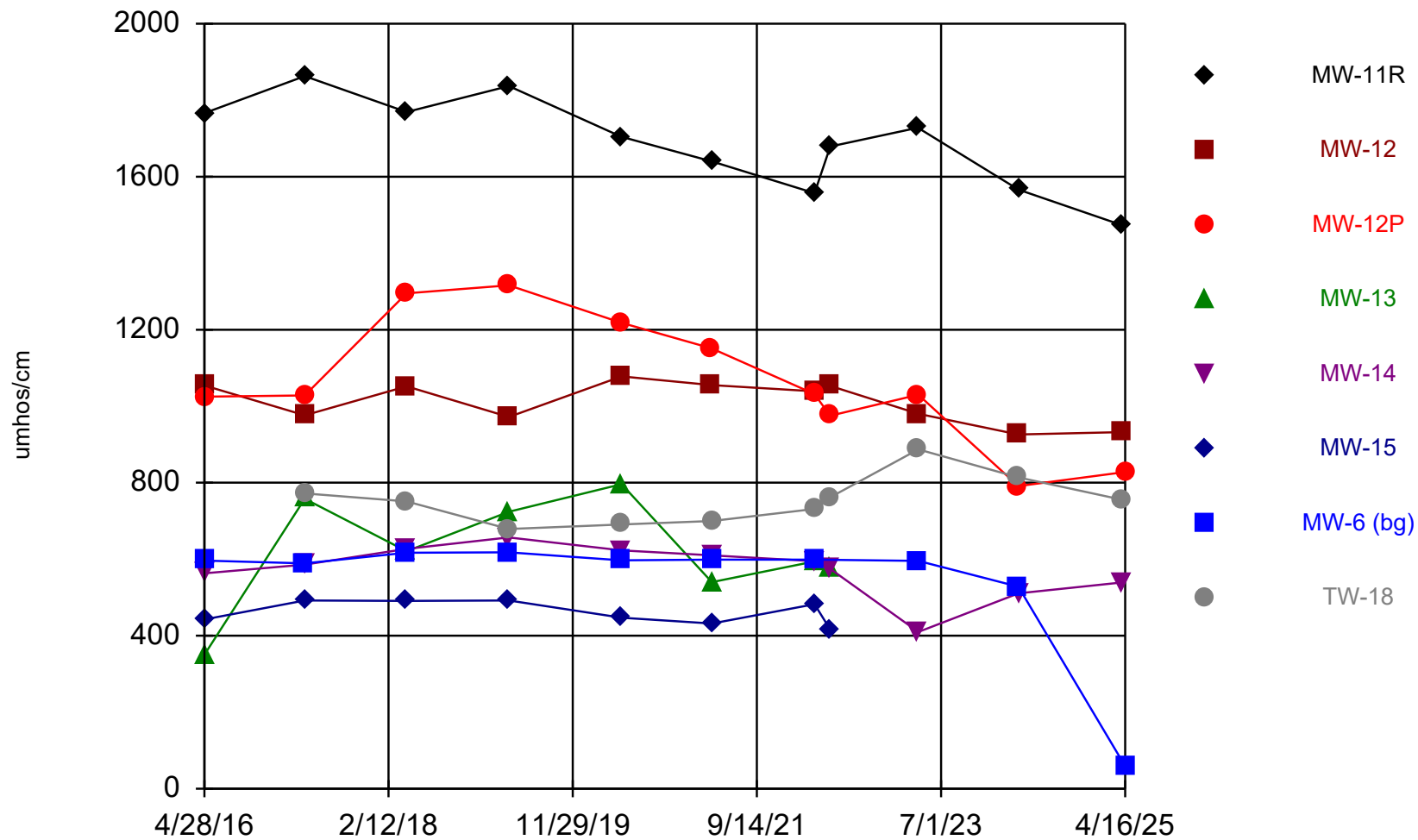
Constituent: Copper Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Copper (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	0.94 (J,Y)	0.97 (J,Y)	0.58 (J,Y)	5.1				
4/29/2016					0.42 (J,Y)	0.96 (J,Y)	0.17 (J,Y)	
4/19/2017							0.21 (J,B)	
4/20/2017	5.8	1.7	2.3	6.6	2.3	0.87 (J,B)		0.84 (J,B)
4/16/2018							0.25 (J,B)	
4/17/2018	3.4	5.7	1.7	3.6	0.51 (J,B)	0.7 (J,B)		2.2
4/15/2019					<2		<2	
4/16/2019	<2	<2	<2	<2		<2		<2
5/20/2020							<3.2	
5/21/2020	<3.2	<3.2	<3.2	<3.2				
5/22/2020					<3.2	<3.2		<3.2
4/6/2021		<1.4	<1.4					
4/7/2021	<1.4			<1.4	<1.4	<1.4	<1.4	<1.4
4/6/2022		1.8 (J)	<1.8 (U)		<1.8 (U)		<1.8 (U)	<1.8 (U)
4/7/2022	<1.8 (U)			<1.8 (U)		<1.8 (U)		
4/10/2023	<1.8 (U)							
4/11/2023		<1.8 (U)	<1.8 (U)		<1.8 (U)		<1.8 (U)	<1.8 (U)
4/1/2024		<1.8 (U)	<1.8 (U)				<1.8 (U)	<1.8 (U)
4/2/2024	2.5 (J)				<1.8 (U)			
4/1/2025								<3.2
4/2/2025	<3.2	<3.2			<3.2			
4/16/2025			<3.2				<3.2	

Time Series



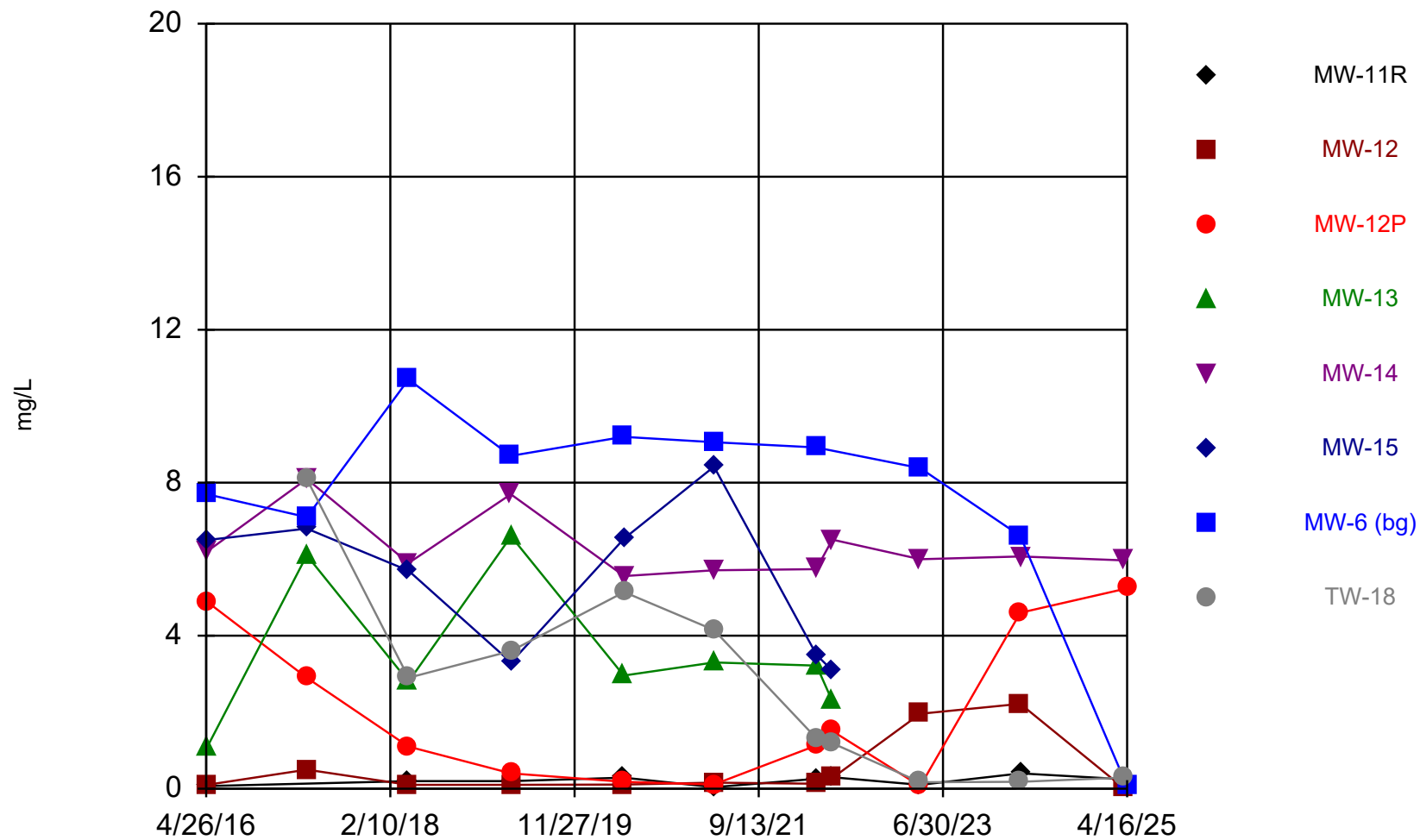
Constituent: Field Conductivity Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Field Conductivity (umhos/cm) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	1766	1054	1025	350.3				
4/29/2016					563.1	442.8	596.2	
4/19/2017							589	
4/20/2017	1863	976	1028	758	586	492		772
4/16/2018							617	
4/17/2018	1769	1052	1295	621	627	491		751
4/15/2019					657		618	
4/16/2019	1837	972	1316	724		492		679
5/20/2020							597	
5/21/2020	1704	1078	1218	796				
5/22/2020					623	447		691
4/6/2021		1055	1151					
4/7/2021	1640			540	610	432	599	700
4/6/2022		1039	1032		594.9		599	731.2
4/7/2022	1557			594		482.2		
6/2/2022	1679	1053	975	575	574.6	416.1		762
4/10/2023	1728							
4/11/2023		980	1030		409.8		595.6	887
4/1/2024		926	791				528.2	814
4/2/2024	1566				510.7			
4/1/2025								756
4/2/2025	1474	932			539			
4/16/2025			828				58.8	

Time Series



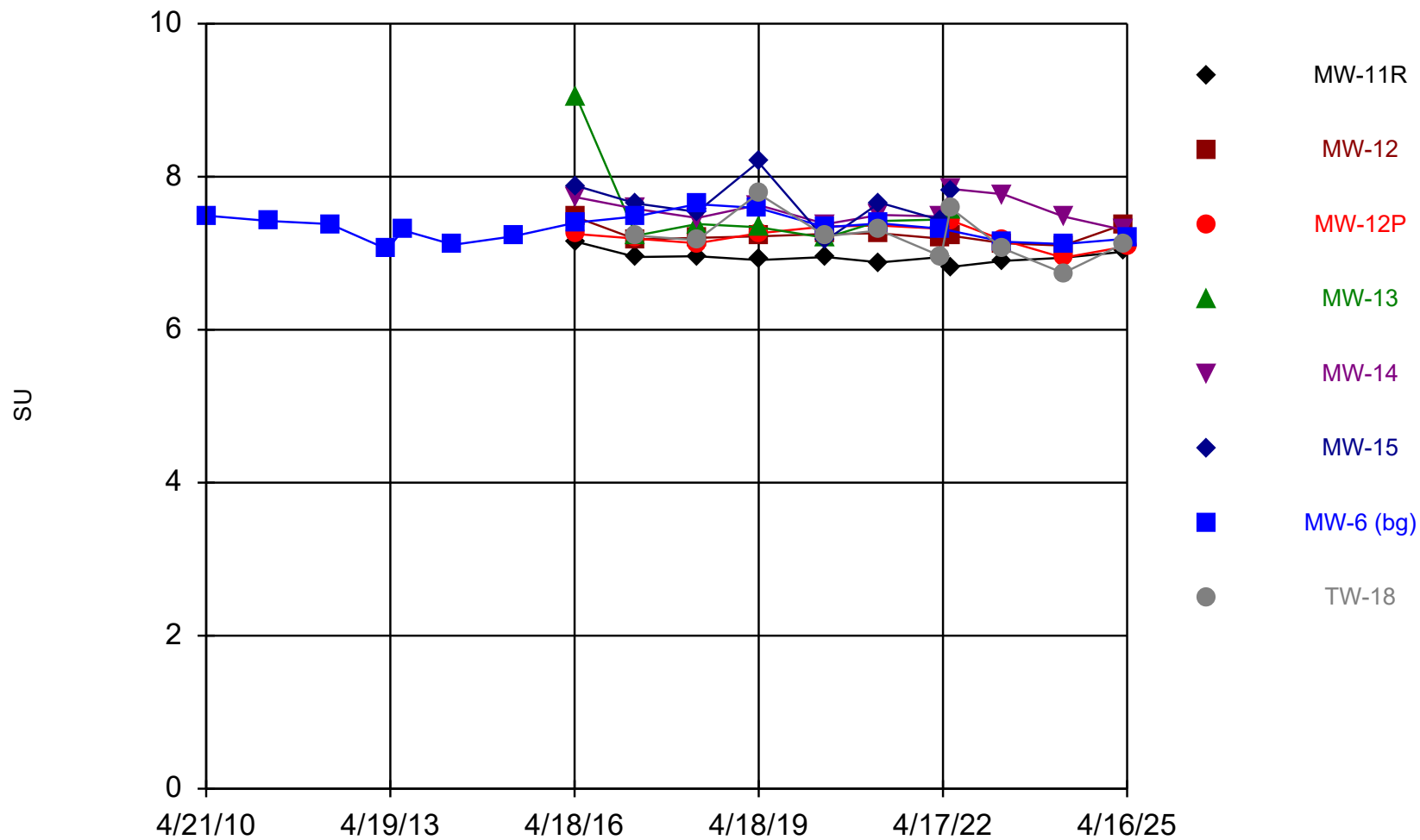
Constituent: Field Dissolved Oxygen Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Field Dissolved Oxygen (mg/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/26/2016	0.07							
4/29/2016		0.1	4.89	1.08	6.2	6.5	7.7	
4/19/2017		0.5	2.9	6.1	8.1	6.8	7.1	8.1
4/16/2018	0.2	0.1	1.1	2.8	5.9	5.7	10.7	2.9
4/15/2019					7.7		8.7	
4/16/2019	0.2	0.1	0.4	6.6		3.3		3.6
5/20/2020							9.2	
5/21/2020	0.29	0.11	0.18	2.96				
5/22/2020					5.56	6.54		5.14
4/6/2021		0.16	0.11					
4/7/2021	0.04			3.3	5.71	8.42	9.06	4.15
4/6/2022		0.13	1.13		5.74		8.92	1.32
4/7/2022	0.26			3.22		3.5		
6/2/2022	0.3	0.28	1.51	2.29	6.51	3.09		1.19
4/10/2023	0.1							
4/11/2023		1.96	0.07		6		8.38	0.17
4/1/2024		2.22	4.6				6.61	0.18
4/2/2024	0.4				6.07			
4/1/2025								0.29
4/2/2025	0.25	0.03			5.97			
4/16/2025			5.24				0.06	

Time Series



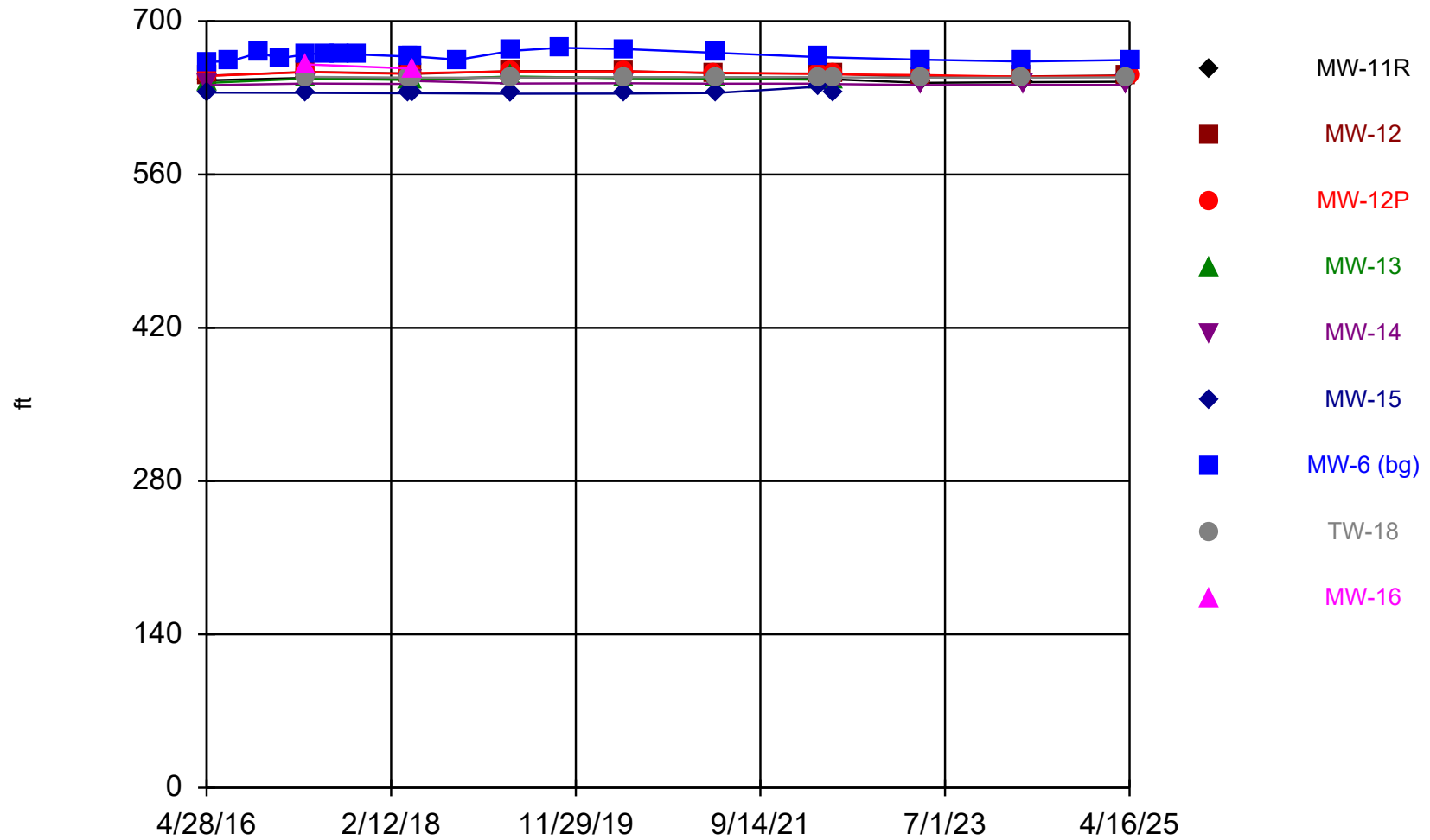
Constituent: Field pH Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Field pH (SU) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/21/2010							7.49	
5/4/2011							7.42	
4/25/2012							7.38	
4/2/2013							7.05	
7/2/2013							7.3	
4/29/2014							7.11	
4/20/2015							7.22	
4/28/2016	7.15	7.47	7.25	9.05				
4/29/2016					7.73	7.88	7.4	
4/19/2017							7.48	
4/20/2017	6.95	7.18	7.19	7.23	7.58	7.65		7.23
4/16/2018							7.64	
4/17/2018	6.96	7.2	7.13	7.38	7.46	7.54		7.17
4/15/2019					7.63		7.59	
4/16/2019	6.91	7.22	7.26	7.34		8.19		7.78
5/20/2020							7.34	
5/21/2020	6.95	7.25	7.35	7.2				
5/22/2020					7.38	7.17		7.22
4/6/2021		7.26	7.36					
4/7/2021	6.88			7.42	7.5	7.66	7.39	7.3
4/6/2022		7.19	7.32		7.48		7.32	6.96
4/7/2022	6.95			7.44		7.43		
6/2/2022	6.82	7.23	7.43	7.57	7.84	7.8		7.59
4/10/2023	6.9							
4/11/2023		7.13	7.17		7.77		7.15	7.06
4/1/2024		7.1	6.94				7.12	6.74
4/2/2024	6.94				7.48			
4/1/2025								7.13
4/2/2025	7.02	7.38			7.3			
4/16/2025			7.09				7.19	

Time Series



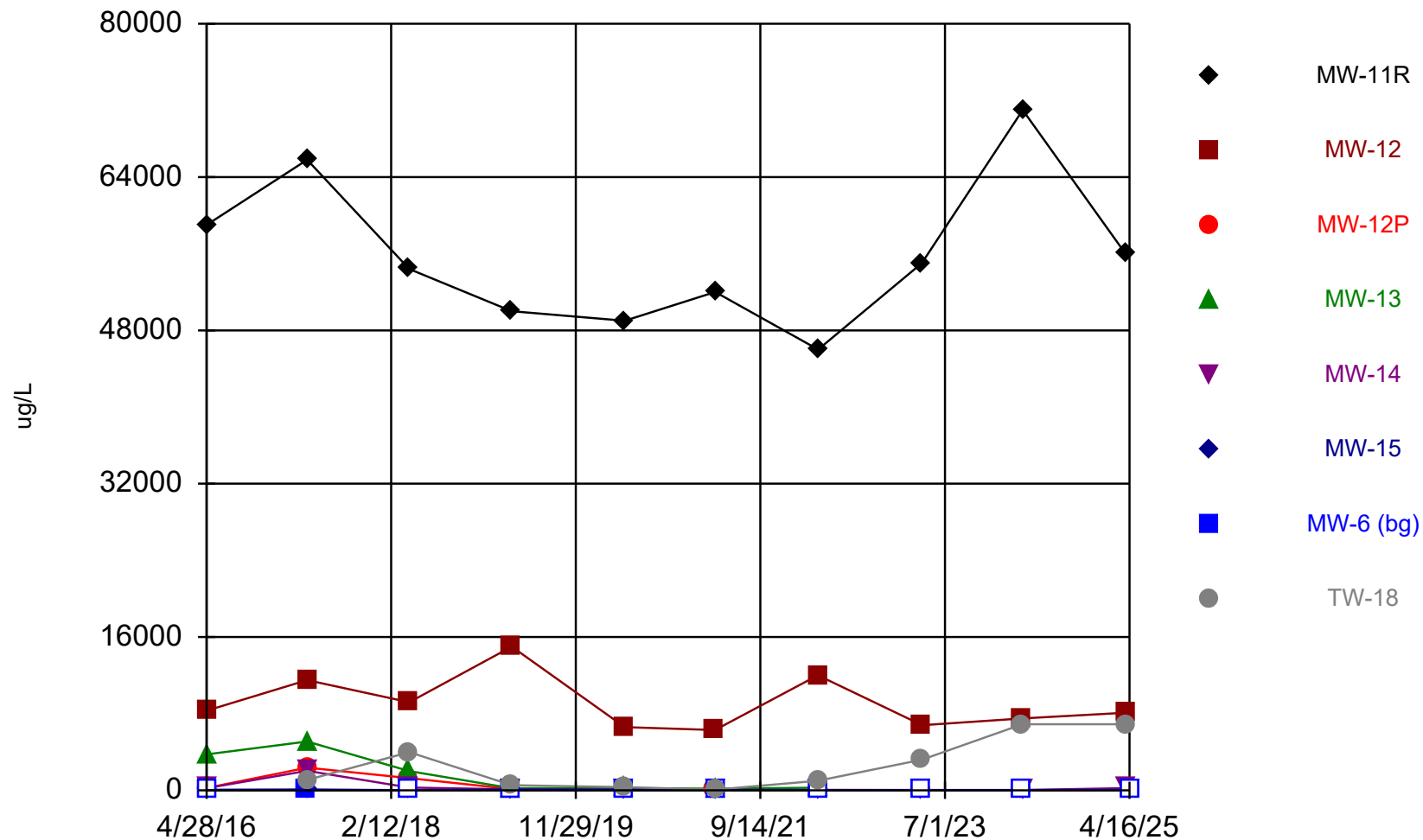
Constituent: Groundwater Elevation Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Groundwater Elevation (ft) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18	MW-16
4/28/2016	645.96	650.05	650	643.56	641.56	634.71	662.8		
7/20/2016							663.21		
10/27/2016							670.82		
1/18/2017							666.28		
4/19/2017	648.24	653.68	653.4	647.61	643.01	634.5	669.82	649.03	660.45
6/19/2017							670.65		
8/15/2017							670.61		
10/16/2017							669.58		
4/16/2018	647.07	652.25	651.9	646.36	642.61	634.07	667.64	648.49	
4/26/2018	647.47	651.75	652.54	646.38	645.46	634.14	667.96	648.35	656.61
10/8/2018							664.71		
4/15/2019	648.69	654.35	653.99	649.45	643.08	633.71	672.78	648.47	
4/16/2019	648.69	654.35	653.99	649.45		633.71		648.47	
10/2/2019							675.54		
5/20/2020							674.47		
5/21/2020	648.17	654.45	654.04	647.94					
5/22/2020					643.23	633.8		648.86	
4/6/2021		652.31	652.92						
4/7/2021	647.97			647.39	642.92	634.38	671.08	648.86	
4/6/2022		652.11	651.71		642.88		667.14	648.91	
4/7/2022	647.31			646.61		640.13			
6/2/2022	646.78	651.73	651.37	645.41	642.58	635.53		648.61	
4/10/2023	643.72								
4/11/2023		649.09	650.75		641.64		664.79	648.5	
4/1/2024		649.51	649.22				663.16	648.33	
4/2/2024	644.34				641.85				
4/1/2025								648.7	
4/2/2025	644.64	650.45			641.77				
4/16/2025			649.73				664.43		

Time Series



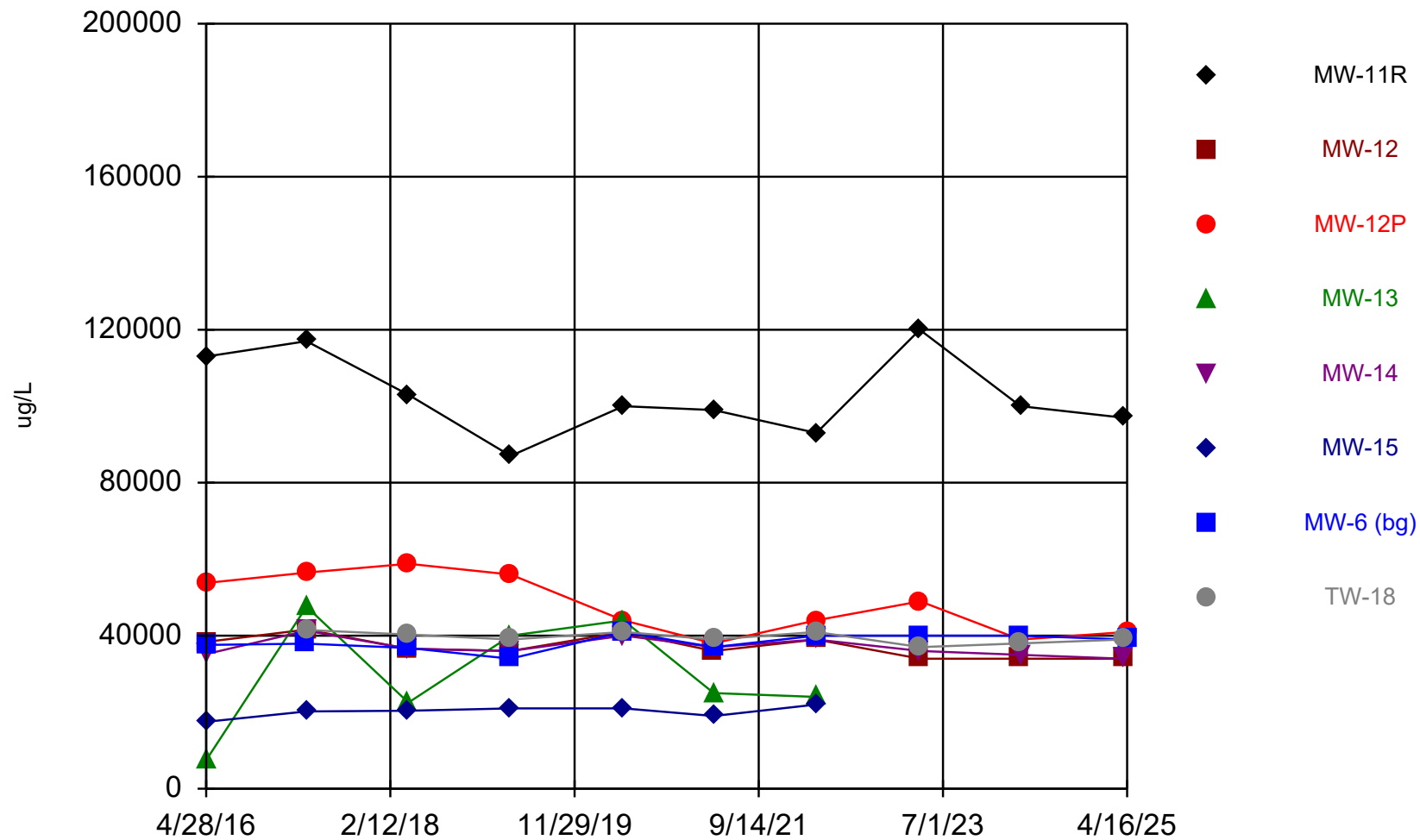
Constituent: Iron Analysis Run 10/14/2025 1:35 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Iron (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	59000	8320	250	3760				
4/29/2016					226	64.8	<12.8	
4/19/2017							27.1 (J,B)	
4/20/2017	65800	11500	2370	5100	2040	94.5 (B)		1090
4/16/2018							<9.6	
4/17/2018	54400	9190	1270	2010	285	13.4 (J)		3980
4/15/2019					110 (B)		<66	
4/16/2019	50000 (B)	15000 (B)	130 (B)	220 (B)		<66		530 (B)
5/20/2020							<50	
5/21/2020	49000	6600	120	240				
5/22/2020					57 (J)	<50		340
4/6/2021		6300	<36					
4/7/2021	52000			180	39 (J)	<36	<36	79 (J)
4/6/2022		12000	39 (J)		<36 (U)		<36 (U)	1000
4/7/2022	46000			280		<36 (U)		
4/10/2023	55000							
4/11/2023		6800	<36 (U)		<36 (U)		<36 (U)	3200
4/1/2024		7500	<36 (U)				<36 (U)	6900
4/2/2024	71000				<36 (U)			
4/1/2025								6900
4/2/2025	56000	8100			230			
4/16/2025			<50				<50	

Time Series



Constituent: Magnesium Analysis Run 10/14/2025 1:36 PM View: Lansing State Data

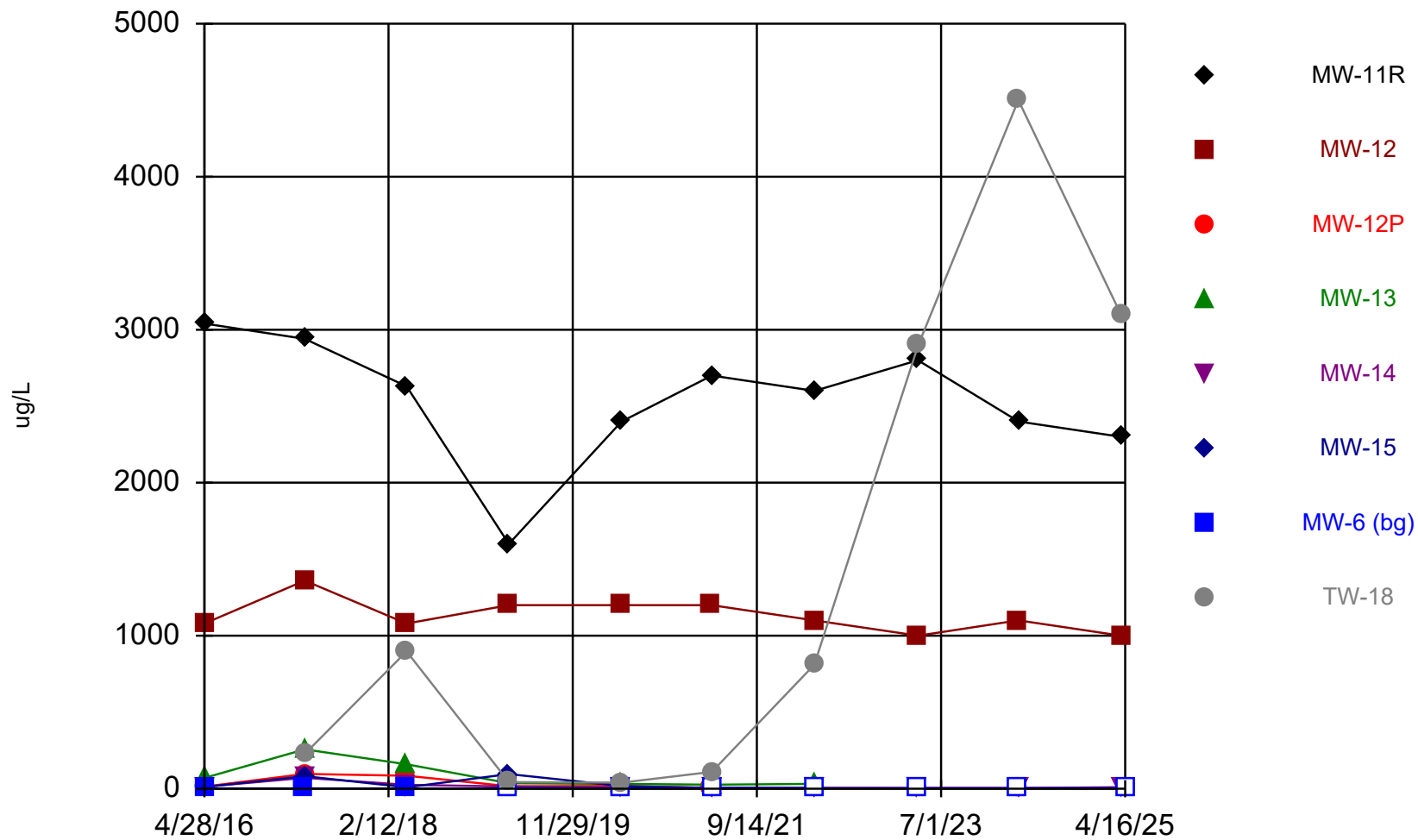
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Magnesium (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	113000	38400	53800	7490				
4/29/2016					35200	17500	37600	
4/19/2017							37900	
4/20/2017	117000	41600	56500	47600	41300	20200		41500
4/16/2018							36800	
4/17/2018	103000 (M1)	36600	58800	22500	36600	20400		40300
4/15/2019					36000		34000	
4/16/2019	87000	36000	56000	40000		21000		39000
5/20/2020							41000	
5/21/2020	100000	41000	44000	44000				
5/22/2020					40000	21000		41000
4/6/2021		36000	38000					
4/7/2021	99000			25000	37000	19000	37000	39000
4/6/2022		39000	44000		39000		40000	41000
4/7/2022	93000			24000		22000		
4/10/2023	120000							
4/11/2023		34000	49000		36000		40000	37000
4/1/2024		34000	39000				40000	38000
4/2/2024	100000				35000			
4/1/2025								39000
4/2/2025	97000	34000			34000			
4/16/2025			41000				39000	

Time Series



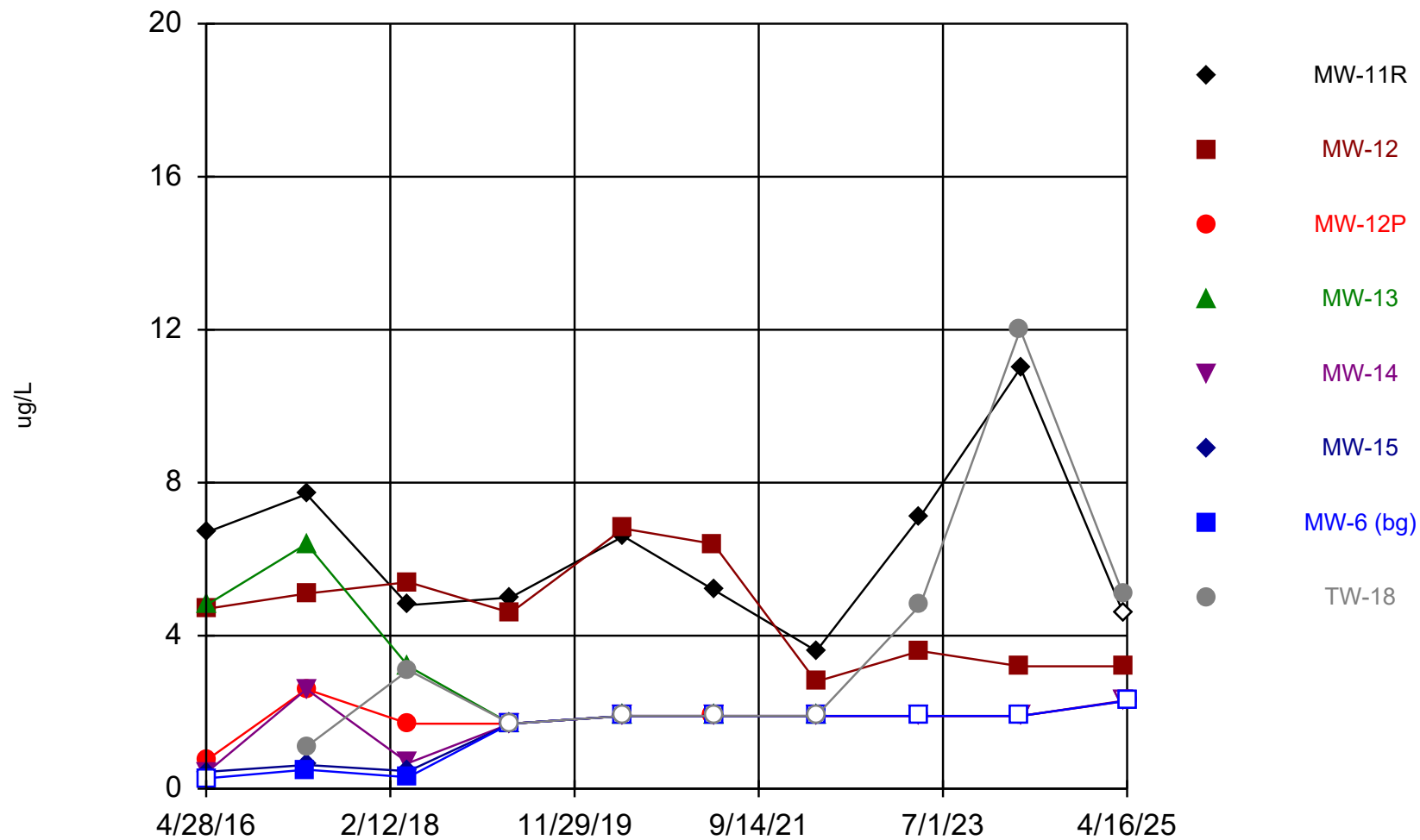
Constituent: Manganese Analysis Run 10/14/2025 1:36 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Manganese (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	3040	1080	13.7	70.4				
4/29/2016					12.6	11.1	1.5 (Y)	
4/19/2017							1.8 (B)	
4/20/2017	2940	1360	96.9	257	71.7	82.1		227
4/16/2018							0.28 (J)	
4/17/2018	2630	1080	84.8	160	25.8	9.1		897
4/15/2019					15		<2.5	
4/16/2019	1600	1200	16	36		96		43
5/20/2020							<4	
5/21/2020	2400	1200	18	32				
5/22/2020					6 (J)	17		40
4/6/2021		1200	6.7 (J)					
4/7/2021	2700			26	<4.4	<4.4	<4.4	110
4/6/2022		1100	4.9 (J)		<3.6 (U)		<3.6 (U)	810
4/7/2022	2600			32		<3.6 (U)		
4/10/2023	2800							
4/11/2023		1000	<3.6 (U)		<3.6 (U)		<3.6 (U)	2900
4/1/2024		1100	<3.6 (U)				<3.6 (U)	4500
4/2/2024	2400				<3.6 (U)			
4/1/2025								3100
4/2/2025	2300	1000			9.7 (J)			
4/16/2025			<3.6				<3.6	

Time Series



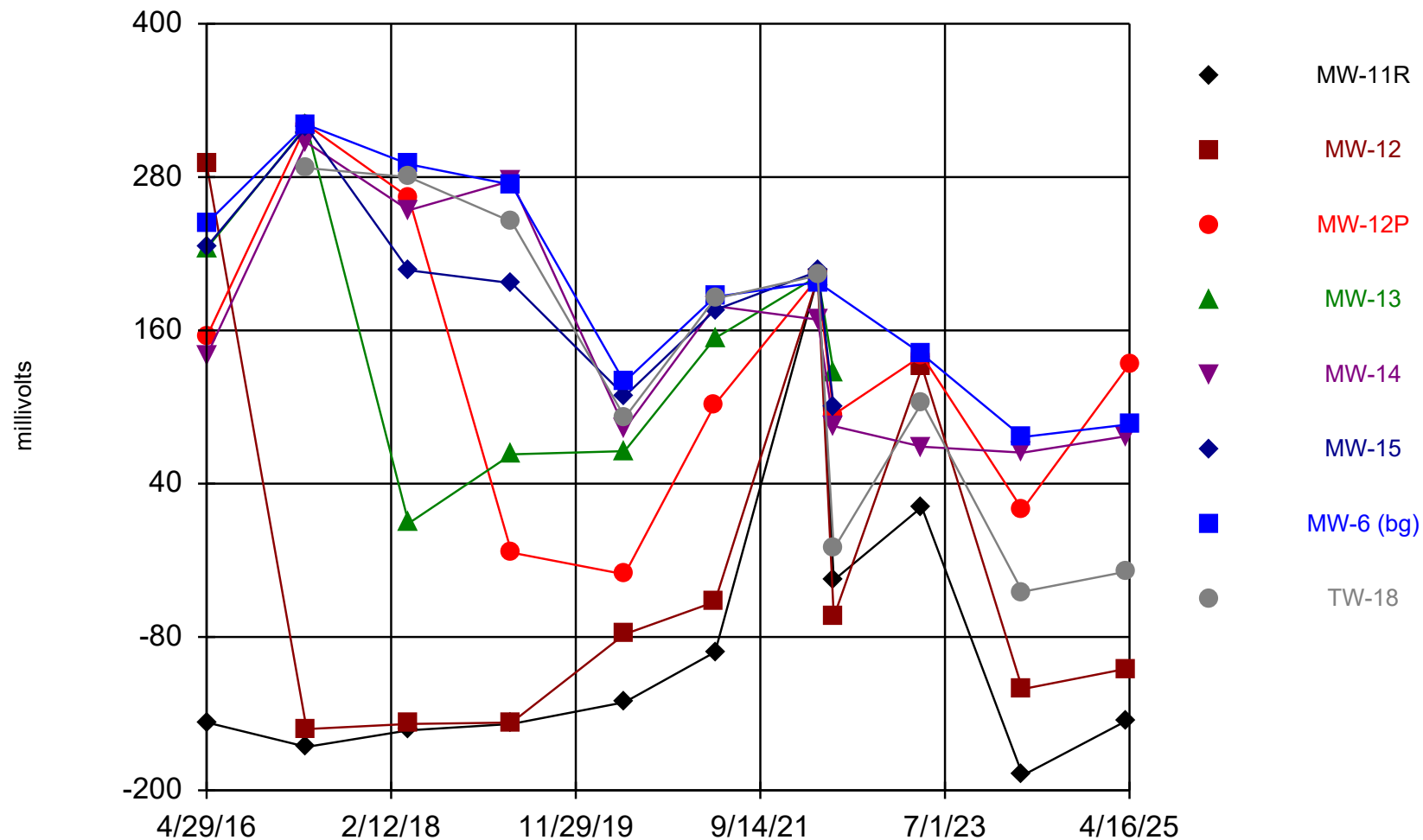
Constituent: Nickel Analysis Run 10/14/2025 1:36 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Nickel (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	6.7	4.7	0.74 (J)	4.8				
4/29/2016					0.42 (J)	0.44 (J)	<0.27	
4/19/2017							0.5 (J,B)	
4/20/2017	7.7	5.1	2.6	6.4	2.6	0.62 (J,B)		1.1 (B)
4/16/2018							0.3 (J)	
4/17/2018	4.8	5.4	1.7	3.2	0.67 (J)	0.46 (J)		3.1
4/15/2019					<1.7		<1.7	
4/16/2019	5	4.6 (J)	<1.7	<1.7		<1.7		<1.7
5/20/2020							<1.9	
5/21/2020	6.6	6.8	<1.9	<1.9				
5/22/2020					<1.9	<1.9		<1.9
4/6/2021		6.4	<1.9					
4/7/2021	5.2			<1.9	<1.9	<1.9	<1.9	<1.9
4/6/2022		2.8 (J)	<1.9 (U)		<1.9 (U)		<1.9 (U)	<1.9 (U)
4/7/2022	3.6 (J)			<1.9 (U)		<1.9 (U)		
4/10/2023	7.1							
4/11/2023		3.6 (J)	<1.9 (U)		<1.9 (U)		<1.9 (U)	4.8 (J)
4/1/2024		3.2 (J)	<1.9 (U)				<1.9 (U)	12
4/2/2024	11				<1.9 (U)			
4/1/2025								5.1
4/2/2025	<9.2	3.2 (J)			<2.3			
4/16/2025			<2.3				<2.3	

Time Series



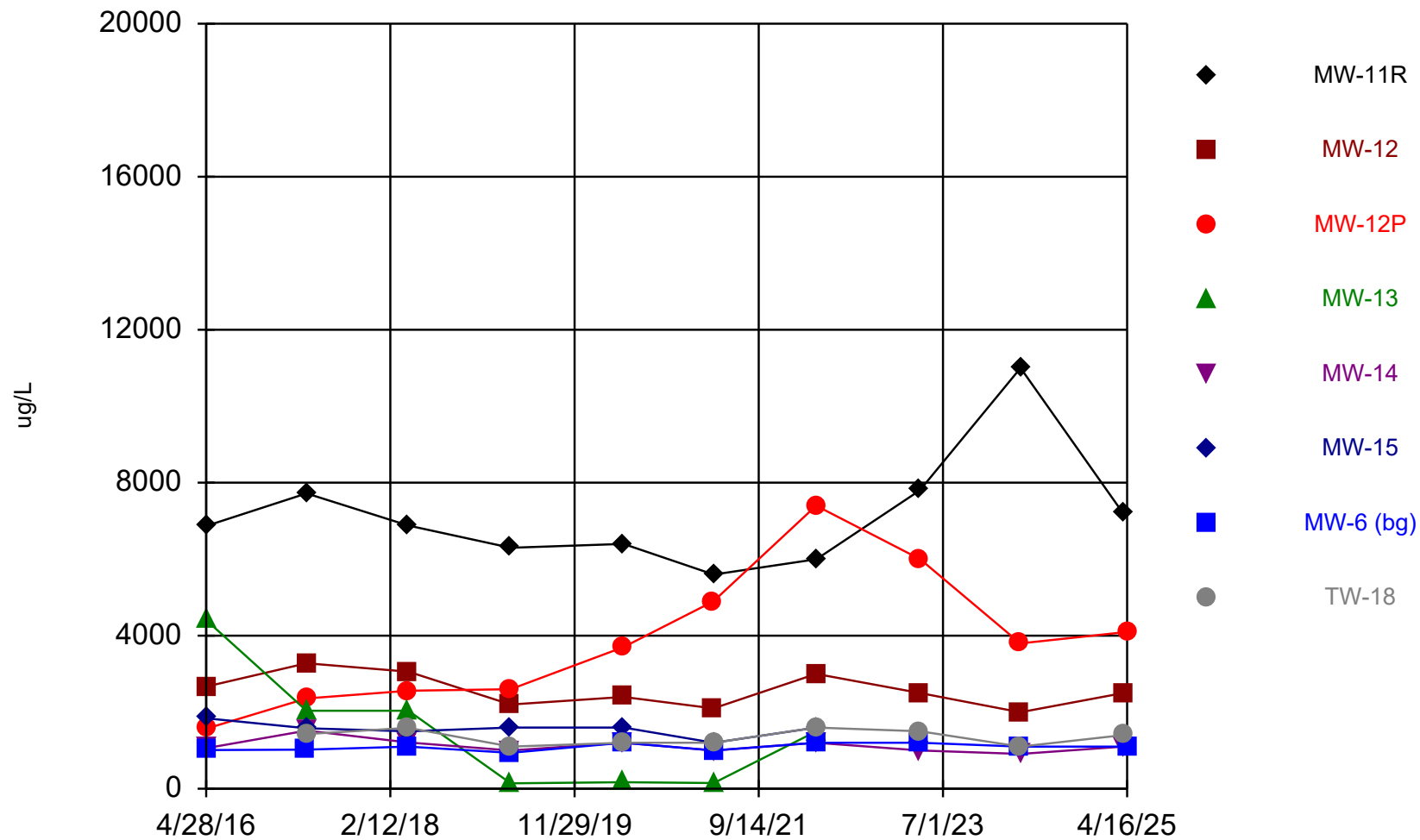
Constituent: Oxidation Reduction Potential Analysis Run 10/14/2025 1:36 PM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Oxidation Reduction Potential (millivolts) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/29/2016	-146.9	290.1	154.9	224	140	225.4	243.7	
4/19/2017	-166	-152	321	320	307	319	321	287
4/16/2018	-153	-148	264	9	254	207	290	280
4/15/2019					277		274	
4/16/2019	-148	-147	-14	63		197		245
5/20/2020							119.6	
5/21/2020	-131	-77.8	-30.9	65.5				
5/22/2020					83.1	108.7		91.9
4/6/2021		-52.5	101.9					
4/7/2021	-91.8			153.9	179	176	186.2	184.8
4/6/2022		200.9	201.2		168.4		197.7	202.9
4/7/2022	202.1			202.6		206.2		
6/2/2022	-35.5	-64.3	94	126.4	85.1	99.2		-11.1
4/10/2023	21.6							
4/11/2023		131.4	140.3		68.9		141.4	103.6
4/1/2024		-120.8	19.7				76.5	-44.6
4/2/2024	-188.3				64.3			
4/1/2025								-29
4/2/2025	-146	-105			77			
4/16/2025			133.5				86.5	

Time Series



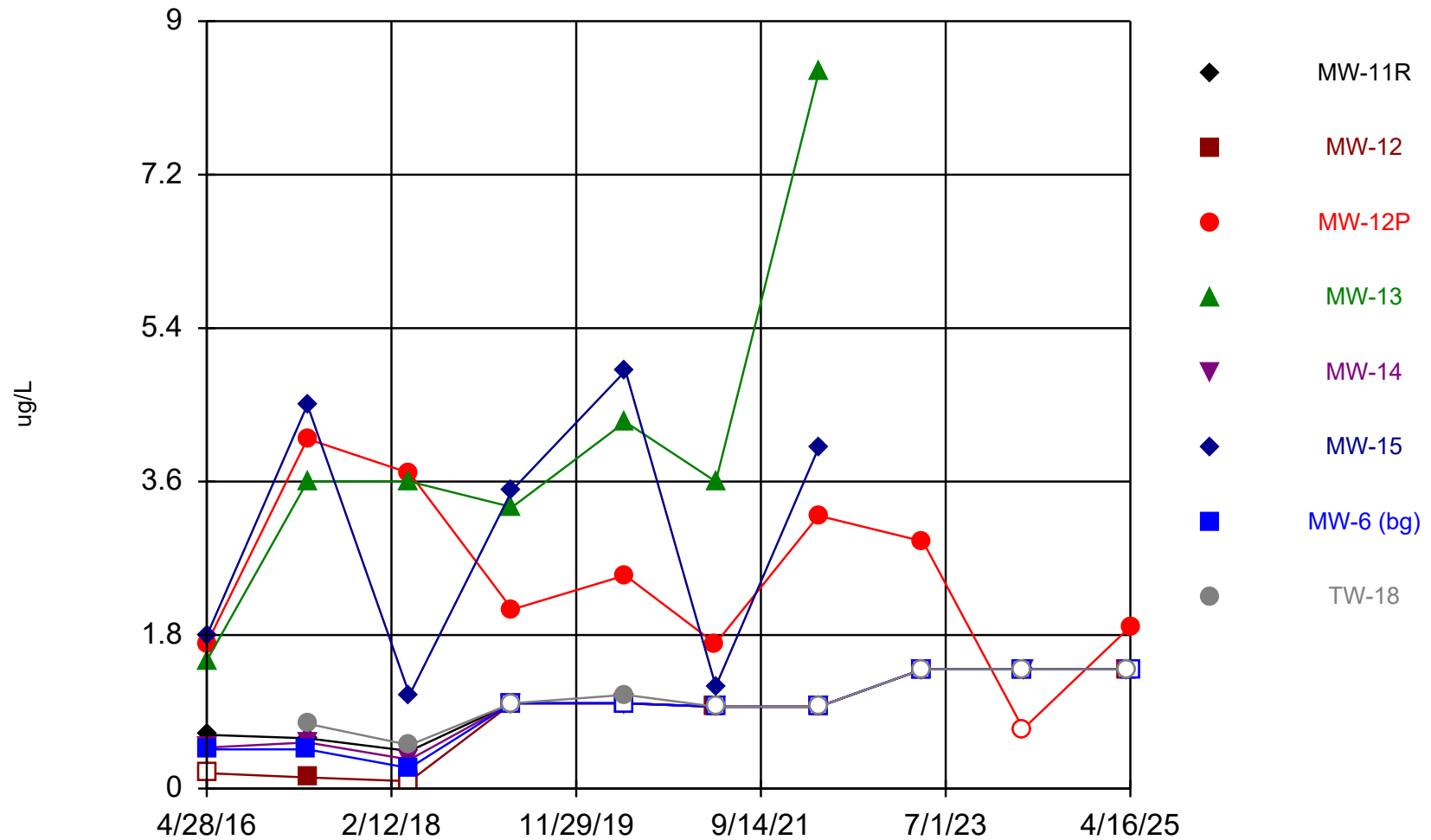
Constituent: Potassium Analysis Run 10/14/2025 1:36 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Potassium (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	6870	2670	1570	4410				
4/29/2016					1060	1840	1010	
4/19/2017							1020	
4/20/2017	7720	3280	2360	2040	1520	1580		1430
4/16/2018							1100	
4/17/2018	6880	3060	2560	2040	1210	1500		1590
4/15/2019					1000		940	
4/16/2019	6300	2200	2600	140 (J)		1600		1100
5/20/2020							1200	
5/21/2020	6400	2400	3700	170 (J)				
5/22/2020					1200	1600		1200
4/6/2021		2100	4900					
4/7/2021	5600			150 (J)	1000	1200	1000	1200
4/6/2022		3000	7400		1200		1200	1600
4/7/2022	6000			1500		1600		
4/10/2023	7800							
4/11/2023		2500	6000		1000		1200	1500
4/1/2024		2000	3800				1100	1100
4/2/2024	11000				910			
4/1/2025								1400
4/2/2025	7200	2500			1100			
4/16/2025			4100				1100	

Time Series



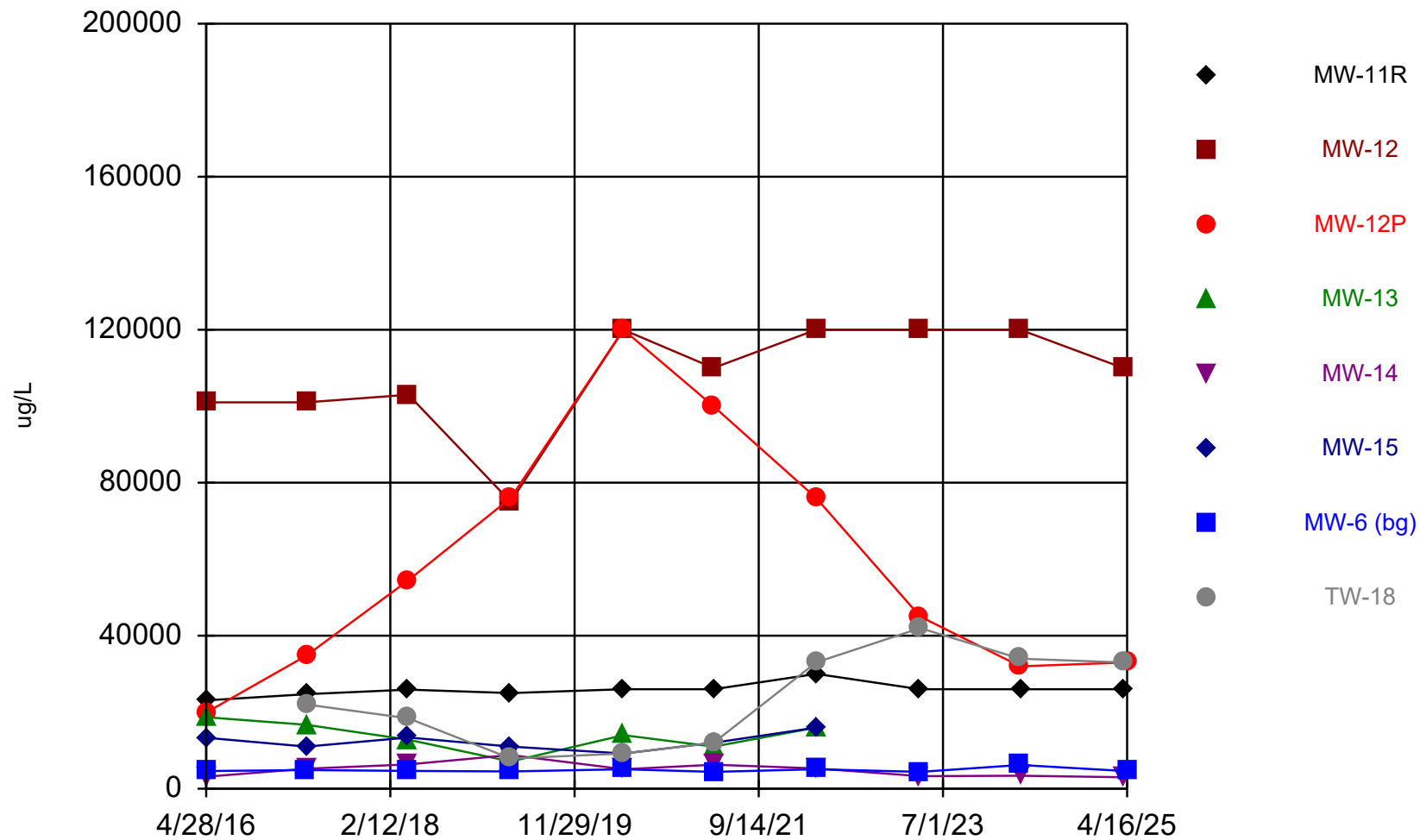
Constituent: Selenium Analysis Run 10/14/2025 1:36 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Selenium (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	0.63 (J)	<0.18	1.7	1.5				
4/29/2016					0.48 (J)	1.8	0.46 (J)	
4/19/2017							0.46 (J)	
4/20/2017	0.59 (J)	0.13 (J)	4.1	3.6	0.54 (J)	4.5		0.76 (J)
4/16/2018							0.24 (J)	
4/17/2018	0.44 (J)	<0.086	3.7	3.6	0.34 (J)	1.1		0.51 (J)
4/15/2019					<1		<1	
4/16/2019	<1	<1	2.1 (J)	3.3 (J)		3.5 (J)		<1
5/20/2020							<1	
5/21/2020	<1	<1	2.5 (J)	4.3 (J)				
5/22/2020					<1	4.9 (J)		1.1 (J)
4/6/2021		<0.96	1.7 (J)					
4/7/2021	<0.96			3.6 (J,B)	<0.96	1.2 (J,B)	<0.96	<0.96
4/6/2022		<0.96 (U)	3.2 (J)		<0.96 (U)		<0.96 (U)	<0.96 (U)
4/7/2022	<0.96 (U)			8.4		4 (J)		
4/10/2023	1.4 (J)							
4/11/2023		<1.4 (U)	2.9 (J)		<1.4 (U)		<1.4 (U)	<1.4 (U)
4/1/2024		<1.4 (U)	<1.4 (U)				<1.4 (U)	<1.4 (U)
4/2/2024	<1.4 (U)				<1.4 (U)			
4/1/2025								<1.4
4/2/2025	<1.4	<1.4			<1.4			
4/16/2025			1.9 (J)				<1.4	

Time Series



Constituent: Sodium Analysis Run 10/14/2025 1:36 PM View: Lansing State Data

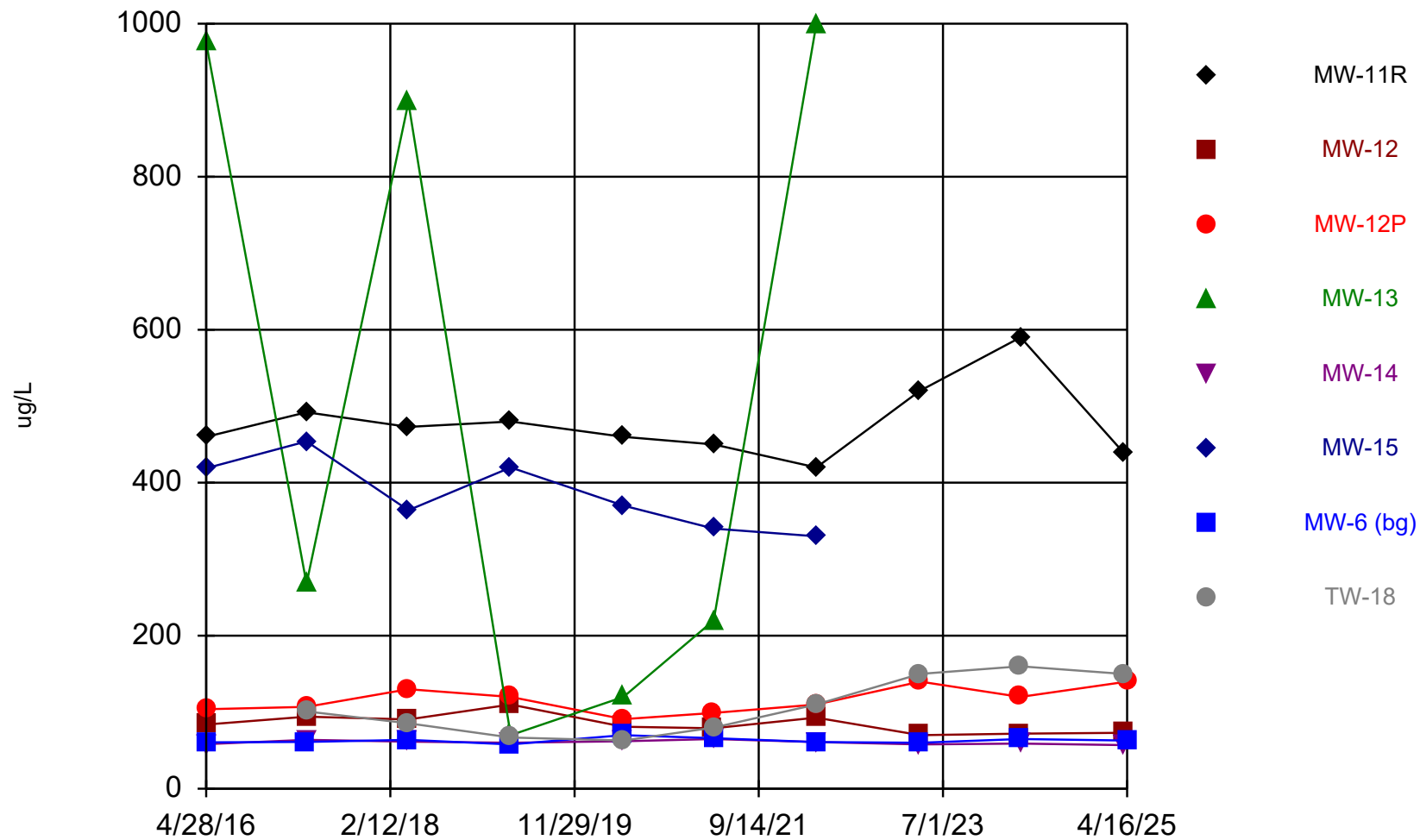
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Sodium (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	23100	101000	19900	18700				
4/29/2016					3140	13300	4610	
4/19/2017							4870	
4/20/2017	24700	101000	34800	16700	5220	11000		22000
4/16/2018							4650	
4/17/2018	25900	103000	54500	12800	6340	13400		18400
4/15/2019					8800		4500	
4/16/2019	25000	75000	76000	7100		11000		7900
5/20/2020							5100	
5/21/2020	26000	120000	120000	14000				
5/22/2020					5100	9200		9200
4/6/2021		110000	100000					
4/7/2021	26000			11000	6300	12000	4400	12000
4/6/2022		120000	76000		5300		5100	33000
4/7/2022	30000			16000		16000		
4/10/2023	26000							
4/11/2023		120000	45000		3300		4400	42000
4/1/2024		120000	32000				6200	34000
4/2/2024	26000				3400			
4/1/2025								33000
4/2/2025	26000	110000			3000			
4/16/2025			33000				4600	

Time Series



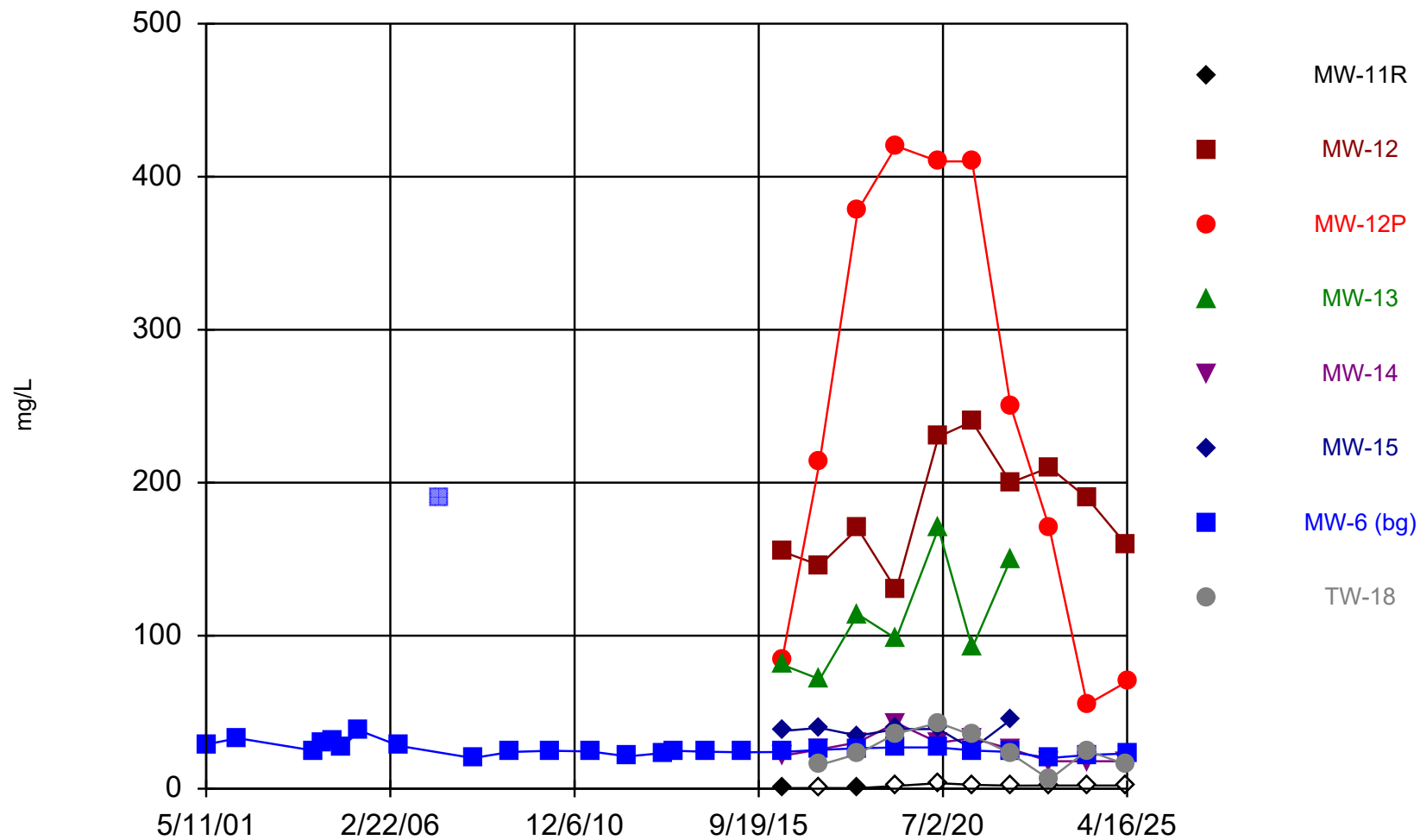
Constituent: Strontium Analysis Run 10/14/2025 1:36 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Strontium (ug/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	460 (Y)	83.9	104 (Y)	975 (Y)				
4/29/2016					58.3 (Y)	419 (Y)	60.7 (Y)	
4/19/2017							61.2 (N2)	
4/20/2017	492 (N2)	94.2 (N2)	107 (N2)	268 (N2)	63.8 (N2)	454 (N2)		101 (N2)
4/16/2018							63.8 (N2)	
4/17/2018	473 (N2)	90.6 (N2)	130 (N2)	897 (N2)	61.6 (N2)	364 (N2)		85.6 (N2)
4/15/2019					60		58	
4/16/2019	480	110	120	70		420		67
5/20/2020							70	
5/21/2020	460	81	91	120				
5/22/2020					62	370		63
4/6/2021		79	99					
4/7/2021	450			220	65	340	66	80
4/6/2022		93	110		61		61	110
4/7/2022	420			1000		330		
4/10/2023	520							
4/11/2023		70	140		58		60	150
4/1/2024		72	120				65	160
4/2/2024	590				59			
4/1/2025								150
4/2/2025	440	73			57			
4/16/2025			140				63	

Time Series



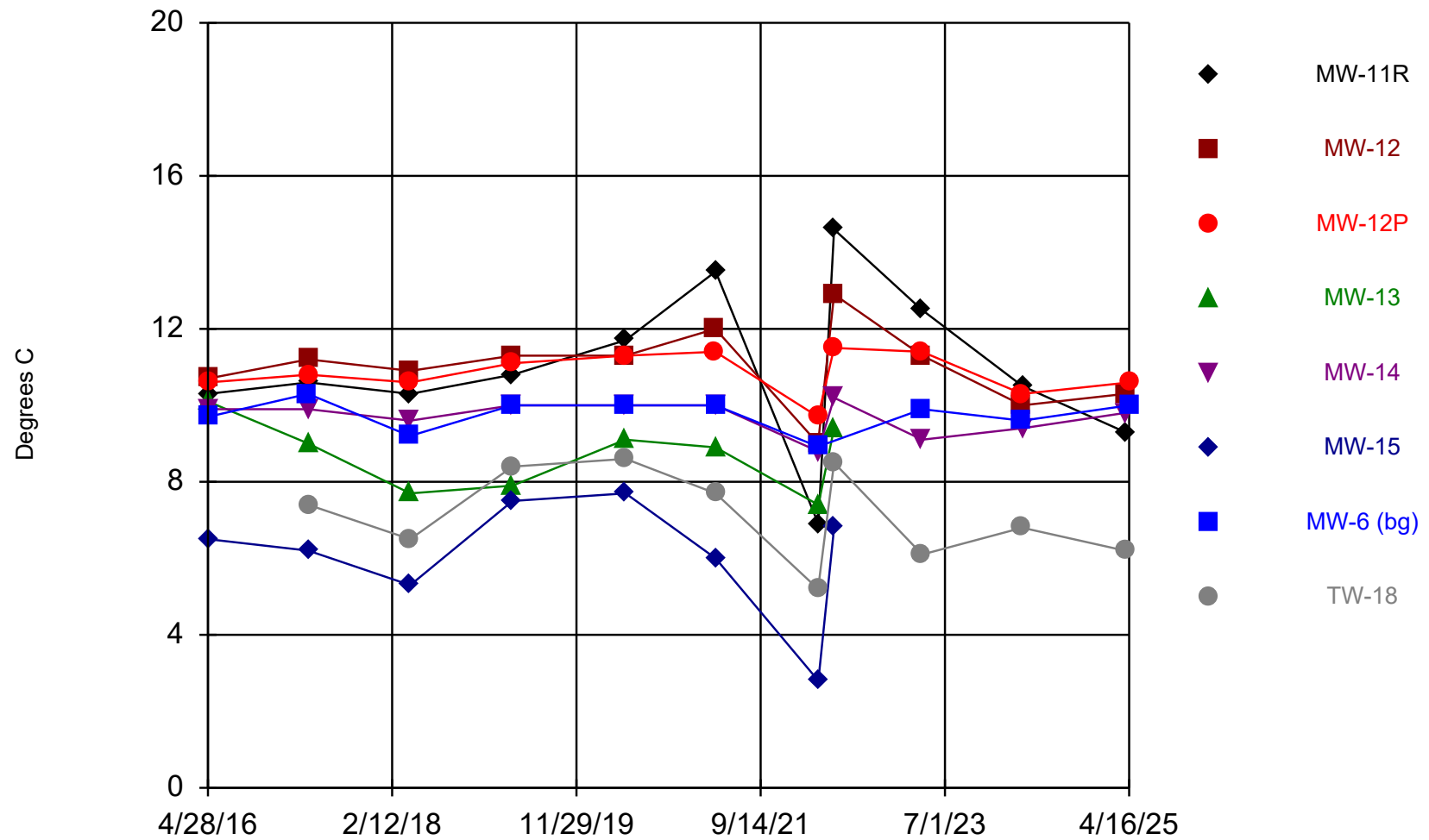
Constituent: Sulfate Analysis Run 10/14/2025 1:36 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Sulfate (mg/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
 Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
5/11/2001							29	
3/8/2002							33	
2/19/2004							25	
5/26/2004							30	
8/23/2004							31	
11/18/2004							27	
5/5/2005							38	
5/19/2006							28 (J)	
5/30/2007							190 (X)	
4/16/2008							20	
4/3/2009							24	
4/21/2010							24.8	
5/4/2011							24.4	
4/25/2012							21.1	
4/2/2013							23.4	
7/2/2013							24.8	
4/29/2014							24.2	
4/20/2015							23.8	
4/28/2016	0.38 (J,Y)	155	84.1	81.1				
4/29/2016					21.5	37.7	24	
4/19/2017							25.4	
4/20/2017	<0.5	146	214	71.5	25.7	39.8		15.5
4/16/2018							26.4	
4/17/2018	0.39 (J)	170	378	114	30.3	34.6		22.7
4/15/2019					43		27	
4/16/2019	<1.8	130	420	98		39		36
5/20/2020							27	
5/21/2020	<3.6	230	410	170				
5/22/2020					30	39		43
4/6/2021		240	410					
4/7/2021	<2.5			92	33	26	25	35
4/6/2022		200	250		26		24	23
4/7/2022	<2 (U)			150		45		
4/10/2023	<2.1 (U)							
4/11/2023		210	170		18		20	6.1
4/1/2024		190	55				22	25
4/2/2024	<2.1 (U)				18			
4/1/2025								16
4/2/2025	<2.1	160			18			
4/16/2025			70				23	

Time Series



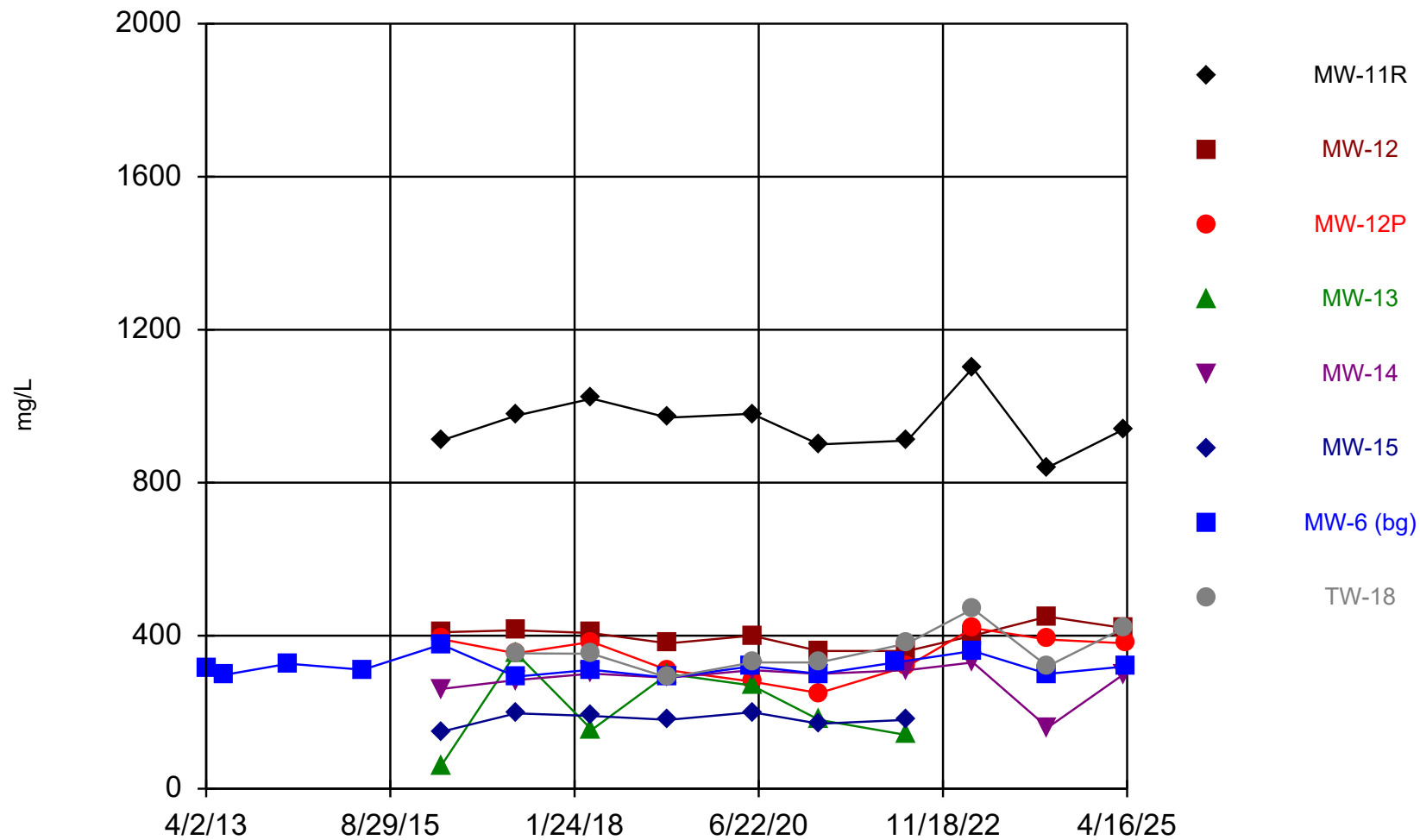
Constituent: Temperature, Field Analysis Run 10/14/2025 1:37 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Temperature, Field (Degrees C) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/28/2016	10.3	10.7	10.6	10.1				
4/29/2016					9.9	6.5	9.7	
4/19/2017							10.3	
4/20/2017	10.6	11.2	10.8	9	9.9	6.2		7.4
4/16/2018							9.2	
4/17/2018	10.3	10.9	10.6	7.7	9.6	5.3		6.5
4/15/2019					10		10	
4/16/2019	10.8	11.3	11.1	7.9		7.5		8.4
5/20/2020							10	
5/21/2020	11.7	11.3	11.3	9.1				
5/22/2020					10	7.7		8.6
4/6/2021		12	11.4					
4/7/2021	13.5			8.9	10	6	10	7.7
4/6/2022		9	9.7		8.8		8.92	5.2
4/7/2022	6.9			7.4		2.8		
6/2/2022	14.6	12.9	11.5	9.4	10.2	6.8		8.5
4/10/2023	12.5							
4/11/2023		11.3	11.4		9.1		9.9	6.1
4/1/2024		10	10.3				9.6	6.8
4/2/2024	10.5				9.4			
4/1/2025								6.2
4/2/2025	9.3	10.3			9.8			
4/16/2025			10.6				10	

Time Series



Constituent: Total Alkalinity Analysis Run 10/14/2025 1:37 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Time Series

Constituent: Total Alkalinity (mg/L) Analysis Run 10/14/2025 1:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-11R	MW-12	MW-12P	MW-13	MW-14	MW-15	MW-6 (bg)	TW-18
4/2/2013							314	
7/2/2013							298	
4/29/2014							327	
4/20/2015							311	
4/28/2016	910	409	391	60.2				
4/29/2016					261	149	377	
4/19/2017							293	
4/20/2017	975	414	354	355	284	197		354
4/16/2018							311	
4/17/2018	1020	407	384	154	301	190		353
4/15/2019					290		290	
4/16/2019	970	380	310	300		180		290
5/20/2020							320	
5/21/2020	980	400	280	270				
5/22/2020					310	200		330
4/6/2021		360	250					
4/7/2021	900			180	300	170	300	330
4/6/2022							330	
6/2/2022	910	360	320	140	310	180		380
4/10/2023	1100							
4/11/2023		400	420		330		360	470
4/1/2024		450	390				300	320
4/2/2024	840				160			
4/1/2025								420
4/2/2025	940	420			300			
4/16/2025			380				320	



Appendix E

Trend Analysis

Trend Test

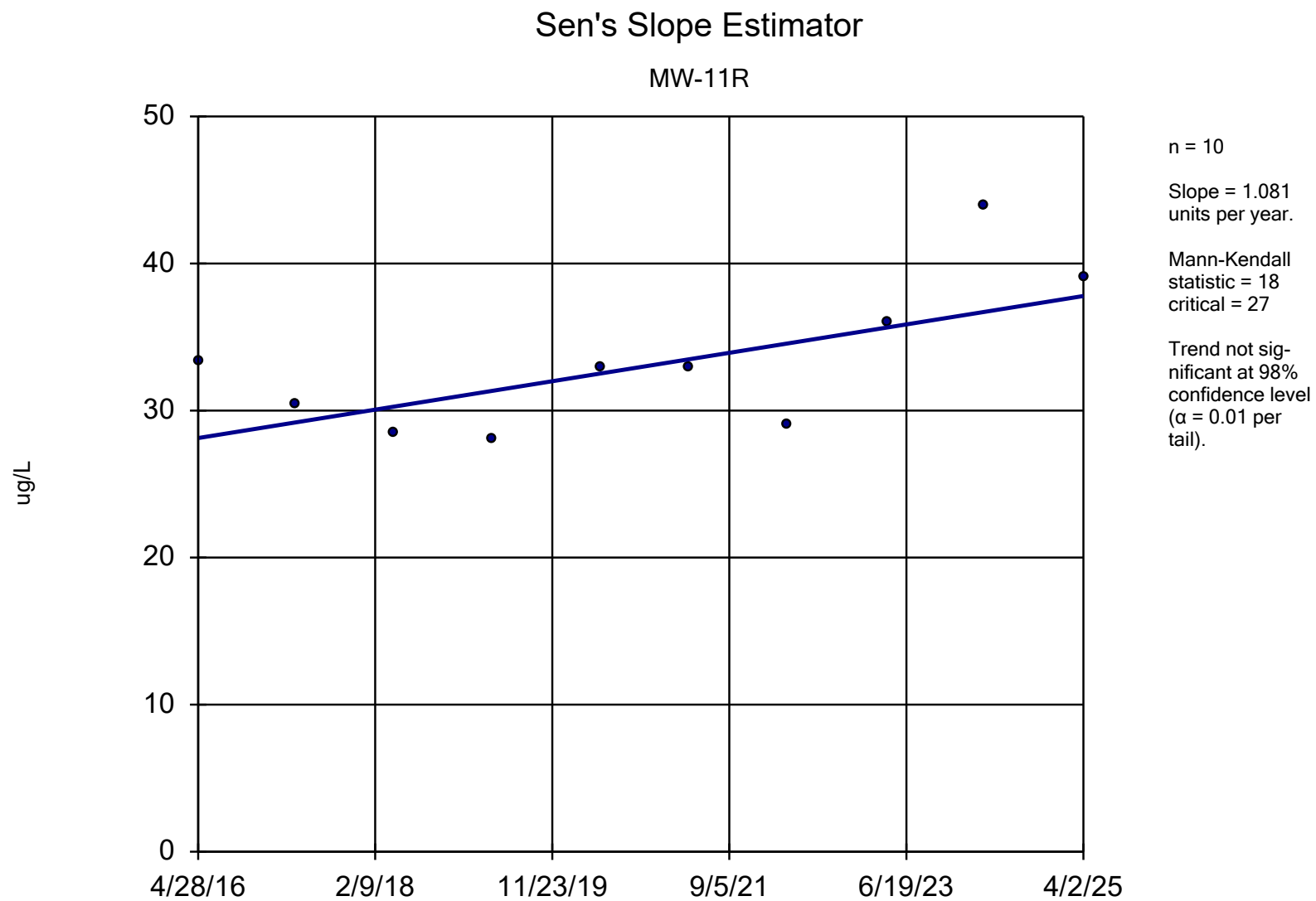
Lansing Generating Station

Client: SCS Engineers

Data: LansingState

Printed 9/10/2025, 12:42 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (ug/L)	MW-11R	1.081	18	27	No	10	0	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-12	0.3017	16	27	No	10	0	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-12P	0	-4	-27	No	10	70	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-13	-0.151	-16	-17	No	7	57.14	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-14	0	2	27	No	10	70	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-15	0.07284	10	17	No	7	57.14	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-6 (bg)	0.01028	7	27	No	10	70	n/a	n/a	0.02	NP
Arsenic (ug/L)	TW-18	0.03818	9	23	No	9	44.44	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-11R	0.05055	7	27	No	10	0	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-12	-0.1174	-28	-27	Yes	10	0	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-12P	-0.07619	-25	-27	No	10	50	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-13	-0.3053	-13	-17	No	7	0	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-14	-0.03689	-20	-27	No	10	50	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-15	-0.00...	-4	-17	No	7	57.14	n/a	n/a	0.02	NP
Cobalt (ug/L)	MW-6 (bg)	0.01108	10	27	No	10	80	n/a	n/a	0.02	NP
Cobalt (ug/L)	TW-18	0.3999	14	23	No	9	11.11	n/a	n/a	0.02	NP
Manganese (ug/L)	MW-11R	-68.75	-18	-27	No	10	0	n/a	n/a	0.02	NP
Manganese (ug/L)	MW-12	-20.14	-15	-27	No	10	0	n/a	n/a	0.02	NP
Manganese (ug/L)	MW-12P	-2.935	-32	-27	Yes	10	30	n/a	n/a	0.02	NP
Manganese (ug/L)	MW-13	-9.445	-14	-17	No	7	0	n/a	n/a	0.02	NP
Manganese (ug/L)	MW-14	-1.623	-26	-27	No	10	40	n/a	n/a	0.02	NP
Manganese (ug/L)	MW-15	-1.384	-9	-17	No	7	28.57	n/a	n/a	0.02	NP
Manganese (ug/L)	MW-6 (bg)	0.2756	19	27	No	10	70	n/a	n/a	0.02	NP
Manganese (ug/L)	TW-18	429	18	23	No	9	0	n/a	n/a	0.02	NP



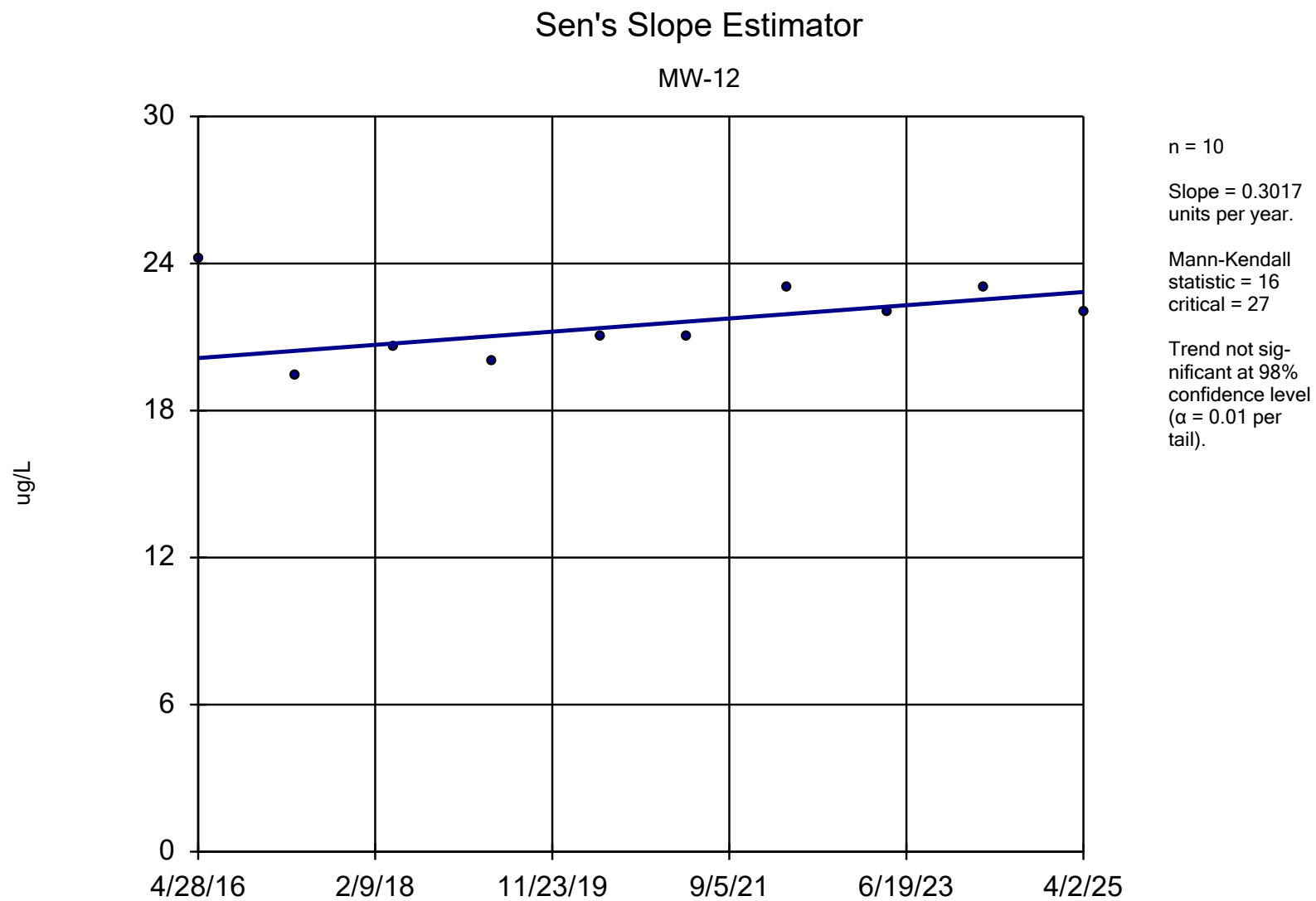
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Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Arsenic (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-11R

4/28/2016	33.4
4/20/2017	30.4
4/17/2018	28.5
4/16/2019	28
5/21/2020	33
4/7/2021	33
4/7/2022	29
4/10/2023	36
4/2/2024	44
4/2/2025	39



Constituent: Arsenic Analysis Run 9/10/2025 12:38 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

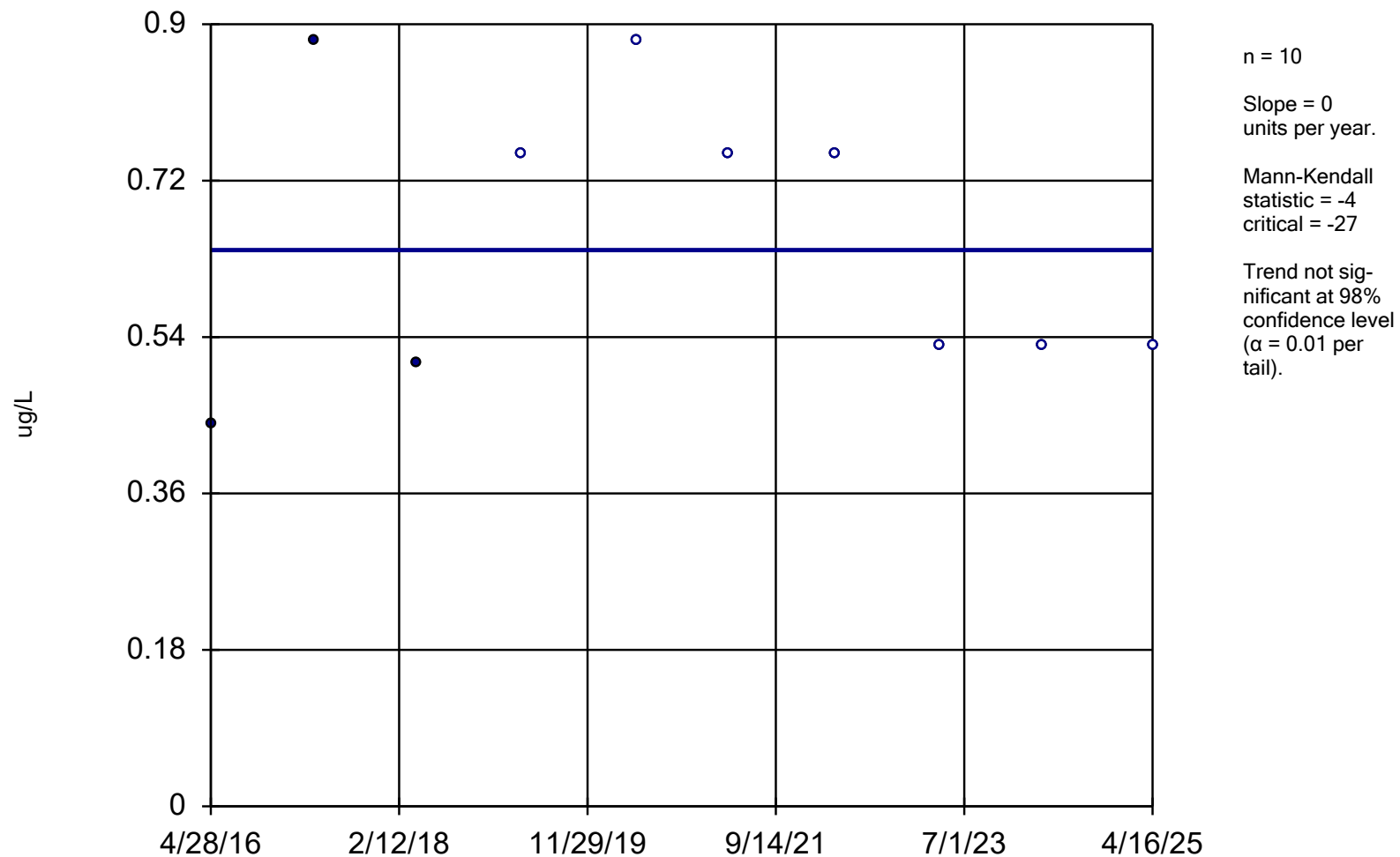
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Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-12

4/28/2016	24.2
4/20/2017	19.4
4/17/2018	20.6
4/16/2019	20
5/21/2020	21
4/6/2021	21
4/6/2022	23
4/11/2023	22
4/1/2024	23
4/2/2025	22

Sen's Slope Estimator

MW-12P



Constituent: Arsenic Analysis Run 9/10/2025 12:39 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

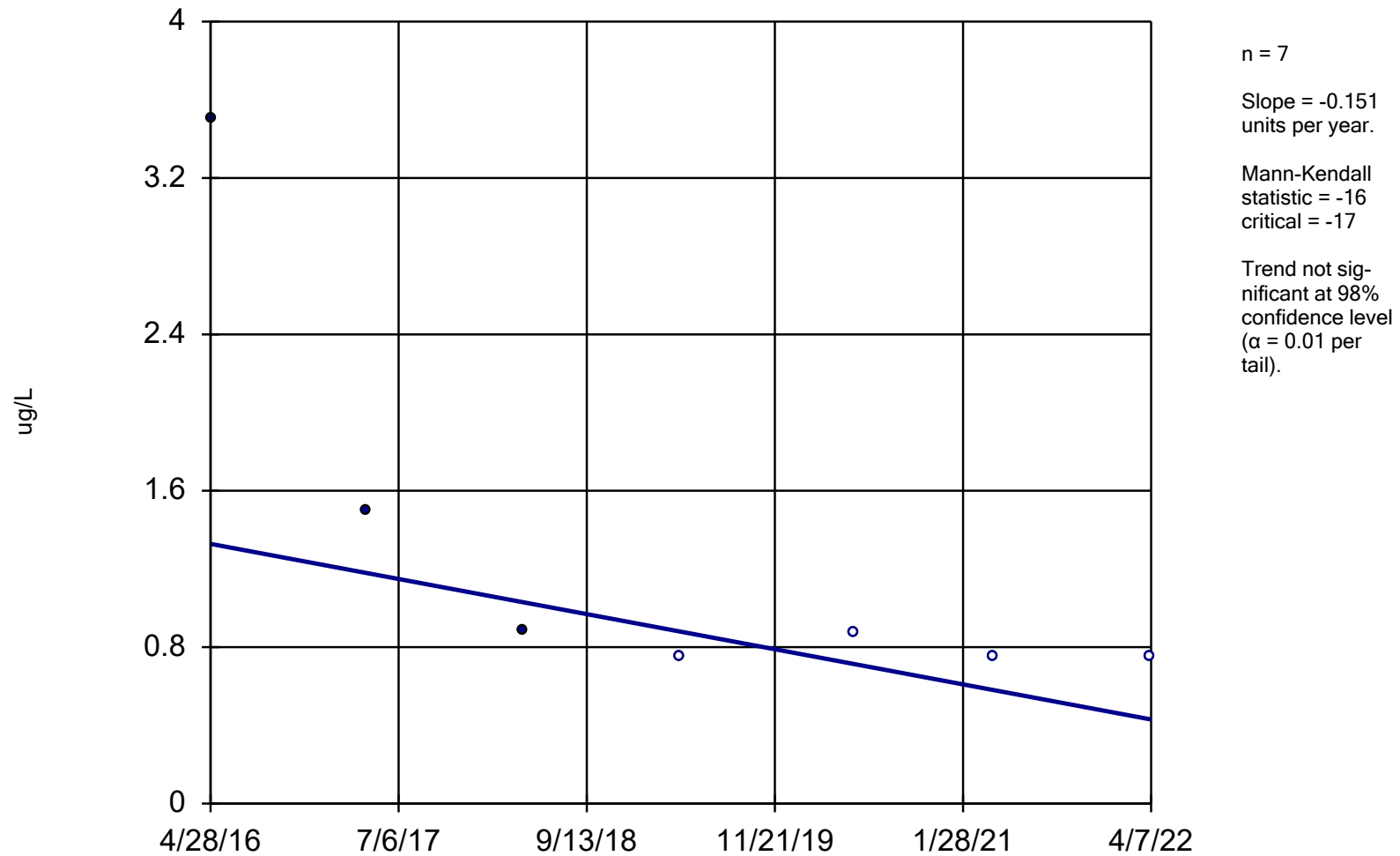
Constituent: Arsenic (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-12P

4/28/2016	0.44 (J)
4/20/2017	0.88 (J)
4/17/2018	0.51 (J)
4/16/2019	<0.75
5/21/2020	<0.88
4/6/2021	<0.75
4/6/2022	<0.75 (U)
4/11/2023	<0.53 (U)
4/1/2024	<0.53 (U)
4/16/2025	<0.53

Sen's Slope Estimator

MW-13



Constituent: Arsenic Analysis Run 9/10/2025 12:39 PM View: Lansing State Data

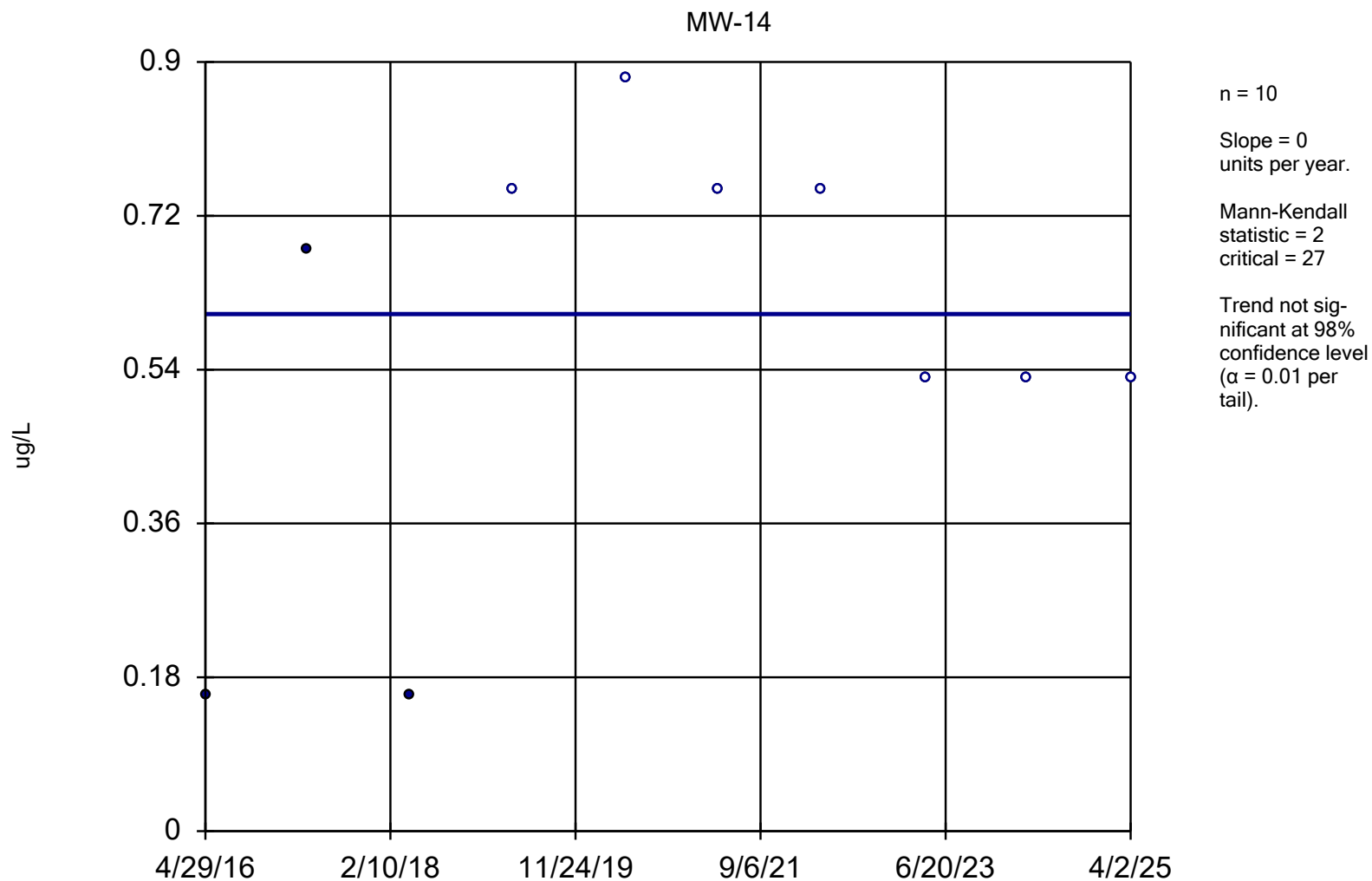
Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Arsenic (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-13
4/28/2016	3.5
4/20/2017	1.5
4/17/2018	0.89 (J)
4/16/2019	<0.75
5/21/2020	<0.88
4/7/2021	<0.75
4/7/2022	<0.75 (U)

Sen's Slope Estimator



Constituent: Arsenic Analysis Run 9/10/2025 12:39 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

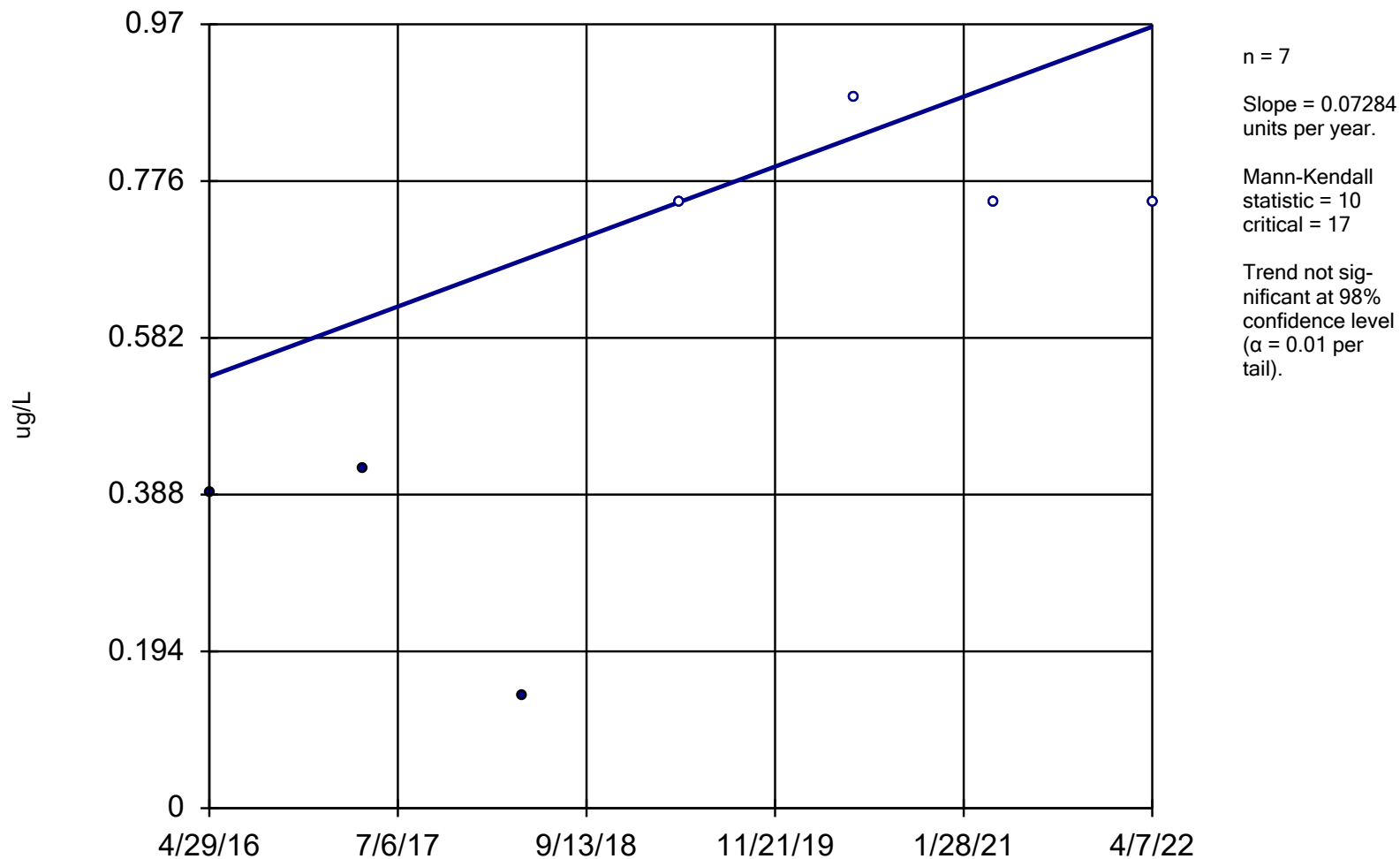
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Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-14

4/29/2016	0.16 (J)
4/20/2017	0.68 (J)
4/17/2018	0.16 (J)
4/15/2019	<0.75
5/22/2020	<0.88
4/7/2021	<0.75
4/6/2022	<0.75 (U)
4/11/2023	<0.53 (U)
4/2/2024	<0.53 (U)
4/2/2025	<0.53

Sen's Slope Estimator

MW-15



Constituent: Arsenic Analysis Run 9/10/2025 12:39 PM View: Lansing State Data

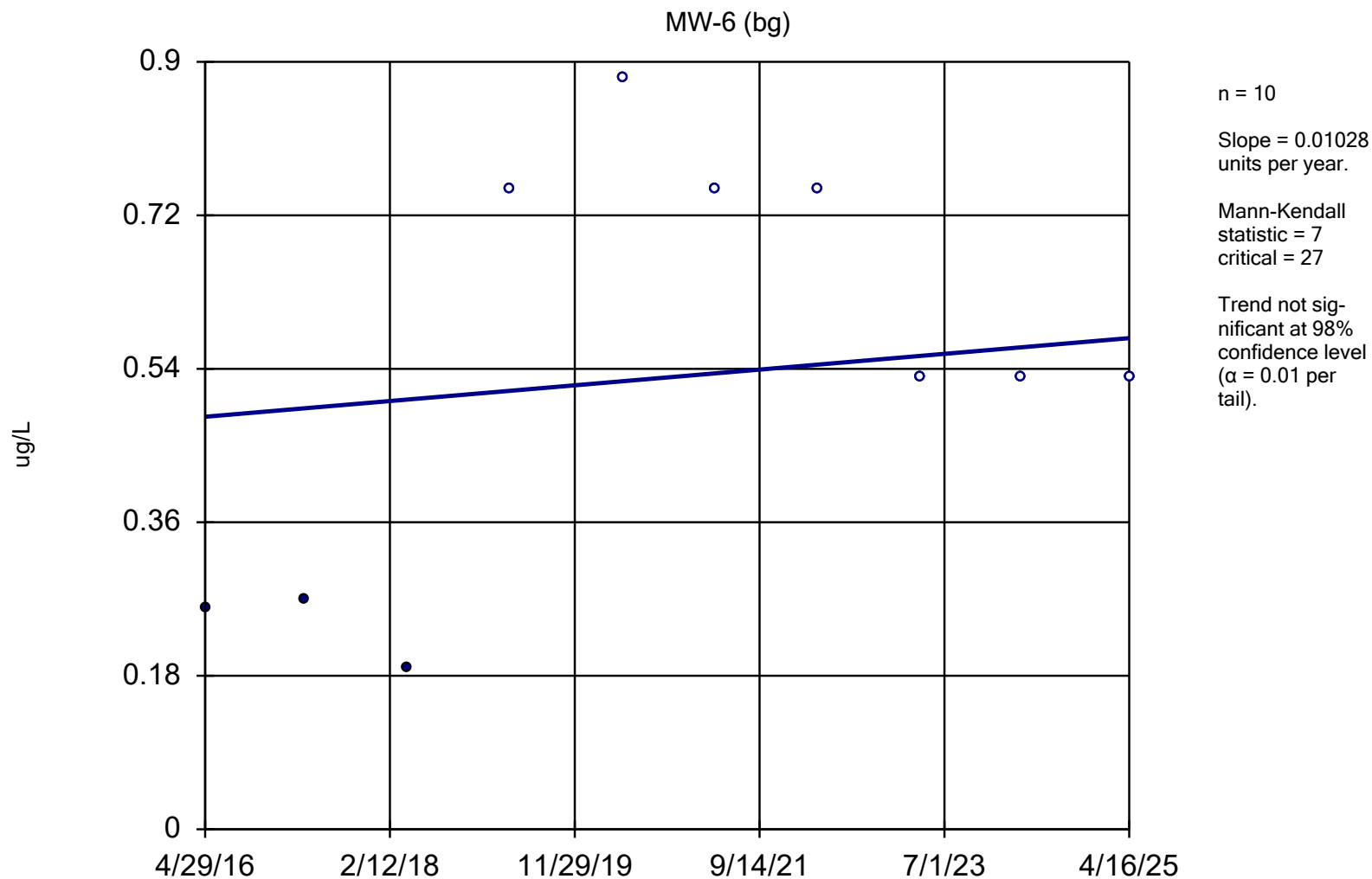
Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Arsenic (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-15
4/29/2016	0.39 (J)
4/20/2017	0.42 (J)
4/17/2018	0.14 (J)
4/16/2019	<0.75
5/22/2020	<0.88
4/7/2021	<0.75
4/7/2022	<0.75 (U)

Sen's Slope Estimator



Constituent: Arsenic Analysis Run 9/10/2025 12:39 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LansingState

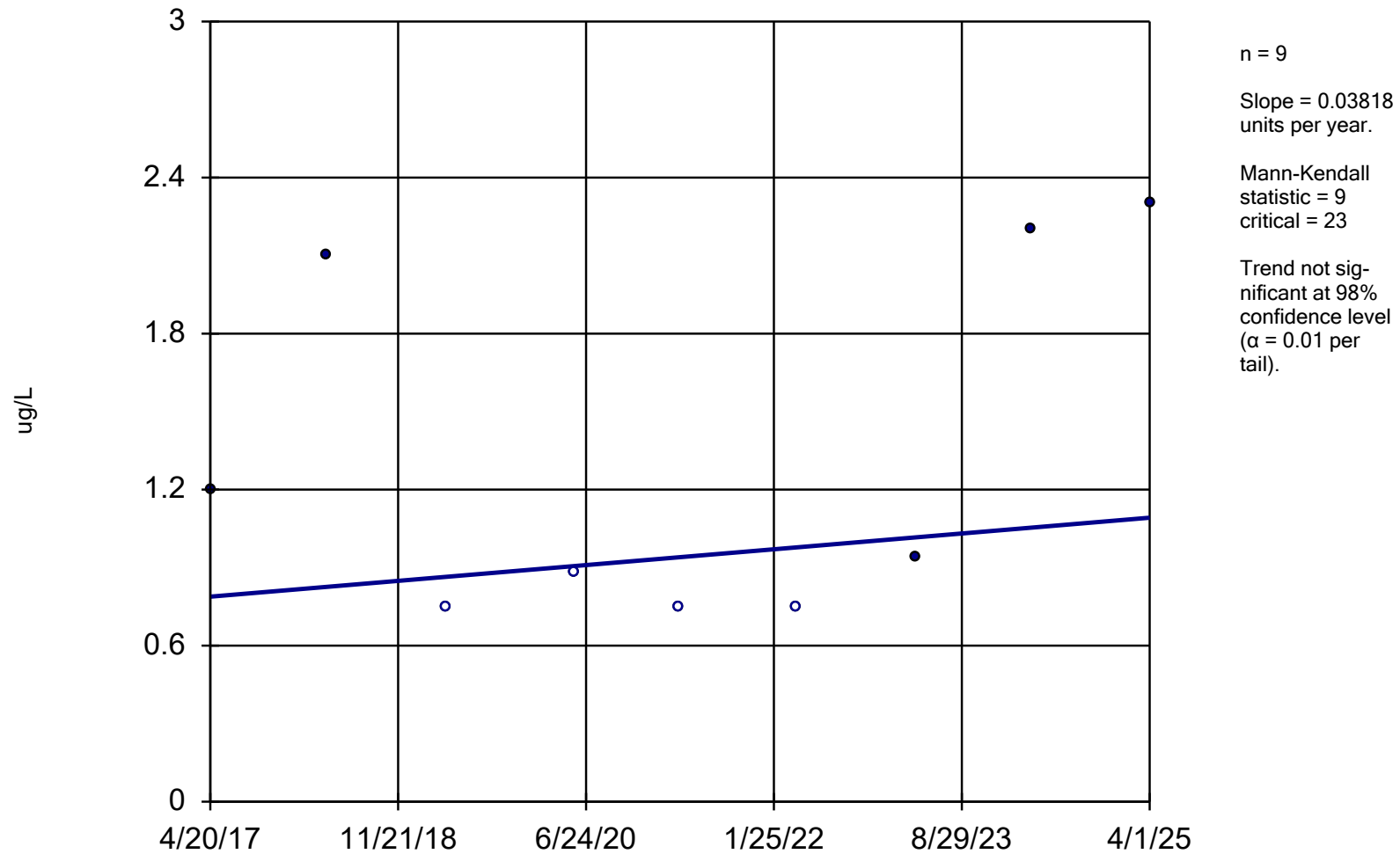
Sen's Slope Estimator

Constituent: Arsenic (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-6 (bg)
4/29/2016	0.26 (J)
4/19/2017	0.27 (J)
4/16/2018	0.19 (J)
4/15/2019	<0.75
5/20/2020	<0.88
4/7/2021	<0.75
4/6/2022	<0.75 (U)
4/11/2023	<0.53 (U)
4/1/2024	<0.53 (U)
4/16/2025	<0.53

Sen's Slope Estimator

TW-18

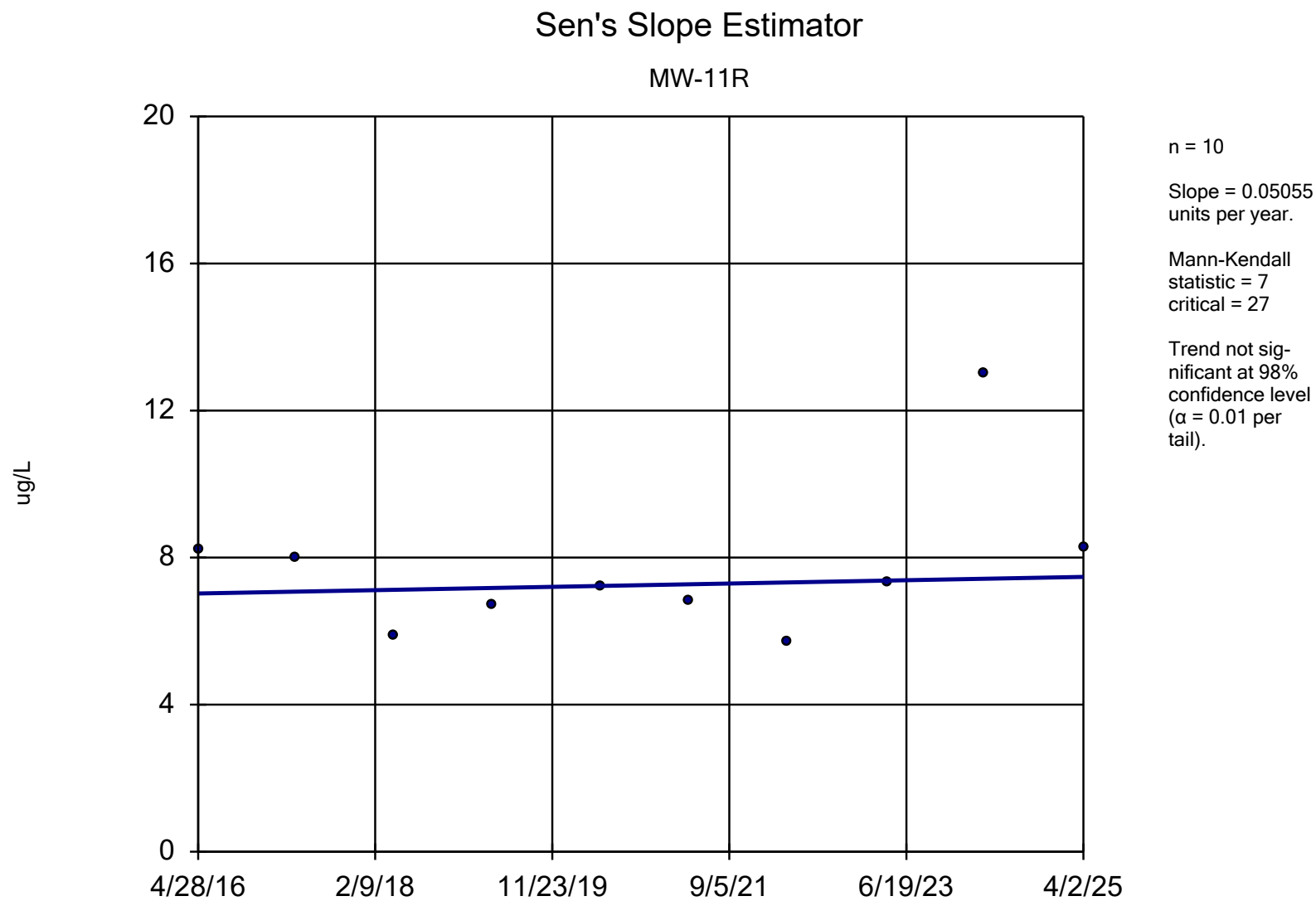


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Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Arsenic (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	TW-18
4/20/2017	1.2
4/17/2018	2.1
4/16/2019	<0.75
5/22/2020	<0.88
4/7/2021	<0.75
4/6/2022	<0.75 (U)
4/11/2023	0.94 (J)
4/1/2024	2.2
4/1/2025	2.3



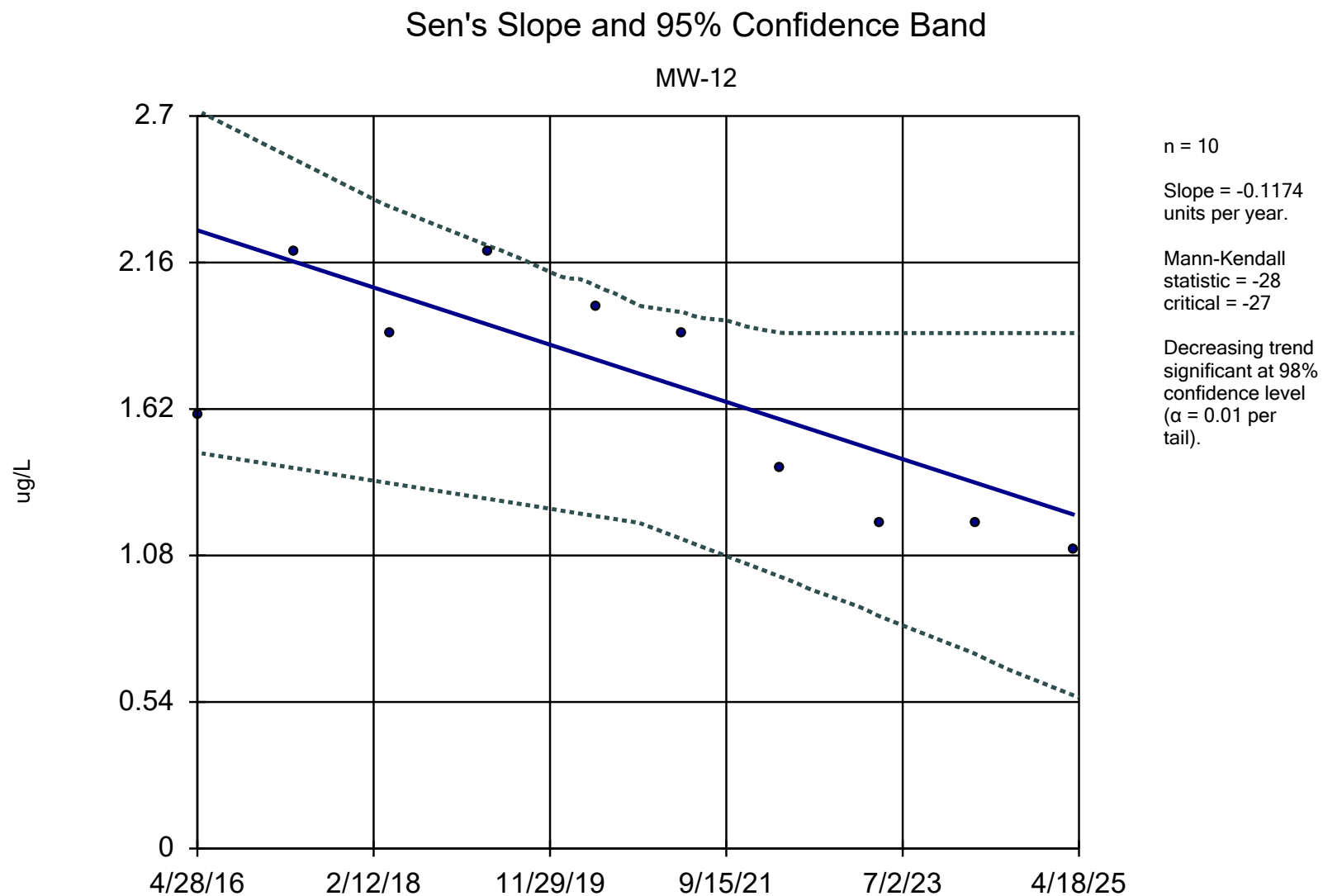
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Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-11R

4/28/2016	8.2
4/20/2017	8
4/17/2018	5.9
4/16/2019	6.7
5/21/2020	7.2
4/7/2021	6.8
4/7/2022	5.7
4/10/2023	7.3
4/2/2024	13
4/2/2025	8.3



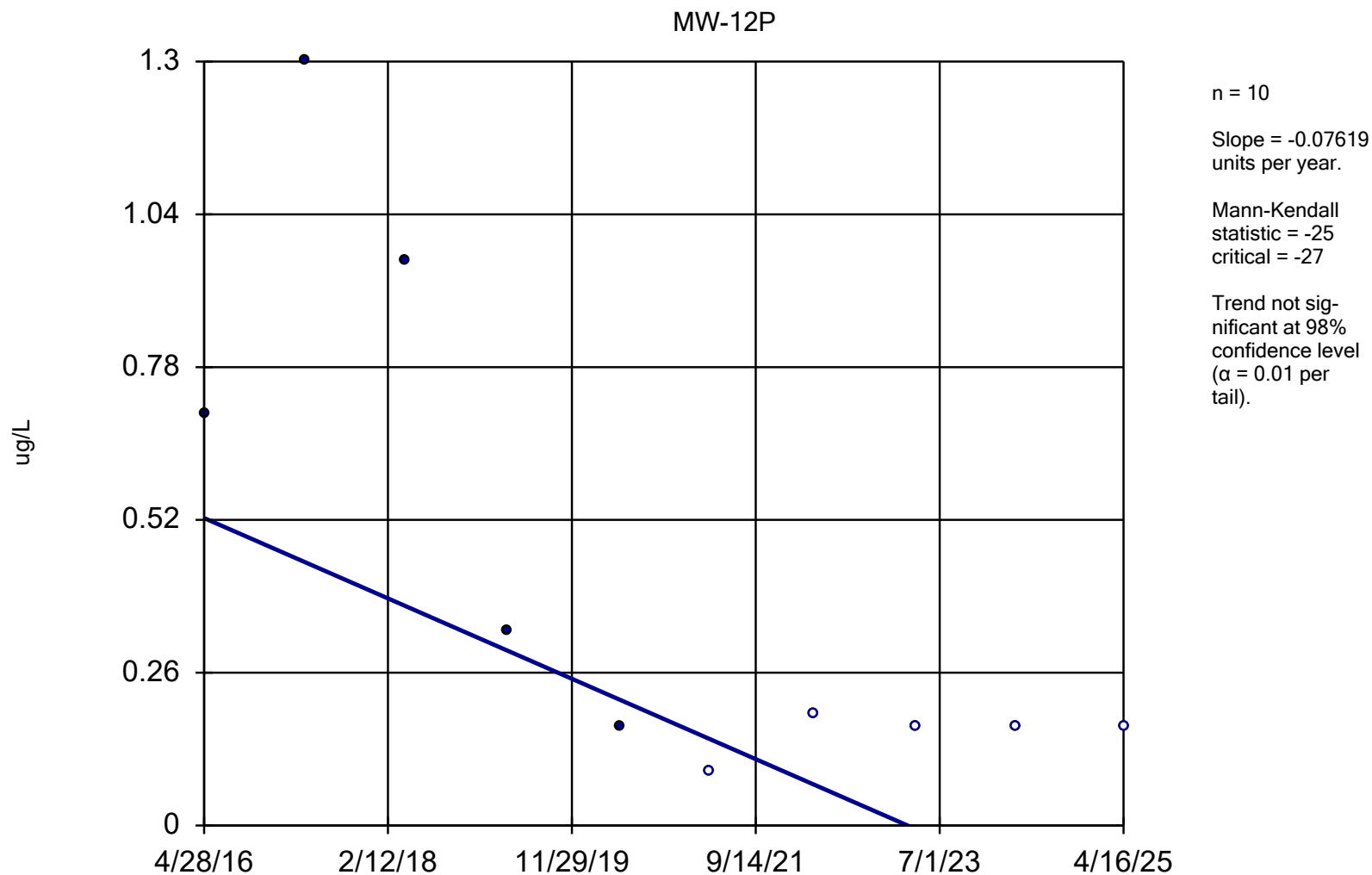
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Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-12	LCL	UCL
4/28/2016	1.6	1.459	2.72
4/20/2017	2.2	1.403	2.542
4/17/2018	1.9	1.346	2.364
4/16/2019	2.2	1.288	2.221
5/21/2020	2	1.225	2.073
4/6/2021	1.9	1.139	1.976
4/6/2022	1.4	1.001	1.901
4/11/2023	1.2	0.8545	1.9
4/1/2024	1.2	0.7154	1.9
4/2/2025	1.1	0.5629	1.9

Sen's Slope Estimator



Constituent: Cobalt Analysis Run 9/10/2025 12:39 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LansingState

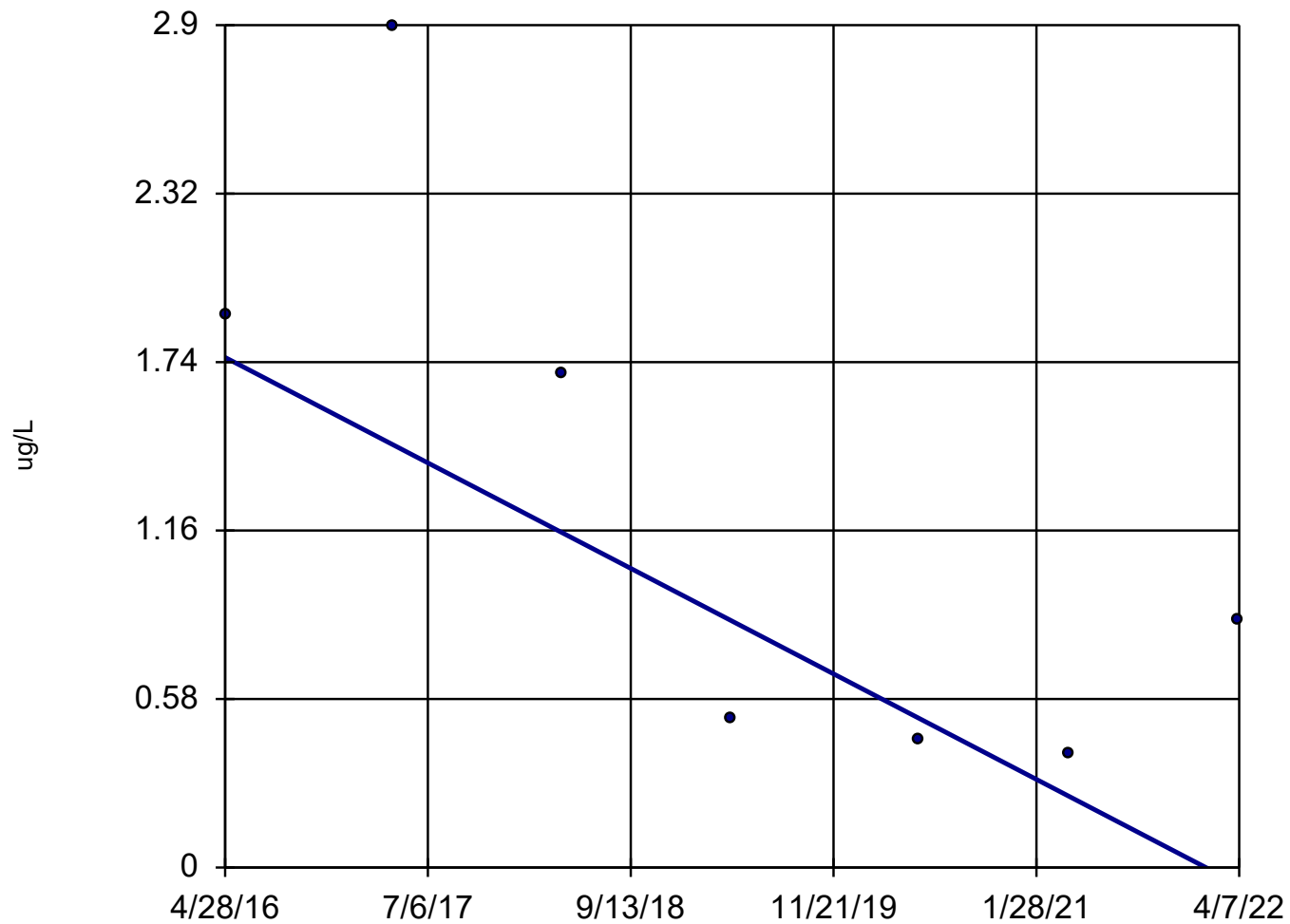
Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-12P
4/28/2016	0.7 (J)
4/20/2017	1.3
4/17/2018	0.96 (J)
4/16/2019	0.33 (J)
5/21/2020	0.17 (J)
4/6/2021	<0.091
4/6/2022	<0.19 (U)
4/11/2023	<0.17 (U)
4/1/2024	<0.17 (U)
4/16/2025	<0.17

Sen's Slope Estimator

MW-13



n = 7

Slope = -0.3053
units per year.

Mann-Kendall
statistic = -13
critical = -17

Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Cobalt Analysis Run 9/10/2025 12:39 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

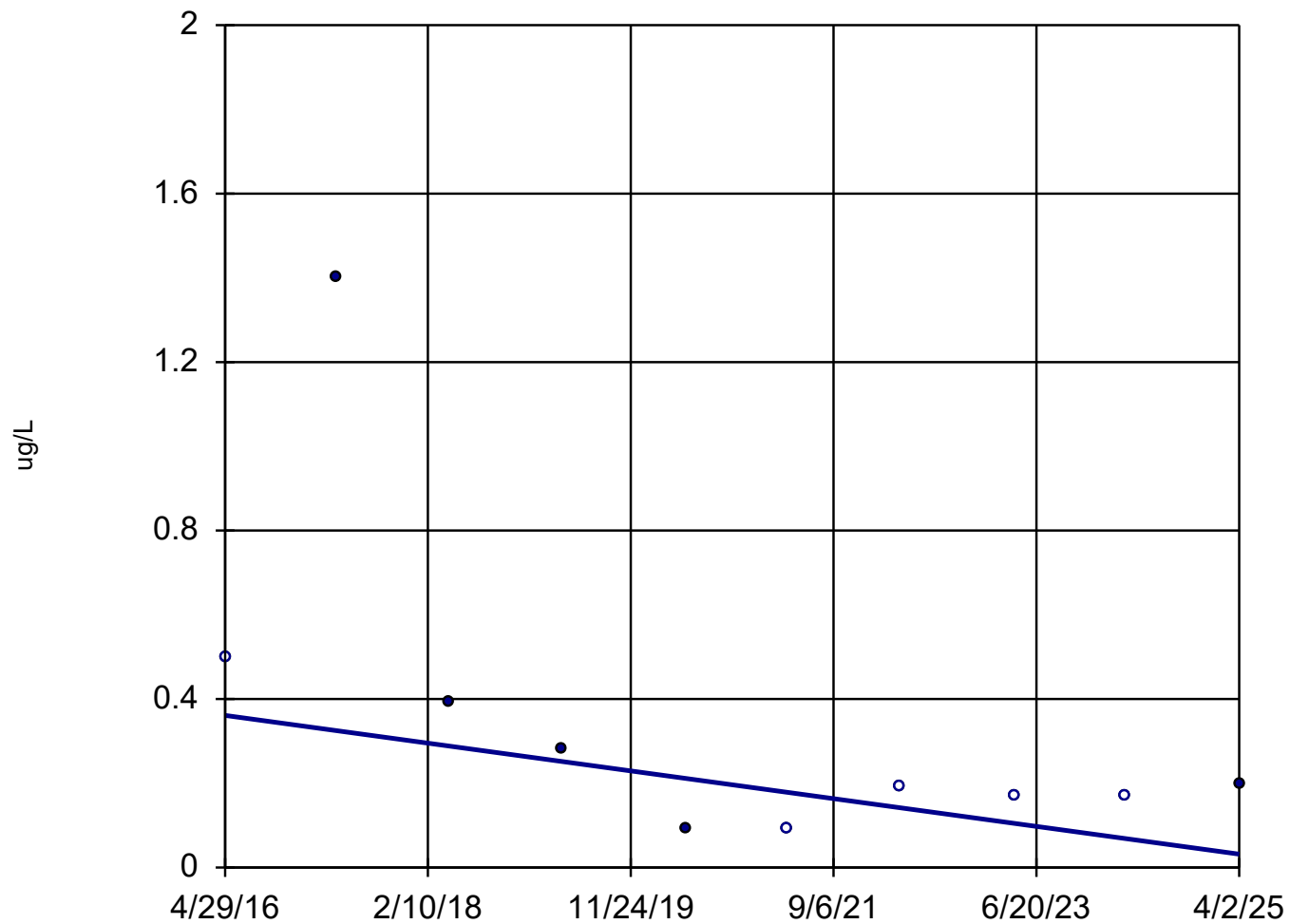
Constituent: Cobalt (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-13

4/28/2016	1.9
4/20/2017	2.9
4/17/2018	1.7
4/16/2019	0.51
5/21/2020	0.44 (J)
4/7/2021	0.39 (J)
4/7/2022	0.85

Sen's Slope Estimator

MW-14



n = 10

Slope = -0.03689
units per year.

Mann-Kendall
statistic = -20
critical = -27

Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Cobalt Analysis Run 9/10/2025 12:40 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

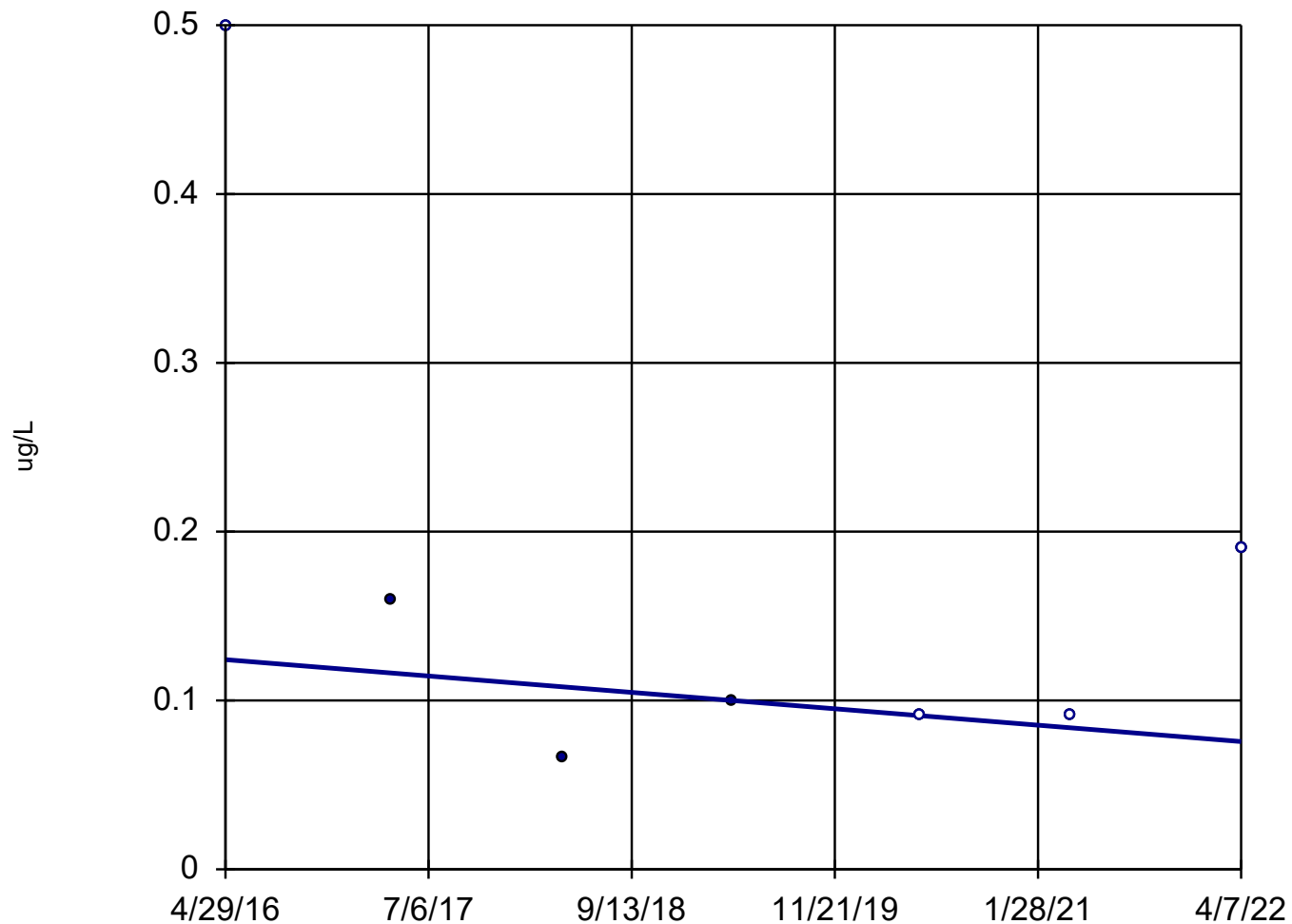
Constituent: Cobalt (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-14

4/29/2016	<0.5
4/20/2017	1.4
4/17/2018	0.39 (J)
4/15/2019	0.28 (J)
5/22/2020	0.092 (J)
4/7/2021	<0.091
4/6/2022	<0.19 (U)
4/11/2023	<0.17 (U)
4/2/2024	<0.17 (U)
4/2/2025	0.2 (J)

Sen's Slope Estimator

MW-15



n = 7

Slope = -0.008172
units per year.

Mann-Kendall
statistic = -4
critical = -17

Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Cobalt Analysis Run 9/10/2025 12:40 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LansingState

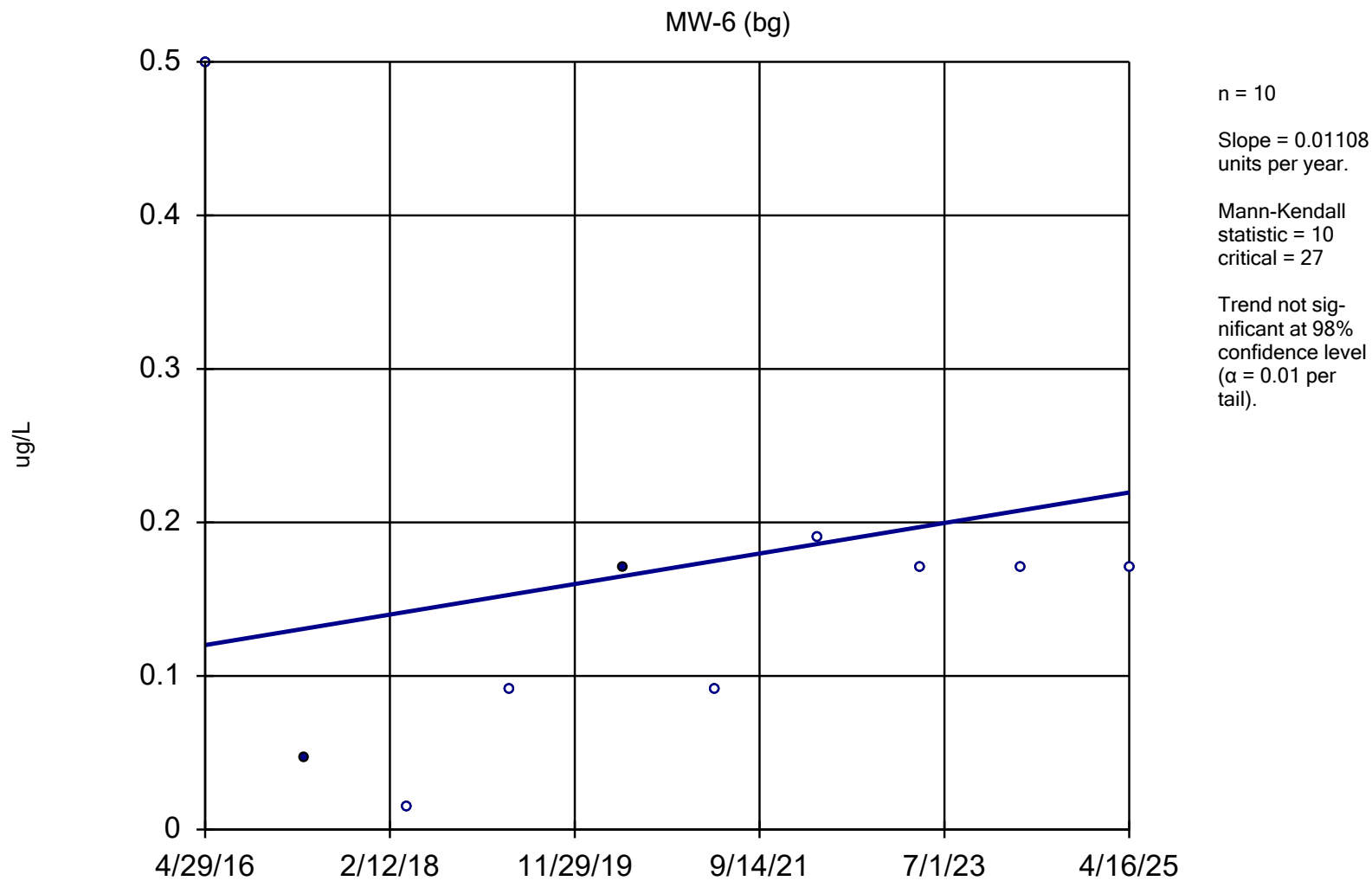
Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-15

4/29/2016	<0.5
4/20/2017	0.16 (J,B)
4/17/2018	0.066 (J)
4/16/2019	0.1 (J)
5/22/2020	<0.091
4/7/2021	<0.091
4/7/2022	<0.19 (U)

Sen's Slope Estimator



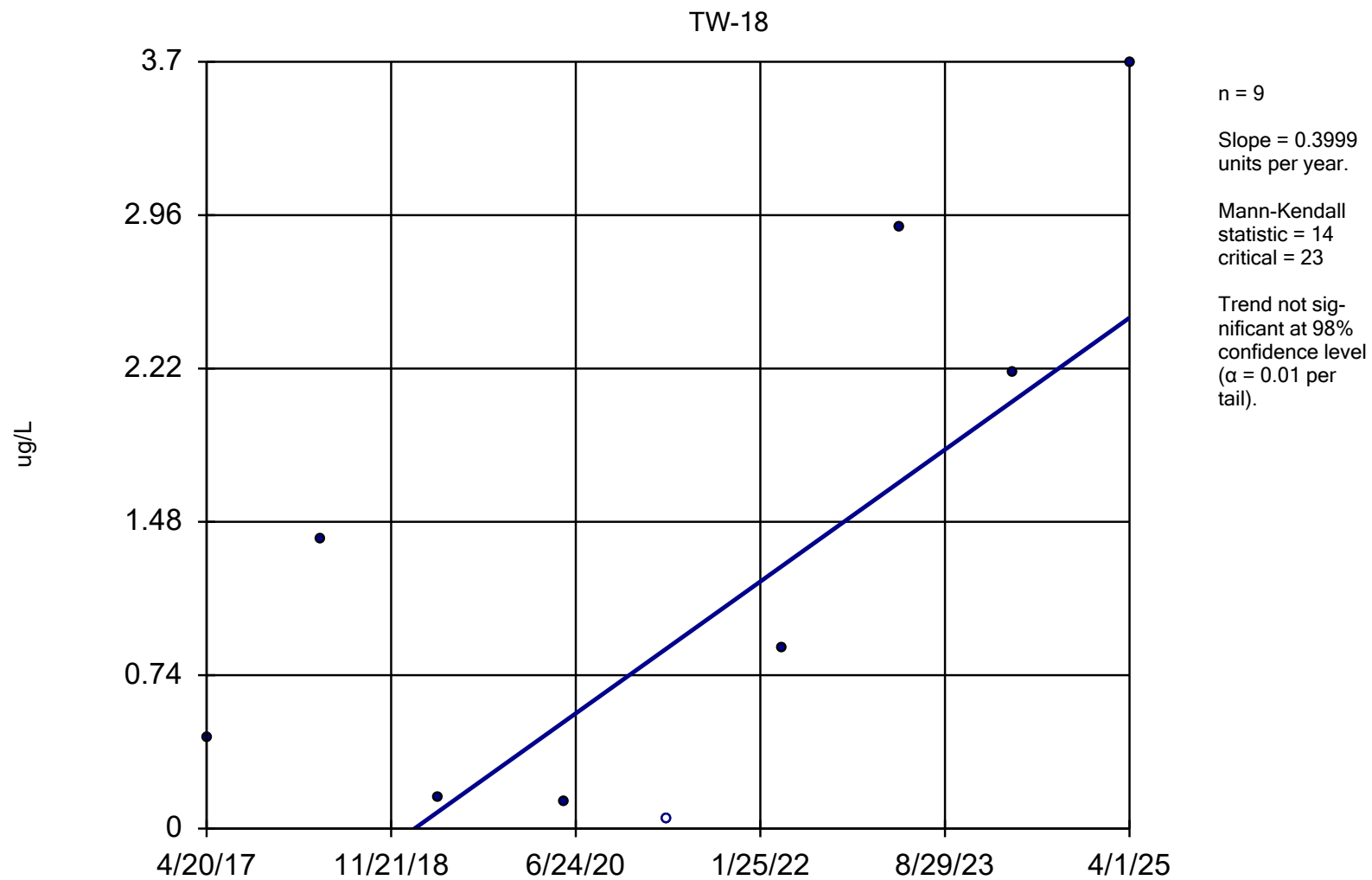
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Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-6 (bg)
4/29/2016	<0.5
4/19/2017	0.047 (J,B)
4/16/2018	<0.014
4/15/2019	<0.091
5/20/2020	0.17 (J)
4/7/2021	<0.091
4/6/2022	<0.19 (U)
4/11/2023	<0.17 (U)
4/1/2024	<0.17 (U)
4/16/2025	<0.17

Sen's Slope Estimator

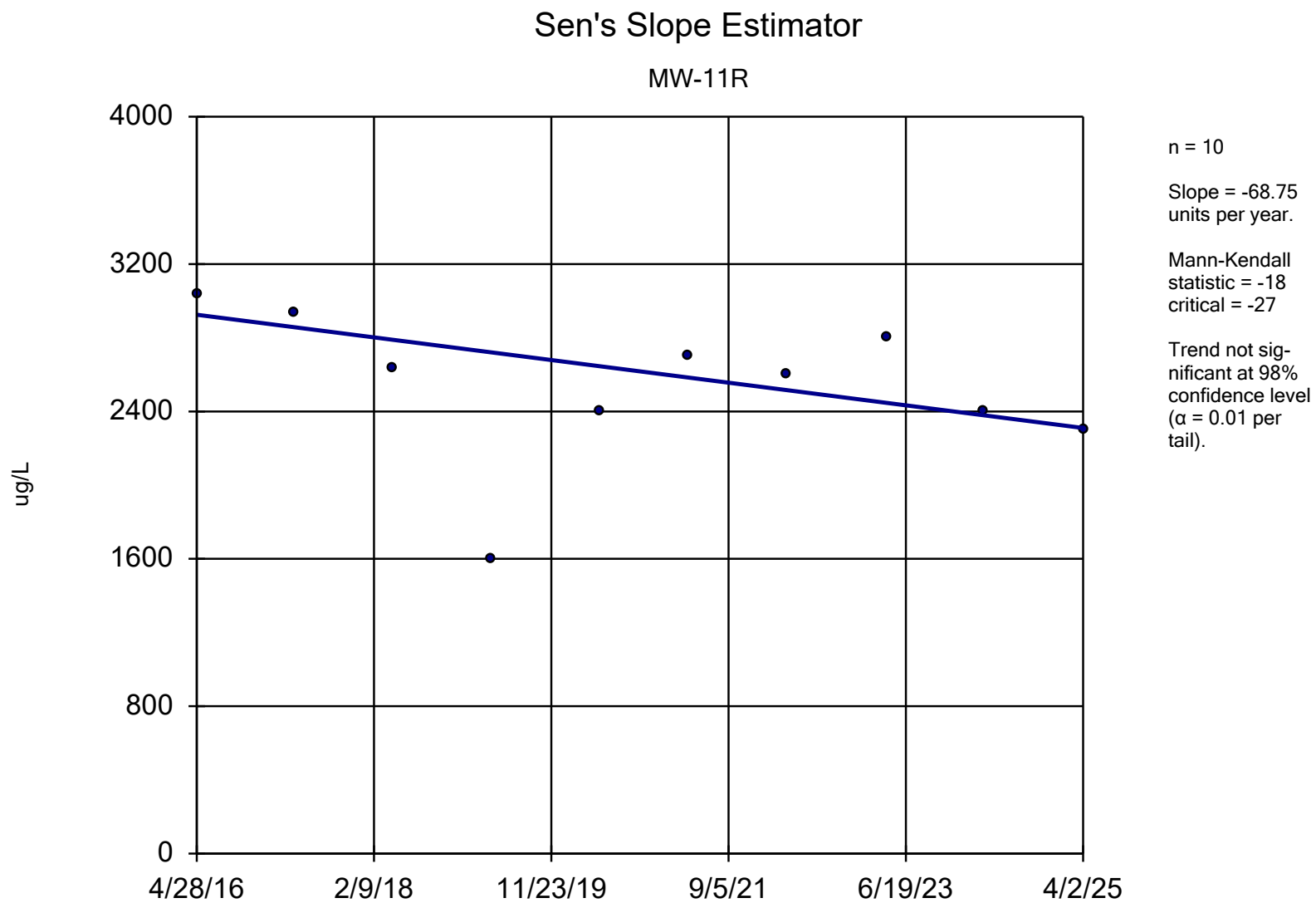


Constituent: Cobalt Analysis Run 9/10/2025 12:40 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	TW-18
4/20/2017	0.44 (J)
4/17/2018	1.4
4/16/2019	0.15 (J)
5/22/2020	0.13 (J)
4/7/2021	<0.091
4/6/2022	0.87
4/11/2023	2.9
4/1/2024	2.2
4/1/2025	3.7



Constituent: Manganese Analysis Run 9/10/2025 12:40 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

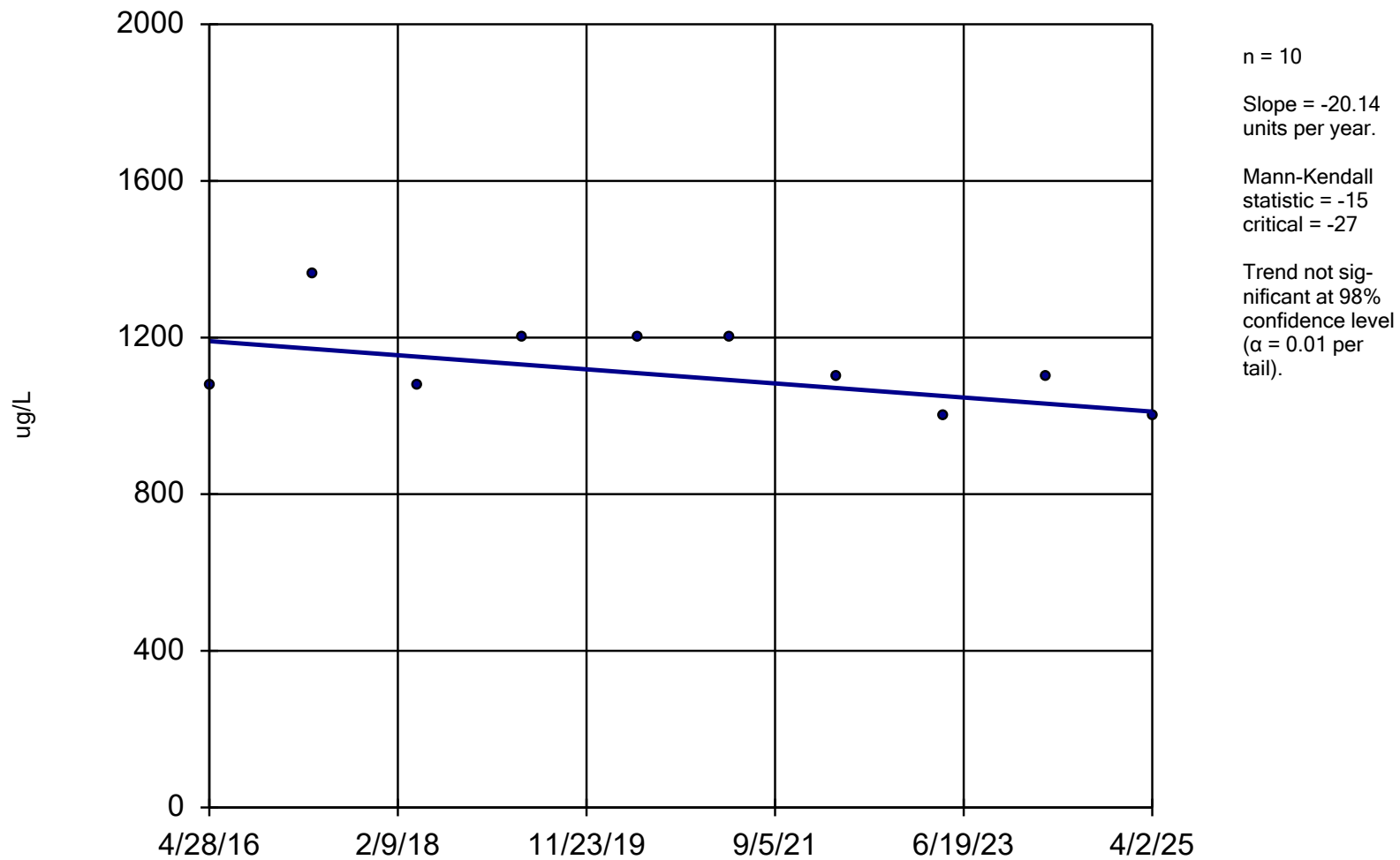
Constituent: Manganese (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-11R

4/28/2016	3040
4/20/2017	2940
4/17/2018	2630
4/16/2019	1600
5/21/2020	2400
4/7/2021	2700
4/7/2022	2600
4/10/2023	2800
4/2/2024	2400
4/2/2025	2300

Sen's Slope Estimator

MW-12



Constituent: Manganese Analysis Run 9/10/2025 12:40 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

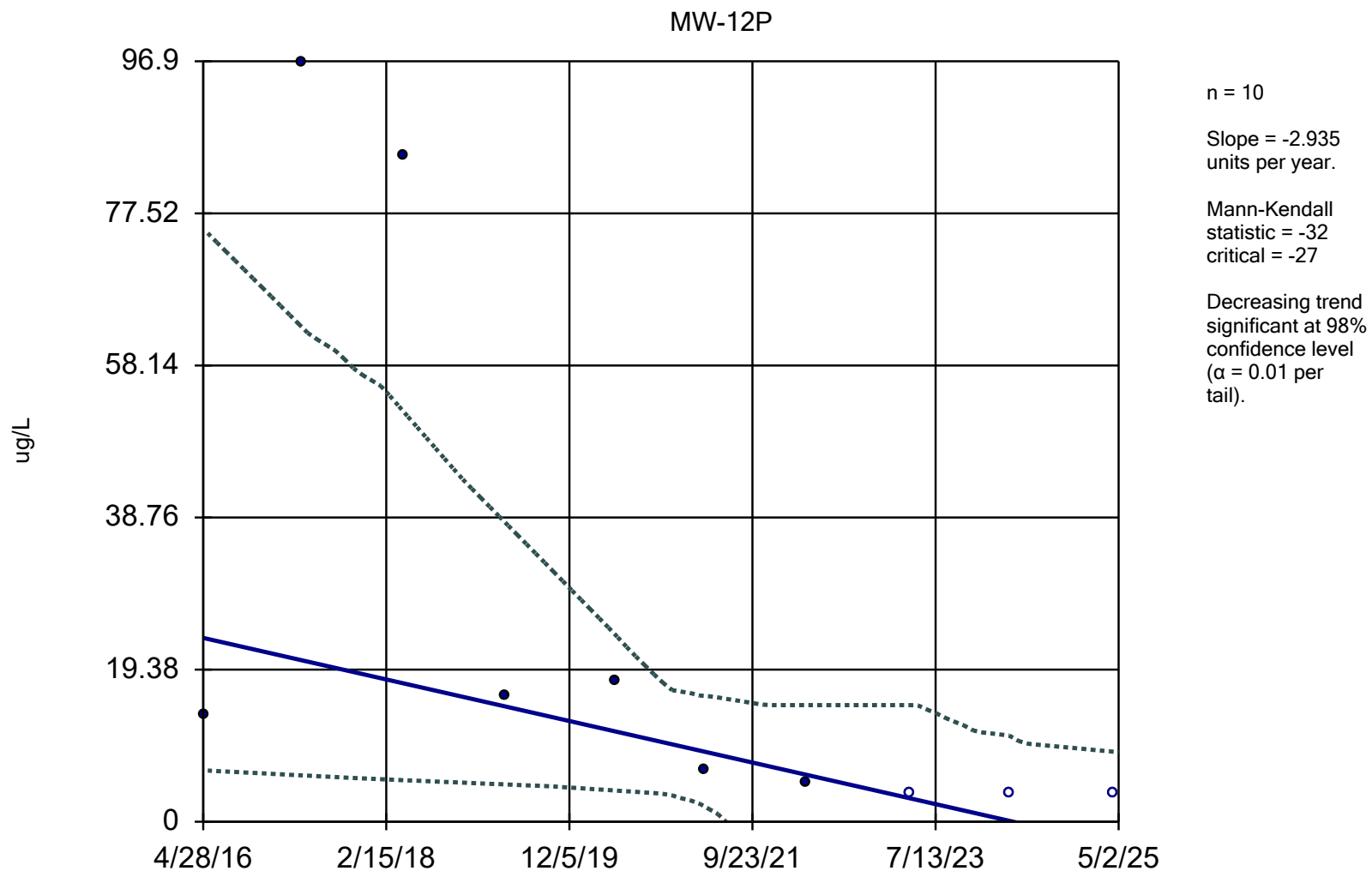
Sen's Slope Estimator

Constituent: Manganese (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-12

4/28/2016	1080
4/20/2017	1360
4/17/2018	1080
4/16/2019	1200
5/21/2020	1200
4/6/2021	1200
4/6/2022	1100
4/11/2023	1000
4/1/2024	1100
4/2/2025	1000

Sen's Slope and 95% Confidence Band



Constituent: Manganese Analysis Run 9/10/2025 12:40 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

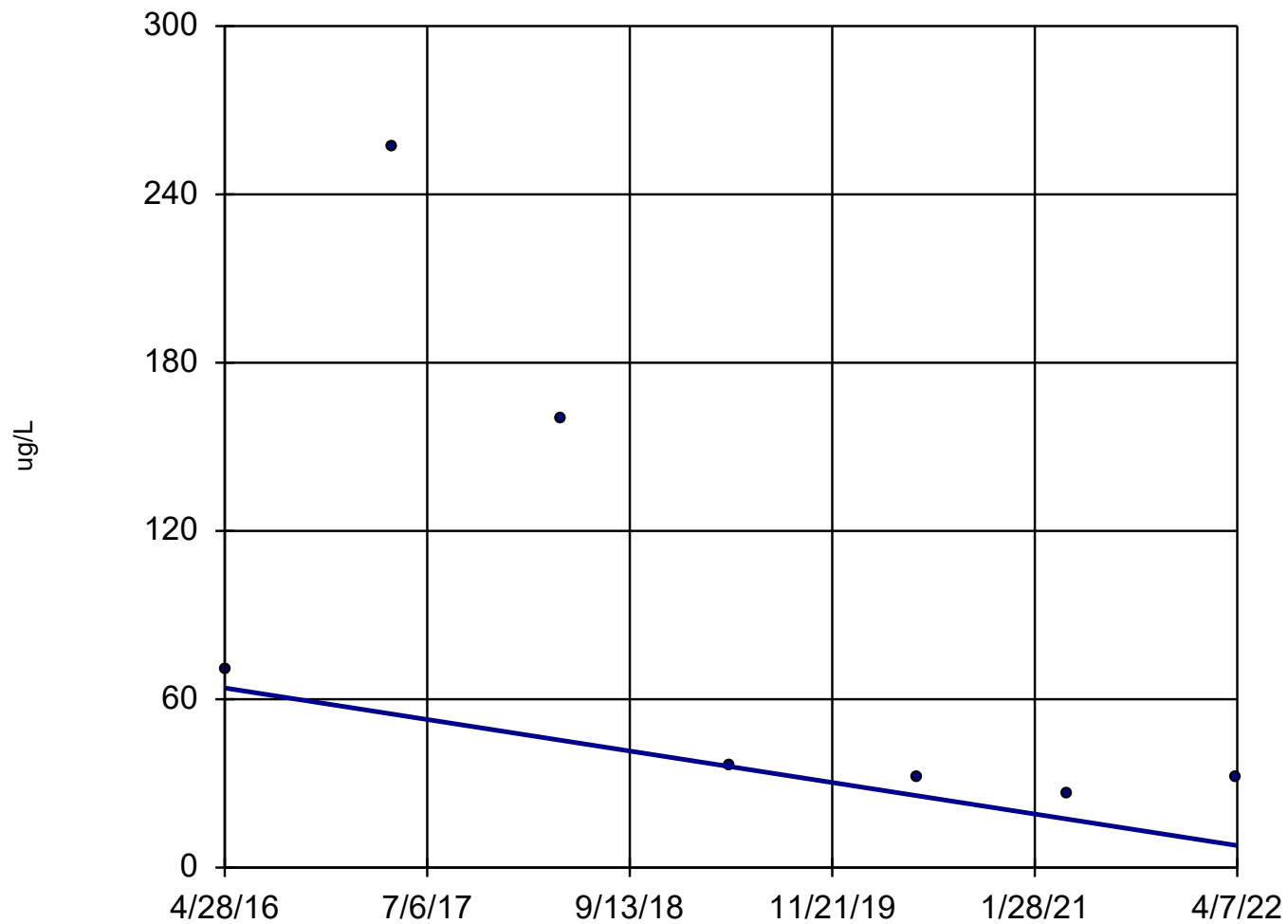
Sen's Slope Estimator

Constituent: Manganese (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-12P	LCL	UCL
4/28/2016	13.7	6.544	75.55
4/20/2017	96.9	5.905	62.95
4/17/2018	84.8	5.297	52.31
4/16/2019	16	4.757	38.22
5/21/2020	18	3.971	23.75
4/6/2021	6.7 (J)	1.911	16
4/6/2022	4.9 (J)	-11.76	14.85
4/11/2023	<3.6 (U)	-23.53	14.85
4/1/2024	<3.6 (U)	-34.84	11
4/16/2025	<3.6	-47.91	8.915

Sen's Slope Estimator

MW-13



n = 7

Slope = -9.445
units per year.

Mann-Kendall
statistic = -14
critical = -17

Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Manganese Analysis Run 9/10/2025 12:40 PM View: Lansing State Data

Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

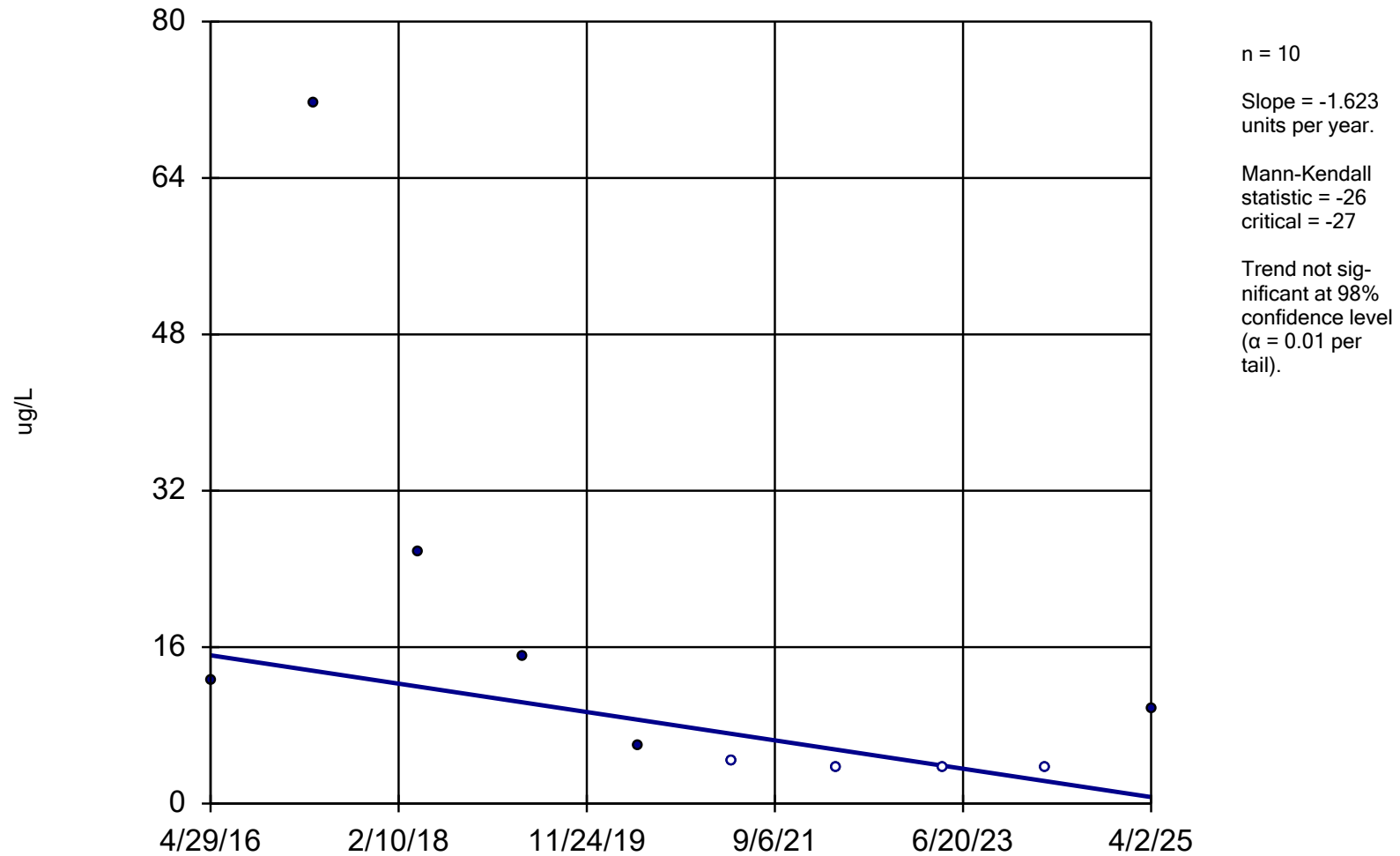
Constituent: Manganese (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-13

4/28/2016	70.4
4/20/2017	257
4/17/2018	160
4/16/2019	36
5/21/2020	32
4/7/2021	26
4/7/2022	32

Sen's Slope Estimator

MW-14



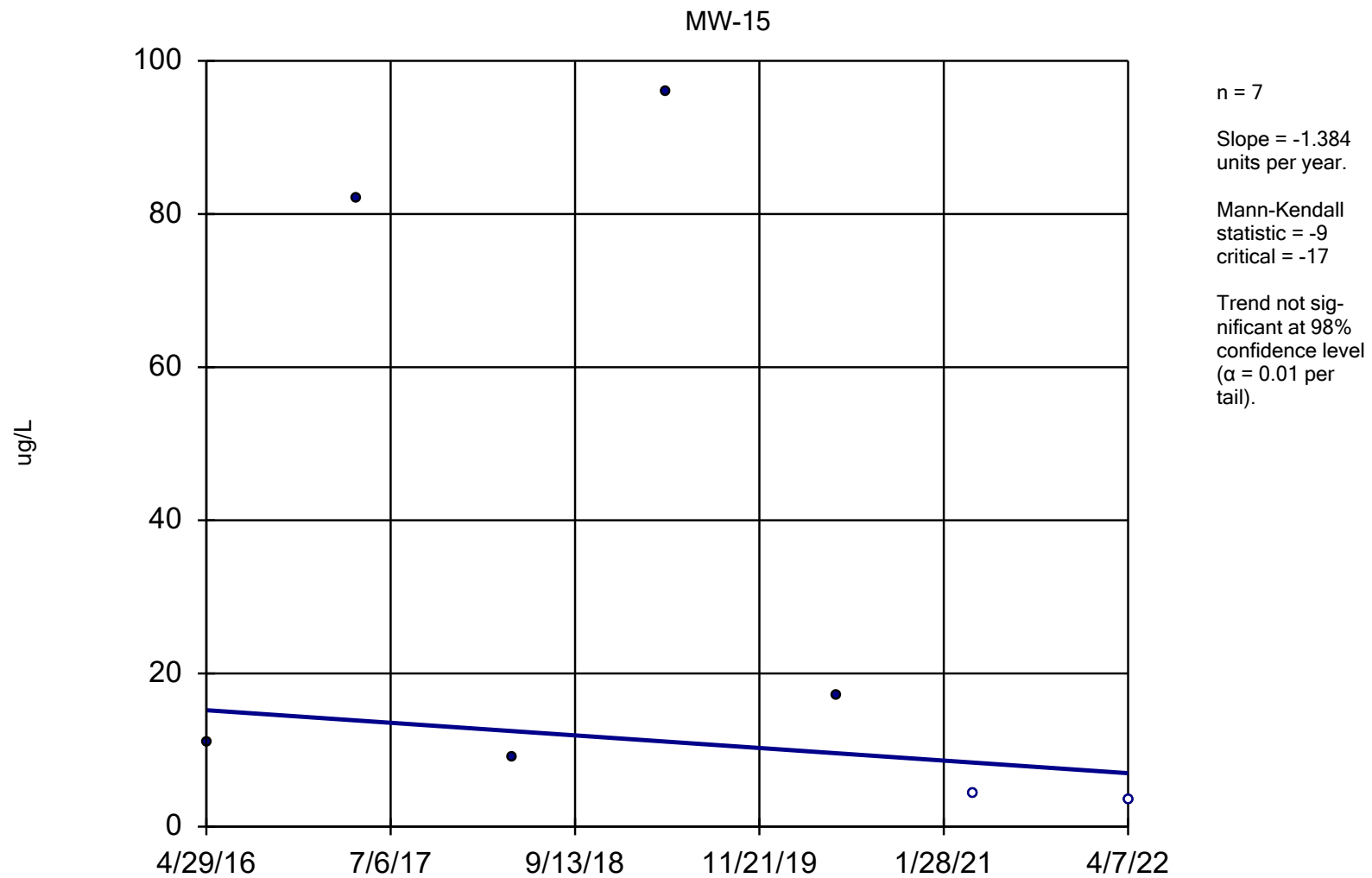
Constituent: Manganese Analysis Run 9/10/2025 12:40 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Manganese (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-14
4/29/2016	12.6
4/20/2017	71.7
4/17/2018	25.8
4/15/2019	15
5/22/2020	6 (J)
4/7/2021	<4.4
4/6/2022	<3.6 (U)
4/11/2023	<3.6 (U)
4/2/2024	<3.6 (U)
4/2/2025	9.7 (J)

Sen's Slope Estimator



Constituent: Manganese Analysis Run 9/10/2025 12:40 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

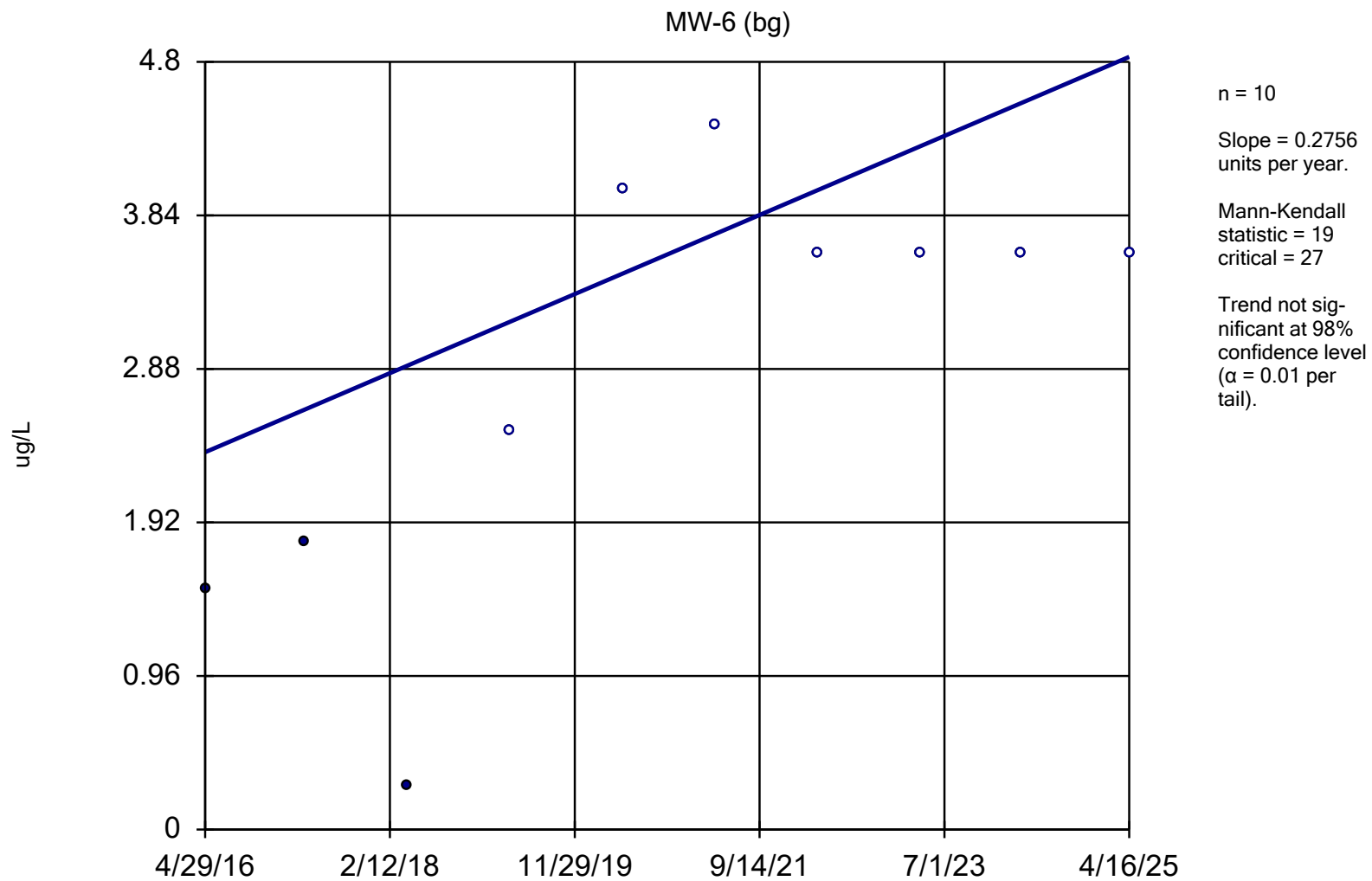
Sen's Slope Estimator

Constituent: Manganese (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

MW-15

4/29/2016	11.1
4/20/2017	82.1
4/17/2018	9.1
4/16/2019	96
5/22/2020	17
4/7/2021	<4.4
4/7/2022	<3.6 (U)

Sen's Slope Estimator

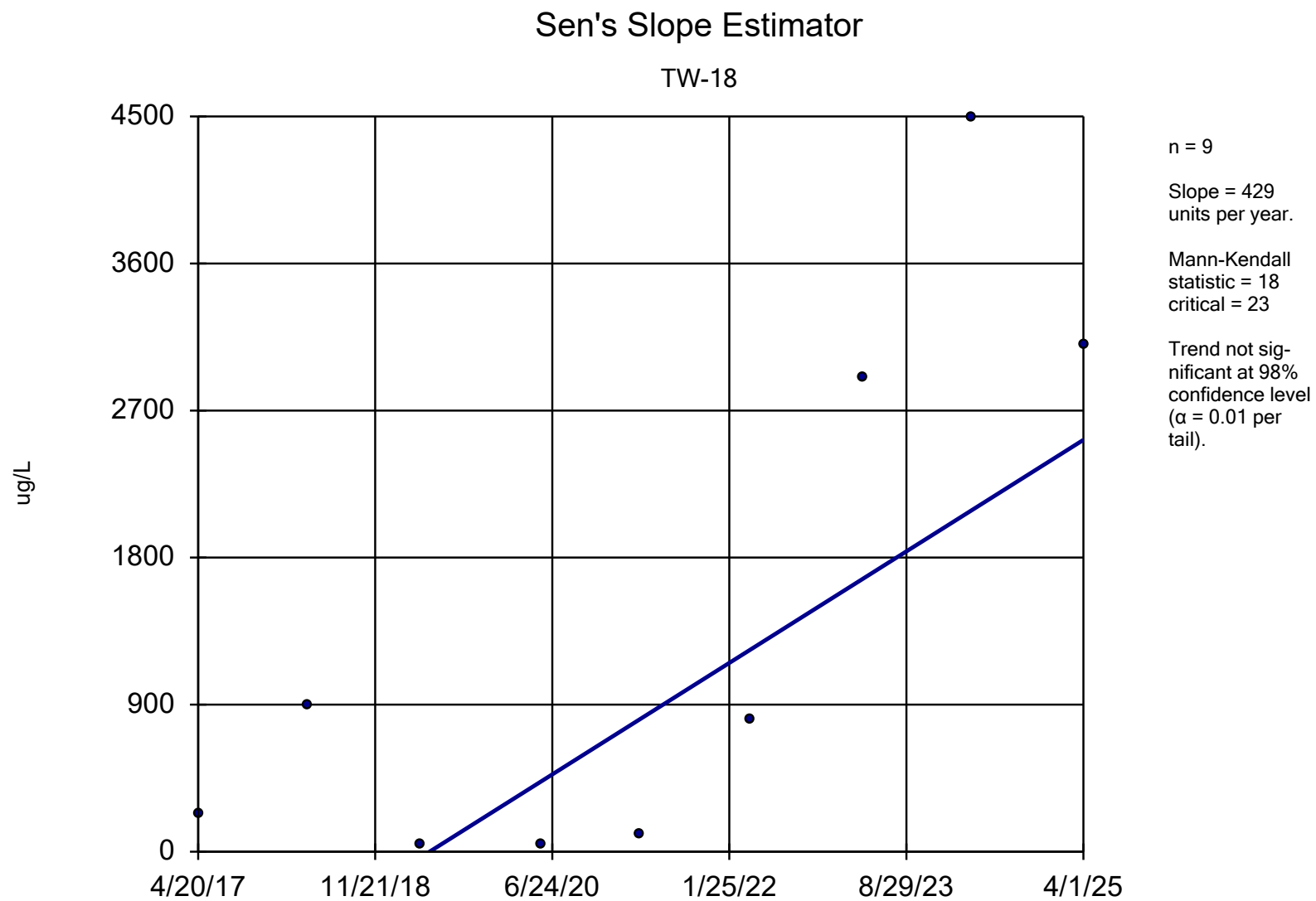


Constituent: Manganese Analysis Run 9/10/2025 12:41 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Manganese (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

	MW-6 (bg)
4/29/2016	1.5 (Y)
4/19/2017	1.8 (B)
4/16/2018	0.28 (J)
4/15/2019	<2.5
5/20/2020	<4
4/7/2021	<4.4
4/6/2022	<3.6 (U)
4/11/2023	<3.6 (U)
4/1/2024	<3.6 (U)
4/16/2025	<3.6



Constituent: Manganese Analysis Run 9/10/2025 12:41 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

Sen's Slope Estimator

Constituent: Manganese (ug/L) Analysis Run 9/10/2025 12:43 PM View: Lansing State Data
Lansing Generating Station Client: SCS Engineers Data: LansingState

TW-18

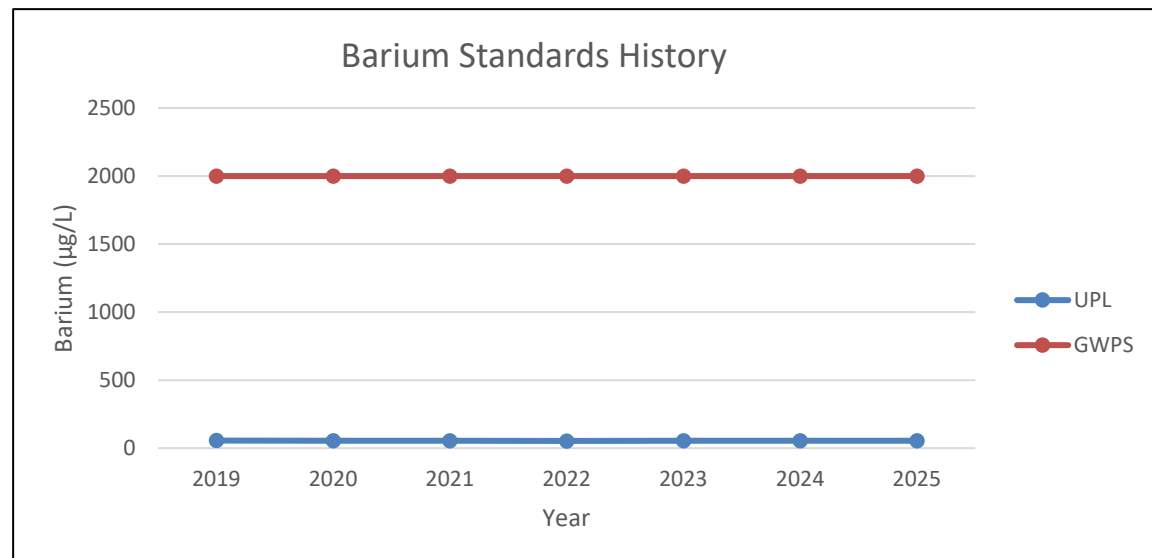
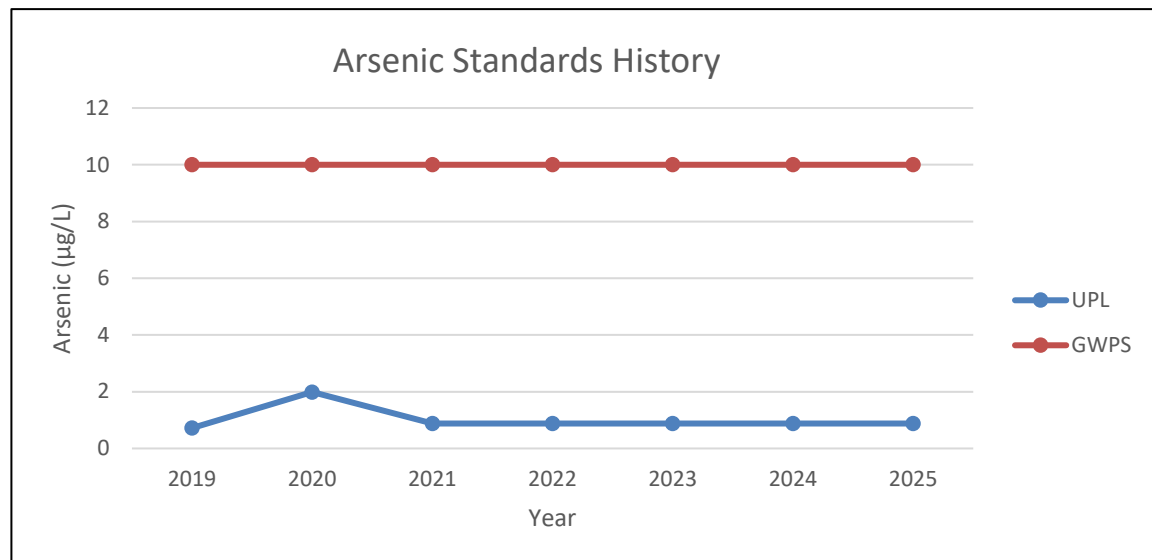
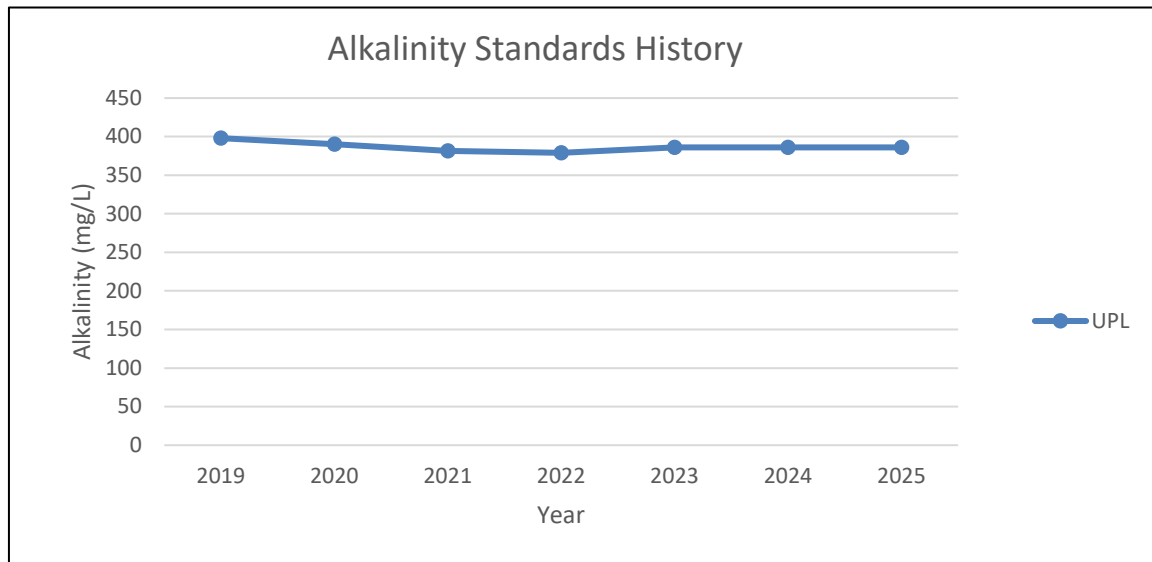
4/20/2017	227
4/17/2018	897
4/16/2019	43
5/22/2020	40
4/7/2021	110
4/6/2022	810
4/11/2023	2900
4/1/2024	4500
4/1/2025	3100



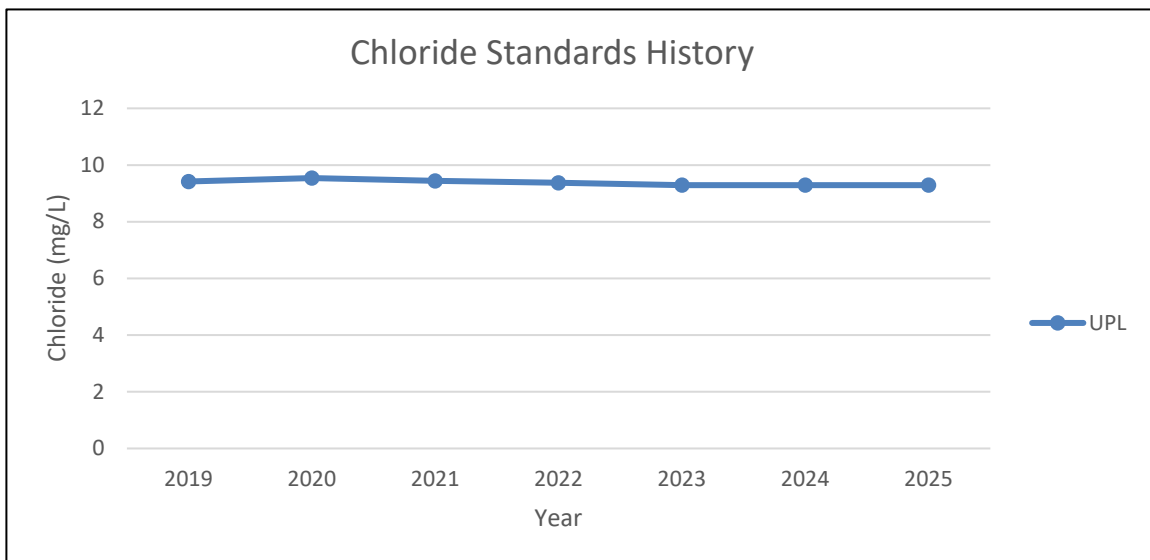
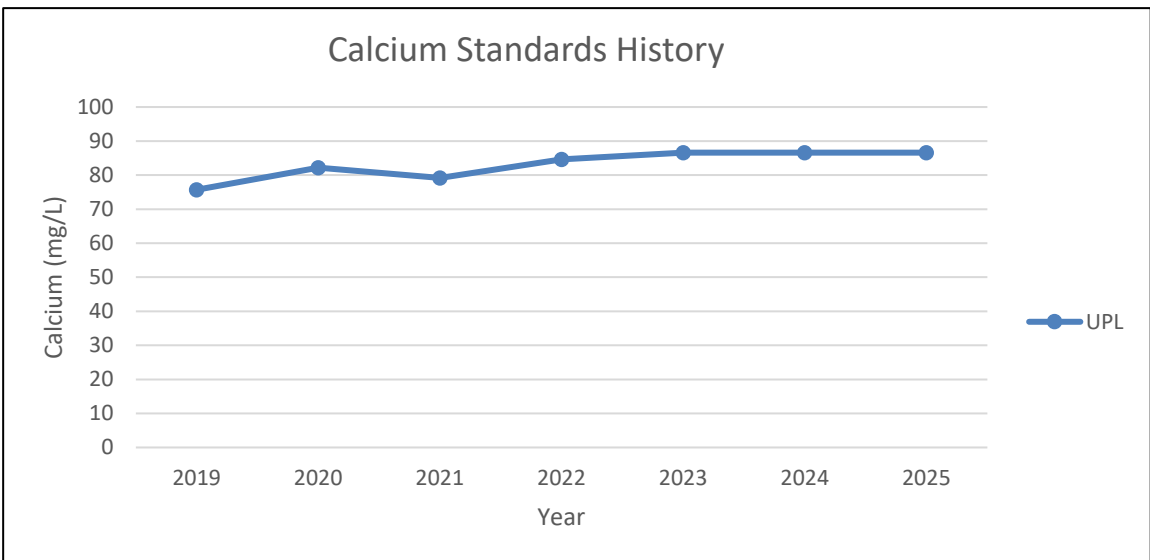
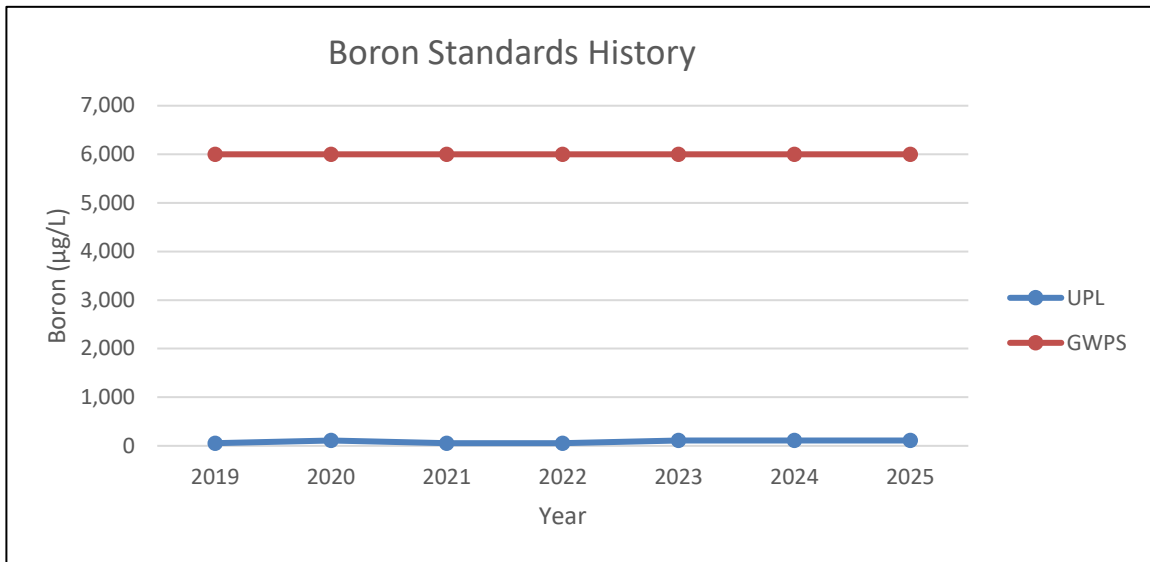
Appendix F

Standards History Graphs

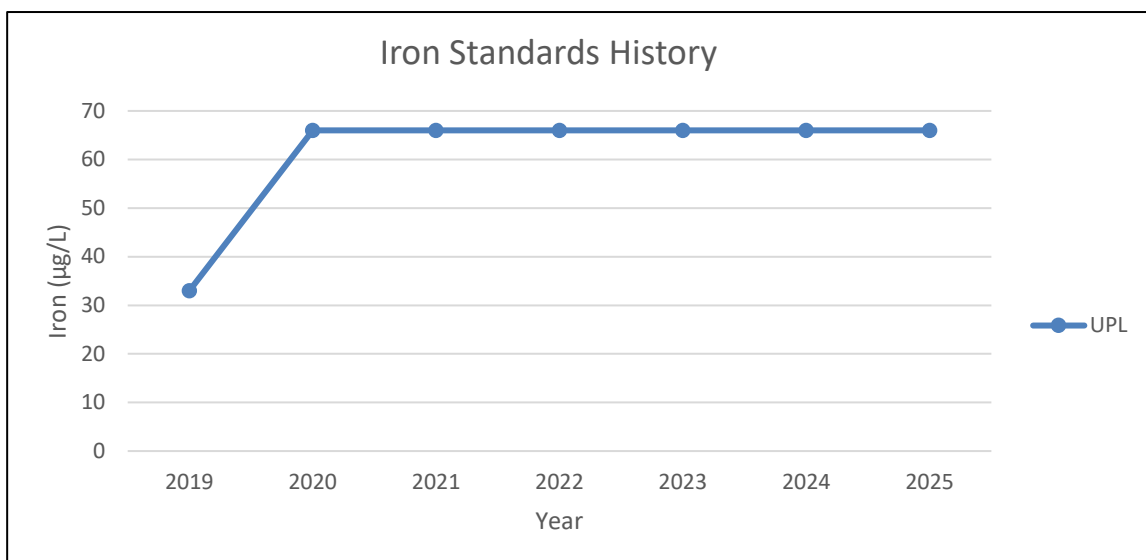
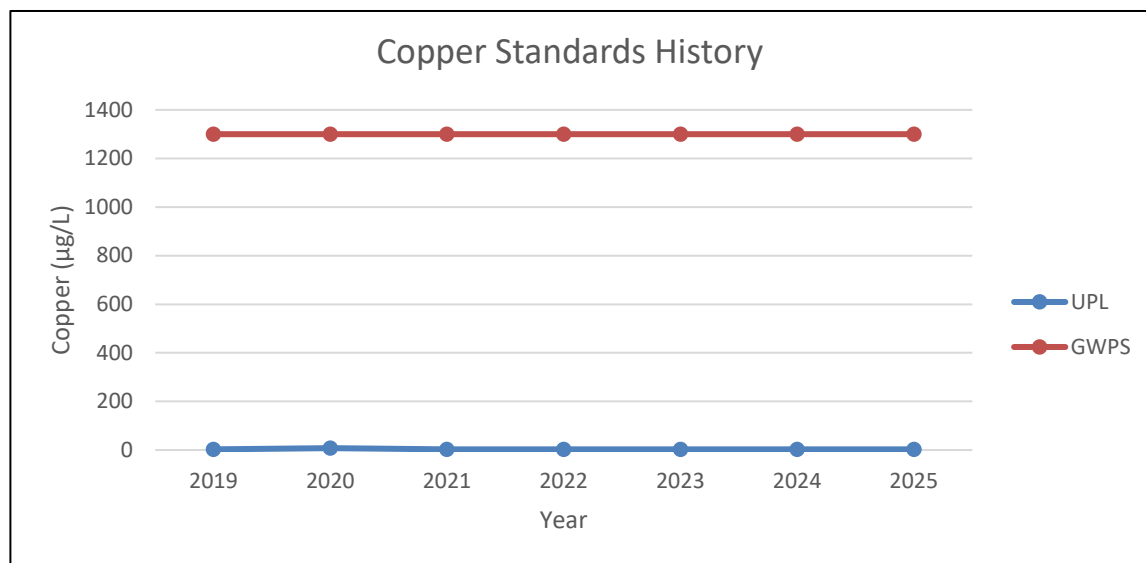
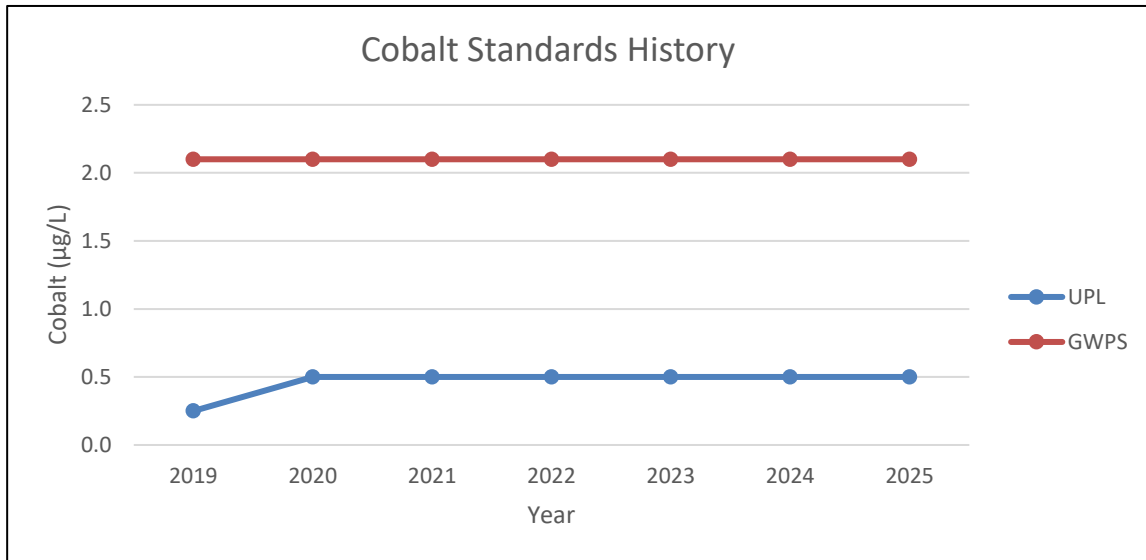
Lansing Generating Station CCR Landfill, Lansing, IA
Permit #03-SDP-05-01P



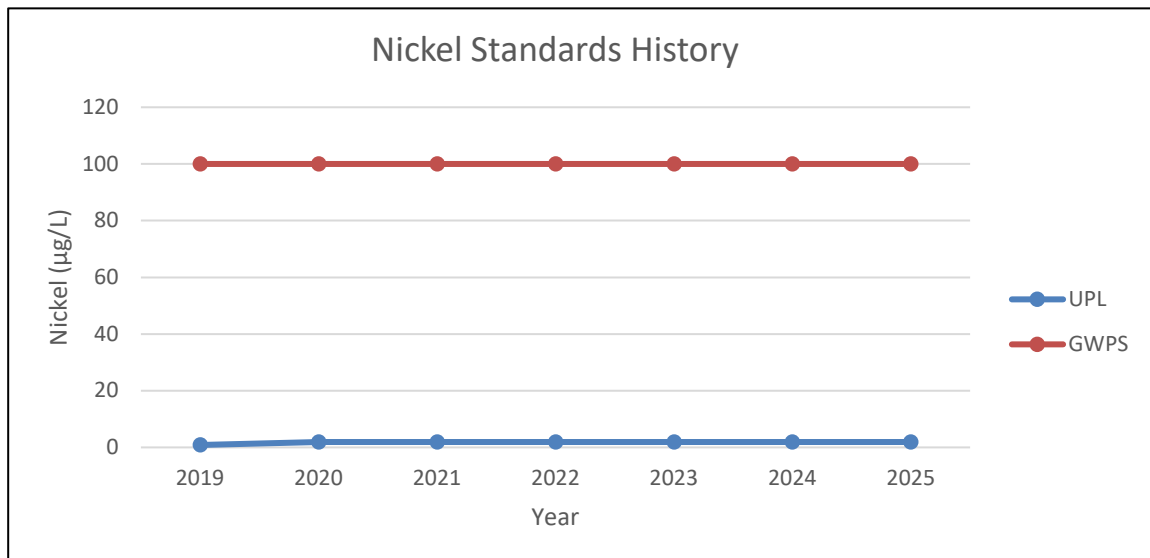
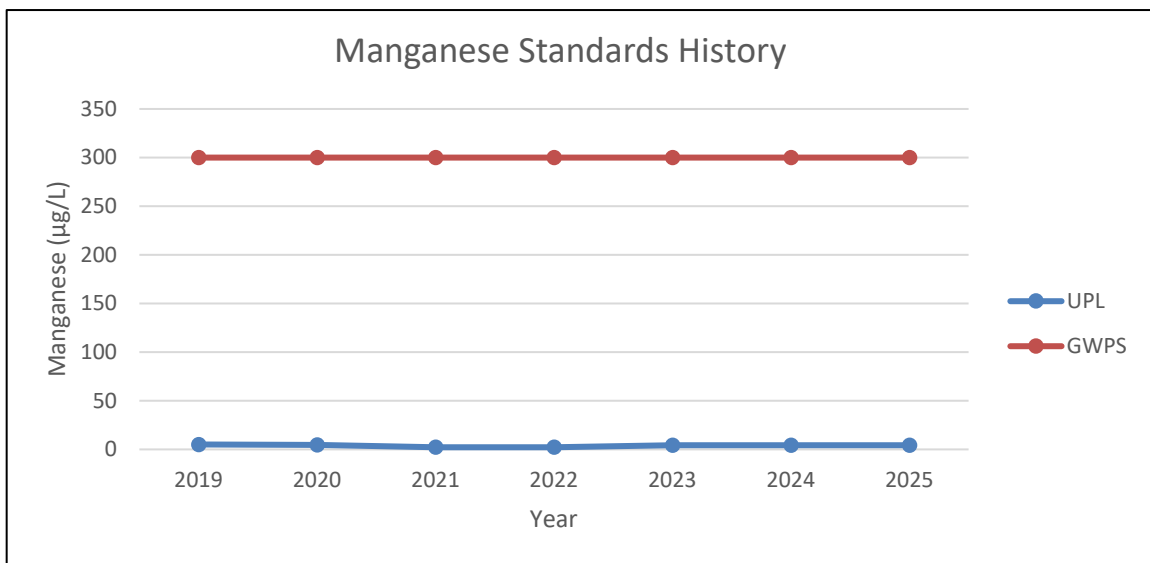
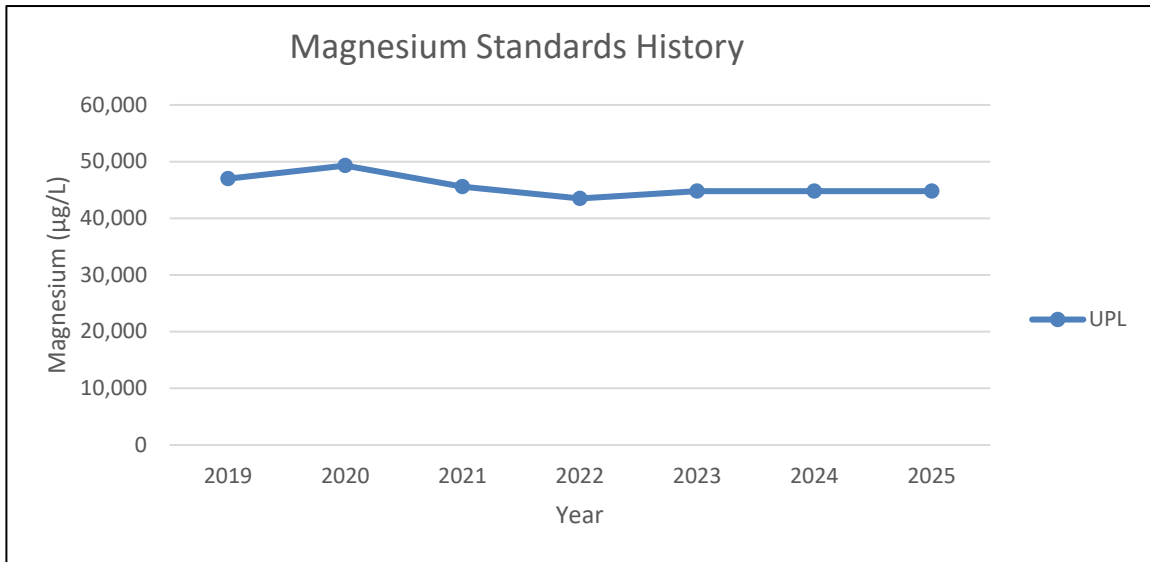
Lansing Generating Station CCR Landfill, Lansing, IA
Permit #03-SDP-05-01P



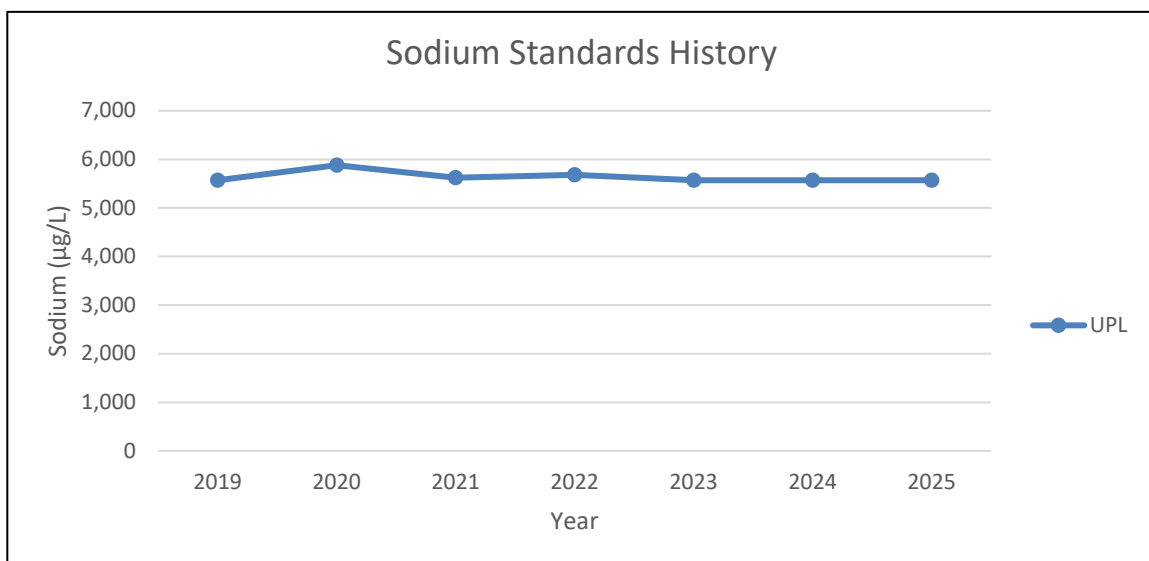
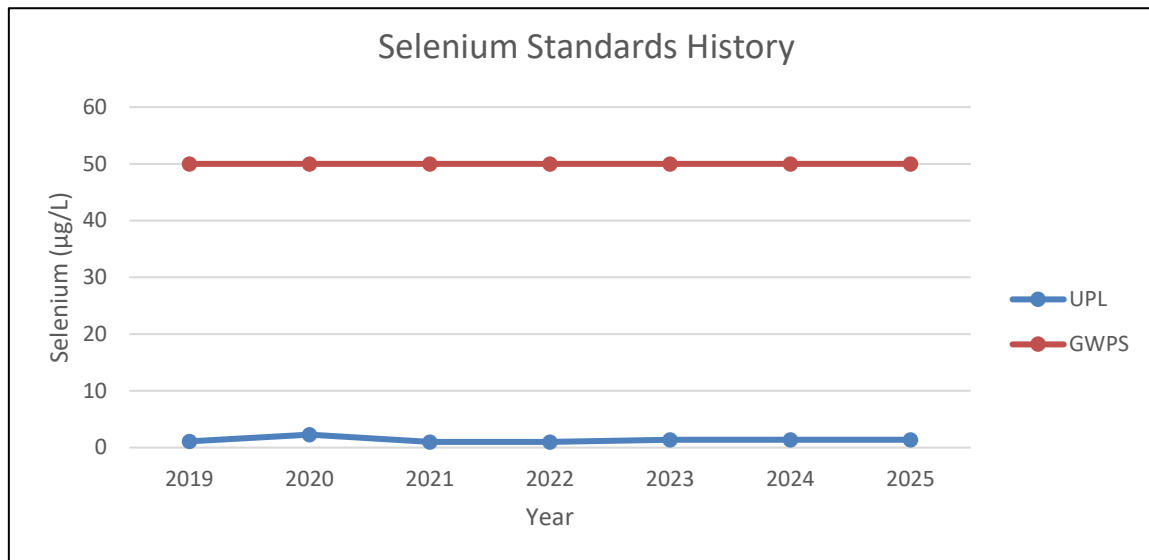
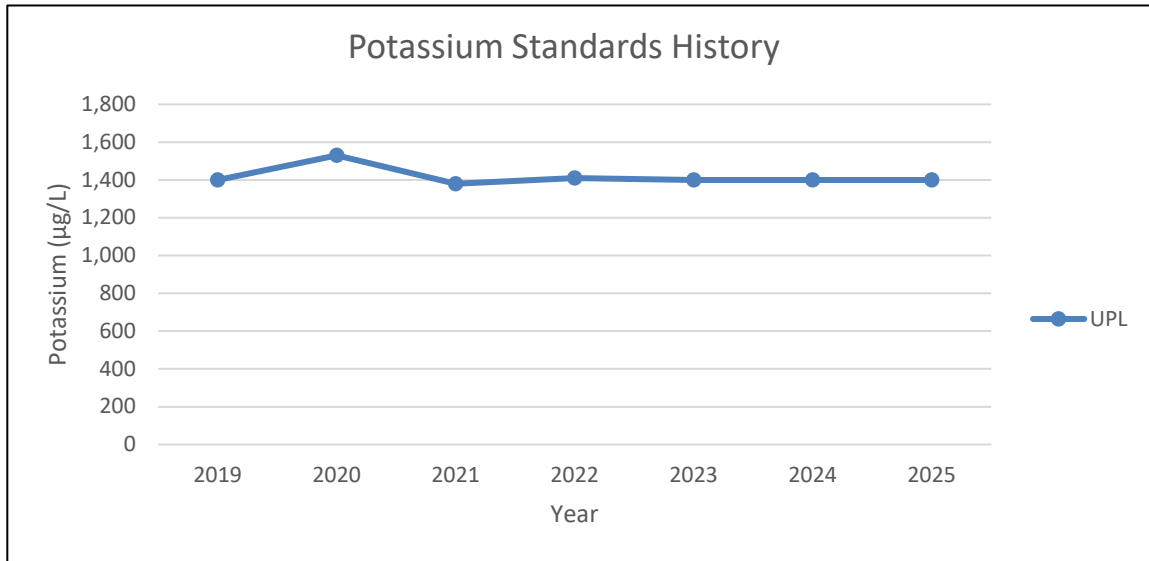
Lansing Generating Station CCR Landfill, Lansing, IA
Permit #03-SDP-05-01P



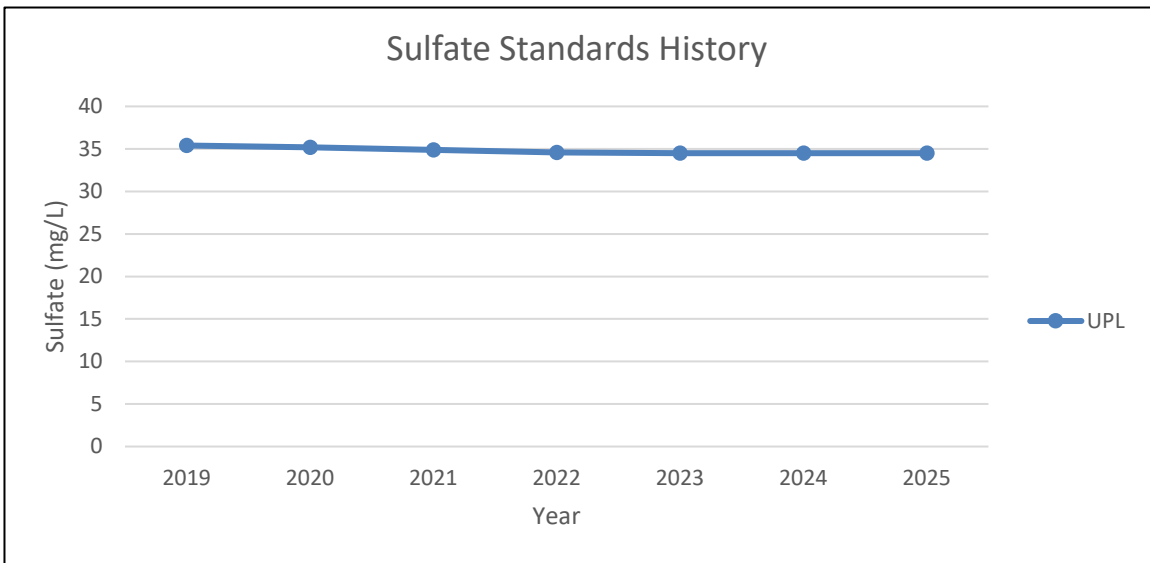
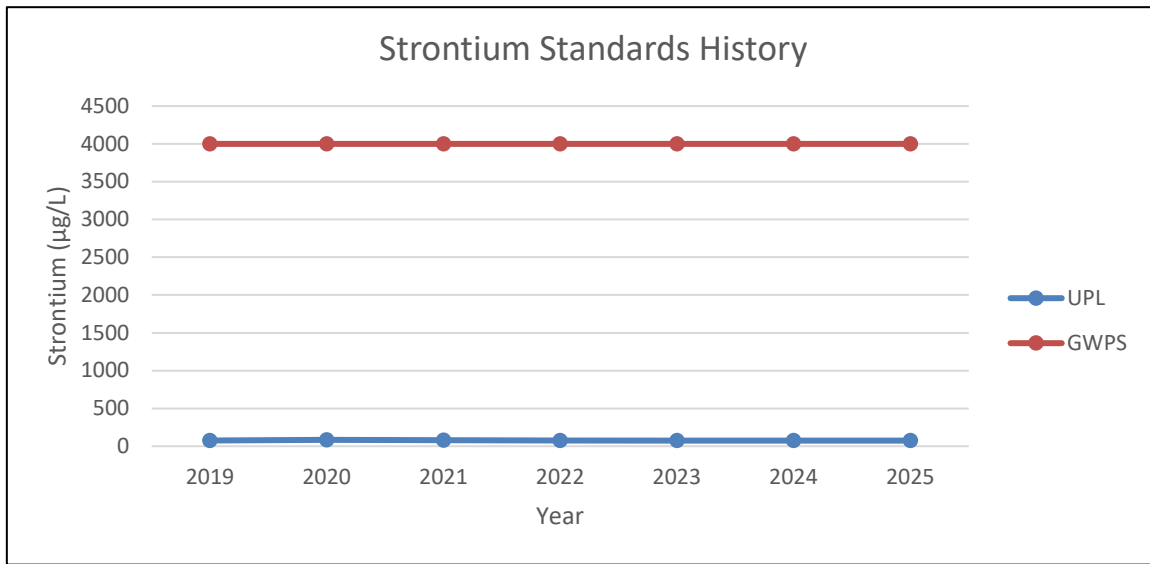
Lansing Generating Station CCR Landfill, Lansing, IA
Permit #03-SDP-05-01P



Lansing Generating Station CCR Landfill, Lansing, IA
Permit #03-SDP-05-01P



Lansing Generating Station CCR Landfill, Lansing, IA
Permit #03-SDP-05-01P





Appendix G

Annual Engineering Report

ANNUAL ENGINEERING REPORT – 2025 INTERSTATE POWER AND LIGHT COMPANY LANSING CLOSED LANDFILL PERMIT NO. 03-SDP-05-01C

On December 21, 2023, the Iowa Department of Natural Resources (DNR) issued a Closure Permit for the Coal Combustion Residue (CCR) Landfill at the former Interstate Power and Light Company (IPL) Lansing Generating Station (LAN). The final phase of closure at the LAN CCR landfill was completed in 2023, and the landfill no longer receives waste. This Annual Engineering Report was prepared to summarize the site's conformance and nonconformance with the closure permit and the approved plans and specifications. The Annual Engineering Report addresses the requirements in Special Provisions X.4 through X.6 and is based on observations made during the monthly post closure inspections of the CCR landfill required in Special Provision X.3.

MONTHLY INSPECTIONS

Monthly post-closure inspections covered by this report were completed by SCS Engineers (SCS) between December 6, 2024, November 6, 2025. Staff from SCS conducted monthly inspections under the supervision of Licensed Professional Engineer Eric J. Nelson, PE. A summary of the monthly inspections with respect to storm water diversion and drainage systems, vegetation, and final cover conditions is provided in the sections below. Copies of monthly inspection forms are provided in **Attachment A**.

Diversion and Drainage Systems

In accordance with Special Provision X.4, IPL has maintained the storm water diversion and drainage systems at the closed CCR landfill to provide run-on and run-off control of the 25-year, 24-hour rainfall event. IPL has maintained the required run-on and run-off capacity. However, the current reporting year represents the second growing season since landfill closure construction was completed in 2023. As such, monthly inspections identified multiple instances of erosion observed in the landfill drainage system, particularly the east swale along the bluff, where IPL continued work to stabilize the site into 2025. Efforts to stabilize the diversion and drainage system infrastructure were substantially completed by June 2025.

Vegetation

In accordance with Special Provision X.5, IPL has maintained the vegetation at the closed CCR landfill. Overall, vegetation conditions across the facility are good. IPL has addressed issues in vegetated cover identified during the monthly inspections throughout this second growing season following the completion of closure construction. Scarp erosion on the perimeter berm north of the landfill was observed during the September 2025 inspection. The erosion was observed as surficial and no concerns with the structural stability of the landfill were noted from the inspection. IPL continues to evaluate repair of this area along with maintenance and repair of vegetation issues identified during the monthly inspections that will continue into the next reporting period.

Final Cover

In accordance with Special Provision X.6, IPL has maintained the integrity and effectiveness of the final cover at the closed CCR landfill. With the exception of the drainage and vegetation issues noted above, the overall condition of the final cover is good and it is functioning as designed. Efforts to

maintain and repair issues with the final cover identified during the monthly inspections will continue into the next reporting period.

IOWA DNR INSPECTIONS

The most recent Iowa DNR inspection of the facility was performed on October 15, 2024. A copy of the Iowa DNR inspection report and IPL's follow-up email were included in the 2024 Annual Engineering Report. No further action is required in response to the Iowa DNR inspection at this time.

I:\25225070.00\Deliverables\2025 LAN AWQR\App G - Annual Engineering Report\251130_Lansing LF Annual Engineering Report 2025_DRAFT_v1.0.docx

Attachment A

Site Inspection Report Forms

Inspection & Monitoring Checklist
Closed CCR Unit
IPL - Lansing Generating Station - Lansing, IA

Date: 12/06/2024	
Type of Inspection/Monitoring: Monthly	
Weather: Cloudy 29.0°F	
CCR Area Inspected: Lansing Landfill	
Conditions Observed	Yes/No
Embankment Instability	
Sloughing or sliding	No
Bulging slope	No
Cracking	No
Scarps	No
Seepage areas	
Seepage	No
Increase in seepage volumes	No
Signs of piping or other internal erosion	No
Boils	No
Unusually wet and/or soft areas	No
Unusual melting of snow in winter	No
Subsidence and Erosion	
Subsidence, Sinkholes, or Depressions	No
Erosion – sheet / gulley	Yes
Erosion – wave action	No
Vegetation	
Grass height hinders inspection	No
Trees or woody vegetation	No
Unusual Thriving or distressed vegetation	No
Irregularity in vegetation condition	No
Water loving plants	No
Animal Inhabitation	
Animals burrows	No
Mounds of soil	No
Hoof tracks, rills or eroded pathways	No
Groundwater Monitoring Wells	
Wells unlocked	No
Well casing bent or leaning	No
Inspection Summary / Additional Comments	
Contractor completing repairs in east swale area. South/east swale has some erosion/bare soil areas still present to continue to monitor. Overall in good condition.	
Inspector Name: Colin Gloede	Signature: 

Inspection & Monitoring Checklist
Closed CCR Unit
IPL - Lansing Generating Station - Lansing, IA

		Date: 01/09/2025
Type of Inspection/Monitoring: Monthly		
Weather: Sunny 24.0°F		
CCR Area Inspected: Lansing Landfill		
Conditions Observed	Yes/No	If Yes, Provide Detailed Description
Embankment Instability		
Sloughing or sliding	No	No issues observed.
Bulging slope	No	
Cracking	No	
Scarps	No	
Seepage areas		
Seepage	No	Small area of standing water in north corner of west swale along access.
Increase in seepage volumes	No	
Signs of piping or other internal erosion	No	
Boils	No	
Unusually wet and/or soft areas	Yes	
Unusual melting of snow in winter	No	
Subsidence and Erosion		
Subsidence, Sinkholes, or Depressions	No	Erosion in southern swale along access road. East swale along bluff previously repaired and in good condition currently.
Erosion – sheet / gulley	Yes	
Erosion – wave action	No	
Vegetation		
Grass height hinders inspection	No	Frozen/dormant conditions currently. Overall vegetation in good condition.
Trees or woody vegetation	No	
Unusual Thriving or distressed vegetation	No	
Irregularity in vegetation condition	No	
Water loving plants	No	
Animal Inhabitation		
Animals burrows	No	None observed.
Mounds of soil	No	
Hoof tracks, rills or eroded pathways	No	
Groundwater Monitoring Wells		
Wells unlocked	No	Not all well checked during this inspection.
Well casing bent or leaning	No	
Inspection Summary / Additional Comments		
Small area of standing water observed. Erosion in south swale along access road. Eastern swale along bluff repairs currently in good condition. No major concerns at this time.		
Inspector Name: Colin Gloede	Signature: 	

Inspection & Monitoring Checklist
Closed CCR Unit
IPL - Lansing Generating Station - Lansing, IA

Date: 02/05/2025	
Type of Inspection/Monitoring: Monthly	
Weather: Cloudy 23.0°F	
CCR Area Inspected: Lansing Landfill	
Conditions Observed	Yes/No
If Yes, Provide Detailed Description	
Embankment Instability	
Sloughing or sliding	No
Bulging slope	No
Cracking	No
Scarps	No
Seepage areas	
Seepage	No
Increase in seepage volumes	No
Signs of piping or other internal erosion	No
Boils	No
Unusually wet and/or soft areas	No
Unusual melting of snow in winter	No
Subsidence and Erosion	
Subsidence, Sinkholes, or Depressions	No
Erosion – sheet / gulley	Yes
Erosion – wave action	No
Vegetation	
Grass height hinders inspection	No
Trees or woody vegetation	No
Unusual Thriving or distressed vegetation	No
Irregularity in vegetation condition	No
Water loving plants	No
Animal Inhabitation	
Animals burrows	No
Mounds of soil	No
Hoof tracks, rills or eroded pathways	No
Groundwater Monitoring Wells	
Wells unlocked	No
Well casing bent or leaning	No
Inspection Summary / Additional Comments	
Erosion present in southern perimeter swale along access road. Some equipment tracking disturbance along east slope along bluff from repairs still present. Overall site in good condition, no immediate areas of concern.	
Inspector Name: Colin Gloede	Signature: 

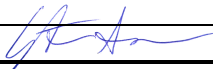
Inspection & Monitoring Checklist
Closed CCR Unit
IPL - Lansing Generating Station - Lansing, IA

Date: 03/03/2025	
Type of Inspection/Monitoring: Monthly	
Weather: Cloudy 44.0°F	
CCR Area Inspected: Lansing Landfill	
Conditions Observed	Yes/No
If Yes, Provide Detailed Description	
Embankment Instability	
Sloughing or sliding	No
Bulging slope	No
Cracking	No
Scarps	No
Seepage areas	
Seepage	No
Small amount of standing water in northwest corner of perimeter swale. Soft/wet near access road by east swale along bluff. Recent snow melt/rain event.	
Increase in seepage volumes	No
Signs of piping or other internal erosion	No
Boils	No
Unusually wet and/or soft areas	Yes
Unusual melting of snow in winter	No
Subsidence and Erosion	
Subsidence, Sinkholes, or Depressions	No
Minor erosion starting in the south drainage ditch. East swale along bluff repair area holding up well. Some erosion mat rolled up on itself but no erosion observed.	
Erosion – sheet / gulley	Yes
Erosion – wave action	No
Vegetation	
Grass height hinders inspection	No
Trees or woody vegetation	No
Unusual Thriving or distressed vegetation	No
Irregularity in vegetation condition	No
Water loving plants	No
Animal Inhabitation	
Animals burrows	No
Mounds of soil	No
Hoof tracks, rills or eroded pathways	Yes
Groundwater Monitoring Wells	
Wells unlocked	No
Well casing bent or leaning	No
Not all monitoring wells inspected as part of inspection.	
Inspection Summary / Additional Comments	
Erosion in south swale area still present from previous inspections. East swale repair area holding up well overall, some erosion mat needs replacement/re-stapling. No major concerns.	
Inspector Name: Colin Gloede	Signature: 

Inspection & Monitoring Checklist

Closed CCR Unit

IPL - Lansing Generating Station - Lansing, IA

		Date: 04/02/2025
Type of Inspection/Monitoring: Monthly		
Weather: Cloudy 44.0°F		
CCR Area Inspected: Lansing Landfill		
Conditions Observed	Yes/No	If Yes, Provide Detailed Description
Embankment Instability		
Sloughing or sliding	No	No issues observed.
Bulging slope	No	
Cracking	No	
Scarps	No	
Seepage areas		
Seepage	No	Recent rainfall event. Areas of standing water in areas of swale and low areas at toe of slope.
Increase in seepage volumes	No	
Signs of piping or other internal erosion	No	
Boils	No	
Unusually wet and/or soft areas	Yes	
Unusual melting of snow in winter	No	
Subsidence and Erosion		
Subsidence, Sinkholes, or Depressions	No	Erosion in bare soil area in southeastern swale. No issues observed with erosion in east swale along bluff repair area. Some minor erosion observed on slope north of landfill road (not part of final cover area) and would continue to monitor.
Erosion – sheet / gulley	Yes	
Erosion – wave action	No	
Vegetation		
Grass height hinders inspection	No	Some exposed soil areas present. Vegetation establishment in east swale along bluff repair area yet to come in; erosion mat in this area needs to be addressed.
Trees or woody vegetation	No	
Unusual Thriving or distressed vegetation	No	
Irregularity in vegetation condition	No	
Water loving plants	No	
Animal Inhabitation		
Animals burrows	No	Animal tracks and droppings observed.
Mounds of soil	No	
Hoof tracks, rills or eroded pathways	Yes	
Groundwater Monitoring Wells		
Wells unlocked	No	Wells sampled as part of semi-annual event.
Well casing bent or leaning	No	
Inspection Summary / Additional Comments		
Erosion in bare soil area in southeastern swale. Wet conditions with recent rainfall and ponded water in low areas. Erosion mat in east swale along bluff repair area needs to be addressed.		
Inspector Name: Ethan Schaefer		Signature: 

Inspection & Monitoring Checklist

Closed CCR Unit

IPL - Lansing Generating Station - Lansing, IA

		Date: 05/02/2025
Type of Inspection/Monitoring: Monthly		
Weather: Cloudy 52.0°F		
CCR Area Inspected: Lansing Landfill		
Conditions Observed	Yes/No	If Yes, Provide Detailed Description
Embankment Instability		
Sloughing or sliding	No	No issues observed.
Bulging slope	No	
Cracking	No	
Scarps	No	
Seepage areas		
Seepage	No	Due to recent rainfall lots of soft and wet areas. Some areas of standing water.
Increase in seepage volumes	No	
Signs of piping or other internal erosion	No	
Boils	No	
Unusually wet and/or soft areas	Yes	
Unusual melting of snow in winter	No	
Subsidence and Erosion		
Subsidence, Sinkholes, or Depressions	No	Erosion in bare soil in southeastern perimeter ditch is a continuing issue.
Erosion – sheet / gulley	Yes	
Erosion – wave action	No	
Vegetation		
Grass height hinders inspection	No	Vegetation growth starting in previously seeded areas with erosion mat in good condition. Some areas of bare soil with erosion still present.
Trees or woody vegetation	No	
Unusual Thriving or distressed vegetation	No	
Irregularity in vegetation condition	No	
Water loving plants	No	
Animal Inhabitation		
Animals burrows	No	Animal droppings noted.
Mounds of soil	No	
Hoof tracks, rills or eroded pathways	Yes	
Groundwater Monitoring Wells		
Wells unlocked	No	Did not inspection monitoring wells as part of inspection.
Well casing bent or leaning	No	
Inspection Summary / Additional Comments		
Overall the landfill is in good condition and similar to what is typically seen after rain events. The rock check dams, riprap, and erosion mats are holding up well and vegetation growth is starting. Erosion in southeastern ditch continues.		
Inspector Name: Bri Salome	Signature: 	

Inspection & Monitoring Checklist
Closed CCR Unit
IPL - Lansing Generating Station - Lansing, IA

Date: 06/06/2025	
Type of Inspection/Monitoring: Monthly	
Weather: Cloudy 68.0°F	
CCR Area Inspected: Lansing Landfill	
Conditions Observed	Yes/No If Yes, Provide Detailed Description
Embankment Instability	
Sloughing or sliding	No No issues observed.
Bulging slope	No
Cracking	No
Scarps	No
Seepage areas	
Seepage	No No issues observed.
Increase in seepage volumes	No
Signs of piping or other internal erosion	No
Boils	No
Unusually wet and/or soft areas	No
Unusual melting of snow in winter	No
Subsidence and Erosion	
Subsidence, Sinkholes, or Depressions	No No issues observed. No erosion issues observed and previous areas noted appear to have been addressed.
Erosion – sheet / gully	No
Erosion – wave action	No
Vegetation	
Grass height hinders inspection	No Vegetation growth/establishment throughout the previously seeded areas. Overall vegetation coverage on site in good condition. Vegetation getting tall.
Trees or woody vegetation	No
Unusual Thriving or distressed vegetation	No
Irregularity in vegetation condition	No
Water loving plants	No
Animal Inhabitation	
Animals burrows	No No issues observed.
Mounds of soil	No
Hoof tracks, rills or eroded pathways	No
Groundwater Monitoring Wells	
Wells unlocked	No No issues observed. Did not inspect all monitoring wells during inspection.
Well casing bent or leaning	No
Inspection Summary / Additional Comments	
No areas of concern at this time. Overall site in good condition. Vegetation growth/establishment throughout the landfill area based on inspection. Mowing could be needed soon.	
Inspector Name: Colin Gloede	Signature: 

Inspection & Monitoring Checklist
Closed CCR Unit
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Date: 07/16/2025		
Type of Inspection/Monitoring: Monthly		
Weather: Rainy 82.0°F		
CCR Area Inspected: Lansing Landfill		
Conditions Observed	Yes/No	If Yes, Provide Detailed Description
Embankment Instability		
Sloughing or sliding	No	No issues observed.
Bulging slope	No	
Cracking	No	
Scarps	No	
Seepage areas		
Seepage	No	No issues observed.
Increase in seepage volumes	No	
Signs of piping or other internal erosion	No	
Boils	No	
Unusually wet and/or soft areas	No	
Unusual melting of snow in winter	No	
Subsidence and Erosion		
Subsidence, Sinkholes, or Depressions	No	No issues observed.
Erosion – sheet / gully	No	
Erosion – wave action	No	
Vegetation		
Grass height hinders inspection	Yes	Vegetation is very high limiting inspection and could be mowed.
Trees or woody vegetation	No	
Unusual Thriving or distressed vegetation	No	
Irregularity in vegetation condition	No	
Water loving plants	No	
Animal Inhabitation		
Animals burrows	No	No issues observed.
Mounds of soil	No	
Hoof tracks, rills or eroded pathways	No	
Groundwater Monitoring Wells		
Wells unlocked	No	Did not inspect all monitoring wells during inspection.
Well casing bent or leaning	No	
Inspection Summary / Additional Comments		
Landfill area looks to be in very good condition. Vegetation could be cut as areas pretty overgrown.		
Inspector Name: Colin Gloede	Signature: 	

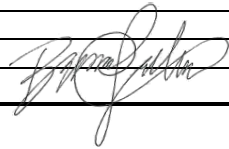
Inspection & Monitoring Checklist
Closed CCR Unit
IPL - Lansing Generating Station - Lansing, IA

		Date: 08/06/2025
Type of Inspection/Monitoring: Monthly		
Weather: Partially Sunny 76.0°F		
CCR Area Inspected: Lansing Landfill		
Conditions Observed	Yes/No	If Yes, Provide Detailed Description
Embankment Instability		
Sloughing or sliding	No	No issues observed. Landfill area in good condition. Slope area east of the landfill overall in good condition with no immediate concerns.
Bulging slope	No	
Cracking	No	
Scarps	No	
Seepage areas		
Seepage	No	No issues observed.
Increase in seepage volumes	No	
Signs of piping or other internal erosion	No	
Boils		
Unusually wet and/or soft areas	No	
Unusual melting of snow in winter	No	
Subsidence and Erosion		
Subsidence, Sinkholes, or Depressions	No	No erosion areas on the Landfill final cover areas observed. Some disturbance from recent mowing event but nothing major. Slope area east of the Landfill has some erosion but nothing concerning at this time.
Erosion – sheet / gully	No	
Erosion – wave action	No	
Vegetation		
Grass height hinders inspection	No	Areas well vegetated and site was recently mowed.
Trees or woody vegetation	No	
Unusual Thriving or distressed vegetation	No	
Irregularity in vegetation condition	No	
Water loving plants	No	
Animal Inhabitation		
Animals burrows	No	No observations during inspection.
Mounds of soil	No	
Hoof tracks, rills or eroded pathways	No	
Groundwater Monitoring Wells		
Wells unlocked	No	Did not inspect all monitoring wells during the inspection.
Well casing bent or leaning	No	
Inspection Summary / Additional Comments		
No concerns/issues noted. Landfill and surrounding perimeter areas all in good condition.		
Inspector Name: Audrey Wallander	Signature: 	

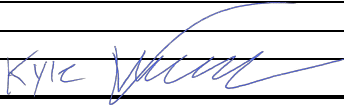
Inspection & Monitoring Checklist
Closed CCR Unit
IPL - Lansing Generating Station - Lansing, IA

		Date: 09/16/2025
Type of Inspection/Monitoring: Monthly		
Weather: Partially Cloudy 83.0°F		
CCR Area Inspected: Lansing Landfill		
Conditions Observed	Yes/No	If Yes, Provide Detailed Description
Embankment Instability		
Sloughing or sliding	No	Final cover area in good condition. Scarp erosion area ~15 ft wide observed on perimeter slope north of landfill. No seeps, no concentrated surface flow from up slope, and erosion occurred at bottom of root line. No stability concerns at this time.
Bulging slope	No	
Cracking	No	
Scarps	Yes	
Seepage areas		
Seepage	No	Nothing to note. Structurally integrity overall good. No areas of concern regarding seepage.
Increase in seepage volumes	No	
Signs of piping or other internal erosion	No	
Boils	No	
Unusually wet and/or soft areas	No	
Unusual melting of snow in winter	No	
Subsidence and Erosion		
Subsidence, Sinkholes, or Depressions	No	Along the top ridgeline of the landfill, some of the diversion berms, and on the spines areas of exposed soil were observed. Overall they were minor with the exception of a larger area at southeast end.
Erosion – sheet / gully	No	
Erosion – wave action	No	
Vegetation		
Grass height hinders inspection	Yes	Areas of very dense vegetation around the check dams and flume inlets. In these areas apparent thicker stemmed vegetation was beginning to grow. Site was actively being mowed at time of inspection. Area of heavy dead vegetation buildup present.
Trees or woody vegetation	Yes	
Unusual Thriving or distressed vegetation	No	
Irregularity in vegetation condition	No	
Water loving plants	No	
Animal Inhabitation		
Animals burrows	No	Found animal droppings on top of landfill but no animal impacts to cover area observed.
Mounds of soil	No	
Hoof tracks, rills or eroded pathways	No	
Groundwater Monitoring Wells		
Wells unlocked	No	Wells look good. Did not inspect all site monitoring wells during inspection.
Well casing bent or leaning	No	

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Inspection Summary / Additional Comments	
Overall, the landfill is in good condition. Minor areas of exposed soil, potentially woody vegetation, and some mounded dead vegetation. Energy dissipator previous erosion repair area is in good condition. Scarp erosion area is most urgent concern.	
Inspector Name: Bri Salome	Signature: 

Inspection & Monitoring Checklist
Closed CCR Unit
IPL - Lansing Generating Station - Lansing, IA

		Date: 10/09/2025
Type of Inspection/Monitoring: Monthly		
Weather: Sunny 71.0°F		
CCR Area Inspected: Lansing Landfill		
Conditions Observed	Yes/No	If Yes, Provide Detailed Description
Embankment Instability		
Sloughing or sliding	No	On the slope north of the landfill, the erosion scarp area is still present but appears relatively unchanged from the previous inspection.
Bulging slope	No	
Cracking	No	
Scarps	Yes	
Seepage areas		
Seepage	No	No issues observed.
Increase in seepage volumes	No	
Signs of piping or other internal erosion	No	
Boils	No	
Unusually wet and/or soft areas	No	
Unusual melting of snow in winter	No	
Subsidence and Erosion		
Subsidence, Sinkholes, or Depressions	No	Erosion of some gravel along bluff side of the access road up to the landfill area.
Erosion – sheet / gulley	Yes	
Erosion – wave action	No	
Vegetation		
Grass height hinders inspection	No	Overall the vegetation growth is in good condition. Small areas of thinning vegetation in areas but site was recently mowed and leading to fall dormancy. Keep watch in the future.
Trees or woody vegetation	No	
Unusual Thriving or distressed vegetation	No	
Irregularity in vegetation condition	No	
Water loving plants	No	
Animal Inhabitation		
Animals burrows	Yes	Some animal activity of minimal concern. Burrows observed in the diversion berm.
Mounds of soil	No	
Hoof tracks, rills or eroded pathways	Yes	
Groundwater Monitoring Wells		
Wells unlocked	No	Wells inspected during the groundwater monitoring event.
Well casing bent or leaning	No	
Inspection Summary / Additional Comments		
Overall the site is in good condition. Some road area erosion and the scarp erosion area is still present but no immediate issues to be addressed.		
Inspector Name: Kyle Vernon		Signature: 

Inspection & Monitoring Checklist

Closed CCR Unit

IPL - Lansing Generating Station - Lansing, IA

		Date: 11/06/2025
Type of Inspection/Monitoring: Monthly		
Weather: Cloudy 50.0°F		
CCR Area Inspected: Lansing Landfill		
Conditions Observed	Yes/No	If Yes, Provide Detailed Description
Embankment Instability		
Sloughing or sliding	No	On the slope north of the landfill, the erosion scarp area is still present but no apparent changes from the previous inspection.
Bulging slope	No	
Cracking	No	
Scarps	Yes	
Seepage areas		
Seepage	No	No issues observed.
Increase in seepage volumes	No	
Signs of piping or other internal erosion	No	
Boils	No	
Unusually wet and/or soft areas	No	
Unusual melting of snow in winter	No	
Subsidence and Erosion		
Subsidence, Sinkholes, or Depressions	No	Erosion of some gravel along bluff side of the access road up to the landfill area. One area of slightly deeper erosion noted in the diversion flow line to continue to monitor.
Erosion – sheet / gulley	Yes	
Erosion – wave action	No	
Vegetation		
Grass height hinders inspection	No	Overall the vegetation growth is in good condition. Small areas of thinning vegetation in areas that were present in previous inspection. Keep watch for changes.
Trees or woody vegetation	No	
Unusual Thriving or distressed vegetation	No	
Irregularity in vegetation condition	No	
Water loving plants	No	
Animal Inhabitation		
Animals burrows	Yes	Signs of several deer. Some animal activity in the diversion berm area.
Mounds of soil	No	
Hoof tracks, rills or eroded pathways	Yes	
Groundwater Monitoring Wells		
Wells unlocked	No	No issues observed. Did not inspect all monitoring wells.
Well casing bent or leaning	No	
Inspection Summary / Additional Comments		
Overall the site is in good condition. Some road area erosion and the scarp erosion area is still present but no immediate issues to be addressed.		
Inspector Name: Dillon Krupp		Signature: 