2022 Annual Groundwater Monitoring and Corrective Action Report

Lansing Generating Station
Lansing, Iowa

Prepared for:

Alliant Energy

SCS ENGINEERS

25222070.00 | January 31, 2023

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OVERVIEW OF CURRENT STATUS

Lansing Generating Station, Landfill, and Upper Ash Pond
2022 Annual Report

In accordance with §257.90(e)(6), this section at the beginning of the annual report provides an overview of the current status of groundwater monitoring and corrective action programs for the coal combustion residual (CCR) unit. The groundwater monitoring system at the Lansing Generating Station (LAN) is a multiunit system that includes the Landfill and Upper Ash Pond. Supporting information is provided in the text of the annual report.

Category	Rule Requirement	Site Status
Monitoring Status – Start of Year	(i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Assessment
Monitoring Status – End of Year	(ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Assessment
Statistically Significant Increases (SSIs)	(iii) If it was determined that there was an SSI over background for one or more constituents listed in Appendix III to this part pursuant to §257.94(e):	
	(A) Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase; and	SSIs initially determined on January 15, 2018, based on October 2017 monitoring results. In 2022, SSIs identified for semiannual events for compliance wells at waste boundary included the following; see Table 5 for complete results. October 2021 Boron: MW-301, MW-302, MW-303 Calcium: MW-302 Chloride: MW-301, MW-302, MW-303 Field pH: MW-301 Sulfate: MW-301 Total Dissolved Solids: MW-302 April 2022 Boron: MW-301, MW-302, MW-303

Category	Rule Requirement	Site Status
		Calcium: MW-302 Chloride: MW-301, MW-302, MW-303 Field pH: MW-301, MW-303 Sulfate: MW-301, MW-303 Total Dissolved Solids: MW-302
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	July 16, 2018
Statistically Significant Levels (SSL) Above Groundwater Protection Standard (GPS)	(iv) If it was determined that there was an SSL above the GPS for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g) include all of the following:	
	(A) Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase;	Arsenic: MW-302 Determined to be at SSL above GPS on January 15, 2019. In 2022, concentrations exceeding the GPS detected in April event. Molybdenum: MW-304A Determined to be at SSL above GPS on June 7, 2021. No SSLs at compliance wells.
	(B) Provide the date when the Assessment of Corrective Measures (ACM) was initiated for the CCR unit;	Arsenic: April 15, 2019 Molybdenum: No ACM required.
	(C) Provide the date when the public meeting was held for the ACM for the CCR unit; and	October 12, 2020
	(D) Provide the date when the ACM was completed for the CCR unit.	September 12, 2019 – Original ACM November 25, 2020 – Addendum No. 1 to ACM
Selection of Remedy (SOR)	(v) Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection; and	SOR is in progress
Corrective Action	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Not applicable - SOR is in progress

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1.0 INTRODUCTION

This 2022 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the Coal Combustion Residuals (CCR) Rule [40 Code of Federal Regulations (CFR) 257.50-107]. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e). The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2022 Annual Groundwater Monitoring and Corrective Action Report for the CCR Units. The Lansing Generating Station (LAN) site location is shown on **Figure 1**.

This report covers the period of groundwater monitoring from January 1, 2022, through December 31, 2022.

The groundwater monitoring system at the LAN is a multiunit system that includes the following two existing CCR units:

- LAN Landfill
- LAN Upper Ash Pond

The groundwater system is designed to detect monitored constituents at the waste boundary of the facility as required by 40 CFR 257.91(d). The groundwater monitoring system currently consists of one upgradient monitoring well, three downgradient monitoring wells at the waste boundary, and ten additional downgradient wells. Four of the additional 10 downgradient wells were installed as delineation monitoring wells, 4 were installed as deeper delineation piezometers, and 2 were installed as groundwater elevation monitoring points only (**Figure 2** and **Table 1**).

The ongoing groundwater investigation has provided evidence that the Ash Pond and Landfill are not the source of the arsenic GPS exceedances in monitoring well MW-302. An amendment to the ACM is being prepared to provide a summary of that information and a revision of the site conceptual model. The revised ACM will include a no action alternative to be used as the basis for completing the SOR.

2.0 BACKGROUND

To provide context for the annual report, the following background information is provided in this section of the report, prior to the annual report sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

2.1.1 Regional Information

The uppermost bedrock unit in the site area is the Jordan aquifer, which is the lower Cambrian - Ordovician sandstone interbedded with dolostone. The thickness of the Jordan aquifer varies from 50 to more than 120 feet thick in most areas of Allamakee County. Underlying the Cambrian-Ordovician sandstone are the Cambrian confining beds comprised of dolostone, siltstone, and shale. The Cambrian confining beds overlie the Dresbach Aquifer, comprised of shaly sandstone. A summary of the regional hydrogeologic stratigraphy is provided in **Appendix A**. A regional bedrock

surface hydrogeologic map, hydrogeologic cross sections, and a contour map of the top of the Cambrian-Ordovician sandstone in northeastern Iowa are also included in **Appendix A**. The bedrock surface elevation is highly variable due to erosion.

The Mississippi River and associated alluvial aquifers are a major source of surface water and shallow groundwater in the area. The alluvial aquifer is up to 60 feet thick within the deeply incised valley where LAN is located, but is thin to absent on the surrounding bluffs and hilltops. The lower Cambrian-Ordovician sandstone unit (Jordan sandstone) is the shallowest regional bedrock aquifer. The October 1989 Iowa Department of Natural Resources (IDNR) Water Atlas No. 8 states that the Jordan aquifer is commonly the source of municipal and industrial high-capacity wells in the region. A summary of the regional groundwater units in included in **Appendix A.**

A map showing the regional potentiometric surface in the Jordan sandstone is presented in **Appendix A**. This map shows the potentiometric surface near the site area as sloping to the east-northeast. The flow direction in the shallow unconsolidated aquifer at Lansing is generally to the north (**Appendix A**). The flow in the Jordan sandstone immediately beneath the landfill and ponds is also likely to the north due to the control of incoming groundwater from the bluffs flanking the valley with ultimate discharge to the Mississippi River.

2.1.2 Site Information

For the purposes of groundwater monitoring in accordance with section 257.91 of the CCR Rule, the shallow alluvial aquifer in combination with the hydraulically connected lower Cambrian-Ordovician sandstone unit (Jordan sandstone) is considered to be the uppermost aquifer unit at the Lansing site. The upgradient background monitoring well total boring depth was 93.5 feet. The bedrock at this location is overlain by 37 feet of unconsolidated material and the water table occurs in the bedrock.

Monitoring wells MW-301 through MW-309 and piezometers MW-302A, MW-304A, MW-306A, and MW-307A are installed in the shallow alluvial aquifer and in the hydraulically connected lower Cambrian-Ordovician sandstone unit (Jordan sandstone), which is the uppermost aquifer unit at the Lansing site. The unconsolidated materials at these well locations are generally sand, silt, with minor clay and gravel. The total boring depths of monitoring wells MW-301 through MW-309 are between 16 and 27 feet, and bedrock was not encountered in any of the monitoring well borings. The total depths of piezometers MW-302A, MW-304A, and MW-307A are between 50 and 56 feet. Background monitoring well MW-6 is screened within the bedrock unit because the water table occurs within the bedrock at this location. Boring logs, well construction, and development documentation for all monitoring wells are included in **Appendix B.**

To evaluate groundwater flow directions and rates, groundwater flow maps were developed for two depth intervals within the aquifer. The water table maps are based on monitoring wells installed at or near the water table. The potentiometric surface maps are based on the deeper "A" wells.

The water table and potentiometric surface contours and groundwater flow patterns based on April 2022 water level measurements are shown on **Figures 3** and **4**. The water table and potentiometric surface contours and groundwater flow patterns for the October 2022 water level measurements are shown on **Figures 5** and **6**. The groundwater elevation data for the CCR monitoring wells are provided in **Table 3**, along with additional groundwater elevation data for the wells in the state monitoring program for the CCR landfill. Estimated horizontal gradients and flow velocities are provided in **Table 4A**. Calculated vertical gradients for the nested wells are provided in **Table 4B**.

2.2 CCR RULE MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of one upgradient (background) monitoring well and three downgradient monitoring wells installed at the waste boundary (**Table 1** and **Figure 2**). The background well is MW-6, and the three downgradient compliance wells at the waste boundary include MW-301, MW-302, and MW-303. Four additional water table wells (MW-304, MW-305, MW-306, and MW-307) and four deeper piezometers (MW-302A, MW-304A, MW-306A, and MW-307A) were added as delineation wells to support the evaluation of the nature and extent of groundwater impacts and characterization of the site conditions. Two additional water table wells (MW-308 and MW-309) were installed to provide information on horizontal groundwater flow, and groundwater sample collection is not currently planned at these two wells.

Monitoring well nest MW-307/MW-307A was installed in 2021 at the waste boundary, at a location between the Upper Ash Pond and downgradient compliance well MW-302. Installation of a compliance well at this location was not feasible when the monitoring system was originally installed in 2015.

3.0 § 257.90(E) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. *For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:*

3.1 §257.90(E)(1) SITE MAP

A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

A map of the site location is provided on **Figure 1**. A map with an aerial image showing the CCR units and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided on **Figure 2**.

3.2 §257.90(E)(2) MONITORING SYSTEM CHANGES

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

No changes to the monitoring system were made in 2022.

3.3 §257.90(E)(3) SUMMARY OF SAMPLING EVENTS

In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

Two groundwater sampling events were completed in 2022. A summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the assessment monitoring programs is included in Table 2.

The semiannual assessment monitoring events for the entire monitoring network were completed in April and October 2022. In April and October 2022, all wells were sampled for Appendix III and Appendix IV parameters, and additional parameters chosen to assist with the Selection of Remedy (SOR) process. Parameters included dissolved and total metals, general water quality parameters, and parameters used to evaluate feasibility of monitored natural attenuation (MNA). Samples were also analyzed for total and dissolved molybdenum to support the evaluation of potential sources of molybdenum detected at concentrations exceeding the Groundwater Protection Standards (GPS) in piezometer MW-304A.

The validation and evaluation of the April 2022 monitoring event data was completed and transmitted to IPL on July 29, 2022. The validation and evaluation of the October 2022 monitoring event data was in progress at the end of 2022 and will be transmitted to IPL in 2023; therefore, the October 2022 monitoring results will be included in the 2023 annual report. The October 2022 groundwater elevation data is included in this report.

The April 2022 monitoring results are summarized in Table 5. Field parameter results for the April 2022 sampling event is provided in Table 6. The analytical report for April 2022 is provided in Appendix C. Historical results for each monitoring well through April 2022 are summarized in Appendix D.

3.4 § 257.90(E)(4) MONITORING TRANSITION NARRATIVE

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels);

There was no monitoring program transition in 2022.

The LAN monitoring program transitioned to assessment monitoring beginning in April 2018 and assessment monitoring continued through 2022. An Assessment of Corrective Measures (ACM) was initiated for the LAN CCR units in April 2019 and completed in September 2019. Addendum No. 1 to the ACM was completed in November 2020. The SOR is in progress. The ACM was initiated in response to the detection of arsenic at SSLs exceeding the GPS. Assessment monitoring continued during the ACM and will continue during the SOR.

The evaluation of the October 2021 semiannual monitoring event was completed in February 2022. Evaluation of the April 2022 semiannual monitoring event was completed in July 2022.

In 2022, Appendix IV parameters arsenic and molybdenum were detected at concentrations above the GPS values established under §257.95(h). As shown in **Table 5**, several Appendix III and Appendix IV parameters continue to be detected at levels that represent statistically significant increases (SSIs) above background. Historically, thallium has been observed at concentrations above the GPS, but was not observed at this level in 2022. The evaluation of significance of the GPS exceedances for arsenic, thallium, and molybdenum is discussed below.

In accordance with the Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act Facilities (U.S. Environmental Protection Agency, 2009), the comparison of assessment monitoring results to the GPS was based on the lower confidence limit (LCL) for the arithmetic mean. The LCL evaluation was completed for Appendix IV parameters that have been detected at a concentration exceeding the GPS in at least one sample result since assessment monitoring was initiated, which include arsenic, thallium, and molybdenum. The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring began in April 2018. The LCL evaluations completed in 2022 for the October 2021 and April 2022 events are provided in **Appendix E**.

Based on the LCL evaluation for the compliance wells installed at the waste boundary, the only parameter at an SSL above the GPS was arsenic at compliance well MW-302. This finding is consistent with previous results. Molybdenum was at a SSL above the GPS at delineation well MW-304A, but was attributed to natural background in an alternative source determination completed in 2021. Molybdenum has not been observed at a SSL above the GPS at the waste boundary. The 2021 alternate source determination is included as an Appendix in the 2021 Annual Groundwater Monitoring Report.

Supplemental groundwater quality parameters were included in the monitoring program in 2022 to support the SOR process, including the evaluation of MNA. The results for the supplemental parameters are also included in **Table 5**, in the laboratory reports in **Appendix C**, and in the historical results tables in **Appendix D**.

3.5 § 257.90(E)(5) OTHER REQUIREMENTS

Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.

Additional potentially applicable requirements for the annual report, and the location of the requirement within the Rule, are provided in the following sections. For each cited section of the Rule, the portion referencing the annual report requirement is provided below in italics, followed by applicable information relative to the 2022 Annual Groundwater Monitoring and Corrective Action Report for the CCR Units.

3.5.1 § 257.90(e) General Requirements

For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year.

Status of Groundwater Monitoring and Corrective Action Program. The groundwater monitoring and corrective action program is currently in the SOR process, with assessment monitoring continuing.

Summary of Key Actions Completed.

- Completed two semiannual assessment monitoring events (April and October 2022).
- Completed statistical evaluation for the October 2021 assessment monitoring event and prepared groundwater monitoring results letter (February 2022).
- Prepared semiannual progress reports for the SOR process (March and September 2022).
- Installed submersible pumps in two previously installed dewatering wells and began pumping at the west end of the LAN Upper Ash Pond to supply water for In-Situ Stabilization (ISS) wall construction (May – August 2022).
- Hauled, placed, and conditioned some CCR from the LAN Upper Ash Pond up to the LAN Landfill (June - July 2022).
- Installed the In-Situ Stabilization (ISS) wall through the middle of the bridge lift platform (June – August 2022).
- Completed statistical evaluation for the April 2022 assessment monitoring event and prepared groundwater monitoring results letter (July 2022).
- Dredging the Upper Ash Pond North Pond closure area and filling geotextile dewatering tubes in the prepared scour protection layer area in the South Pond Closure Area. Hauling coal and soil impacted with coal from the Coal Yard to the South Pond Closure Area (August – November 2022).
- Continued work on the SOR in accordance with § 257.97. Specifically, additional analyses were completed that indicate that the CCR unit is not the source of arsenic observed above the GPS in MW-302.

Description of Any Problems Encountered.

- No problems were encountered during the groundwater sampling events in 2022.

Discussion of Actions to Resolve the Problems. Not applicable.

Projection of Key Activities for the Upcoming Year (2023).

- Update the site conceptual model based on findings of the ongoing groundwater sampling.
- Amend ACM to incorporate additional data gathered during the groundwater investigation and provide a no action alternative.
- Complete a semiannual SOR progress report
- Hold an additional public meeting.

- Complete the SOR based on information in the revised ACM.
- Complete two semiannual assessment monitoring events (April and October 2022).
- Complete statistical evaluation and determination of any SSLs exceeding the GPS and prepare groundwater monitoring results letter for the October 2022 monitoring event (February 2023).
- Complete statistical evaluation and determination of any SSLs exceeding the GPS and prepare groundwater monitoring results letter for the April 2023 monitoring event (August 2023).
- Continue Ash Pond closure construction.
- Advance landfill closure design and permitting.

3.5.2 § 257.94(d) Alternative Detection Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable. The LAN CCR units are no longer in the detection monitoring program.

3.5.3 § 257.94(e)(2) Alternative Source Demonstration for Detection Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not applicable. The LAN CCR units are no longer in the detection monitoring program.

3.5.4 § 257.95(c) Alternative Assessment Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable. Assessment monitoring has been initiated at the site, but no alternative assessment monitoring frequency is proposed at this time.

3.5.5 § 257.95(d)(3) Assessment Monitoring Results and Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

The 2022 assessment monitoring results, background UPLs, and GPSs established for LAN are provided in Table 5. The laboratory reports are provided in Appendix C. Historical monitoring results are summarized in Appendix D.

Supplemental groundwater quality parameters were included in the monitoring program in 2022 to support the SOR process, including the evaluation of MNA. The results for the supplemental parameters are included in Table 5, in the laboratory reports in Appendix C, and in the historical results in Appendix D.

3.5.6 § 257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

No alternative source demonstrations were completed in 2022.

3.5.7 § 257.96(a) Extension of Time for Corrective Measures Assessment

The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measure due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

The ACM was initiated on April 15, 2019. The July 10, 2019 certification demonstrated the need for a 90-day deadline extension which was provided in the 2019 Annual Groundwater Monitoring and Corrective Action Report. The ACM was completed on September 19, 2019. Addendum No. 1 to the ACM was completed on November 25, 2020.

3.6 §257.90(E)(6) OVERVIEW

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit.

The specific requirements for the overview under §257.90(e)(6) are listed and the information is provided at the beginning of this report, before the Table of Contents.

4.0 REFERENCE

U.S. Environmental Protection Agency (USEPA), 2009, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, EPA 530-R-09-007, March 2009.

Tables

Table 1. Groundwater Monitoring Well Network
Lansing Generating Station / SCS Engineers Project #25222070.00

Monitoring Well	Location in Monitoring Network	Role in Monitoring Network
MW-6	Upgradient	Background
MW-301	Downgradient	Compliance
MW-302	Downgradient	Compliance
MW-302A	Downgradient, deeper	Delineation
MW-303	Downgradient	Compliance
MW-304	Downgradient	Delineation
MW-304A	Downgradient, deeper	Delineation
MW-305	Downgradient	Delineation
MW-306	Downgradient	Delineation
MW-306A	Downgradient, deeper	Delineation
MW-307	Downgradient	Delineation
MW-307A	Downgradient, deeper	Delineation
MW-308	Downgradient	Groundwater Elevation Only
MW-309	Downgradient	Groundwater Elevation Only

Created by:	RM	Date:	12/14/2020
Last revision by:	RM	Date:	6/24/2022
Checked by:	NDK	Date:	9/26/2022

Table 2. CCR Rule Groundwater Samples Summary
Lansing Generating Station / SCS Engineers Project #25222070.00

Sample Dates	Background Well	Compliance Wells		Delineation Well	Compliance Well	Delineation Wells								
	MW-6	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A	MW-307	MW-307A	MW-308[1]	MW-309[1]
4/4-6/2022	A	A	A	A	A	A	A	A	A	A	A	A	--	--
10/17-19/2022	A	A	A	A	A	A	A	A	A	A	A	A	--	--
Total Samples	2	2	2	2	2	2	2	2	2	2	2	2	0	0

Abbreviations:
A = Assessment Monitoring Sample
-- = Not Sampled

Notes:
1. No sampling events are currently planned for MW-308 or MW-309. These wells are intended for groundwater elevation measurements only.

Created by:	NDK	Date:	1/8/2018
Last revision by:	RM	Date:	1/16/2023
Checked by:	MDB	Date:	1/16/2023

Table 3. Water Level Summary
Interstate Power & Light - Lansing, Iowa / SCS Engineers Project #25222070.00

Well Number	MW1[4]	MW2	MW3[3]	MW4	MW5	MW6	MW11	MW11R	MW12	MW12P	MW13	MW14	MW15	TW17	TW18	TW19	MW-16	MW-18	MW-19	MW-22	MW-22P	MW20	MW301	MW302	MW302A	MW303	MW304	MW304A	MW305	MW306	MW306A	MW307	MW-307A	MW308	MW309
Top of Casing Elevation (feet amsl)	636.67	657.36	656.78	698.17	698.46	741.33	686.19	686.42	691.40	691.58	658.38	646.06	656.82	659.59	659.15	659.05	700.26	771.09	716.07	702.55	702.17	662.29	641.61	638.40	638.93	656.27	636.43	638.60	633.87	637.48	639.56	643.06	642.96	637.89	638.27
Screen Length (ft)	20	10	10	10	10	10	10	10	15	5	15	15	15	15	15	15	15	15	15	15	5	10	10	10	5	10	10	5	10	10	5	10	5	10	10
Top of Well Screen Elevation (ft)	626.50	620.50	600.00	650.00	630.00	656.00	657.96	646.94	657.70	627.98	649.48	636.96	640.82	649.39	650.55	648.95	662.18	669.23	651.69	665.27	625.14	648.79	624.01	626.90	594.93	637.97	630.43	593.60	627.87	621.48	589.56	633.06	597.96	627.89	626.27
Measurement Date																																			
May 11, 2001	632.77	628.53	629.29	653.61	654.82	663.12	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
March 8, 2002	627.95	620.21	620.94	650.57	651.80	661.71	653.60	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
February 19, 2004	NM	NM	NM	648.80	650.05	653.27	648.03	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 26, 2004	NM	NM	NM	652.89	654.15	664.29	652.09	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
August 23, 2004	NM	NM	NM	652.15	653.38	662.65	650.04	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
November 18, 2004	NM	NM	NM	650.81	652.04	663.88	648.18	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 5, 2005	NM	NM	NM	650.42	651.67	661.80	647.77	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 19, 2006	NM	NM	NM	650.43	651.66	661.78	DRY	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 30, 2007	NM	NM	NM	650.21	651.43	661.69	DRY	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 16, 2008	NM	NM	NM	653.99	655.24	664.55	DRY	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 3, 2009	NM	NM	NM	655.72	656.95	666.16	DRY	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 21, 2010	NM	NM	NM	652.27	653.51	663.08	DRY	646.41	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 4, 2011	NM	NM	NM	653.51	654.75	663.84	DRY	646.58	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 25, 2012	NM	NM	NM	651.77	653.03	662.83	DRY	646.53	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 17, 2012	627.33	620.03	NM[2]	650.73	651.97	662.10	AB	646.16	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
February 19-20, 2013	627.03	620.03	621.26	650.72	651.96	662.13	AB	645.42	650.31	NI	643.72	641.93	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 1, 2013	627.80	620.68	621.79	652.24	653.46	664.16	AB	646.21	651.71	NI	644.61	641.36	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
July 1, 2013	631.57	625.88	626.68	661.13	662.31	673.12	AB	648.73	653.66	NI	648.43	642.43	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 29, 2014	629.84	NM	NM	654.17	655.43	664.86	AB	646.96	651.62	651.33	645.97	641.95	633.83	648.74	647.26	648.08	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 29, 2014	629.75	624.37	624.50	653.53	653.81	664.30	AB	646.53	651.05	650.73	645.39	641.43	633.61	648.14	646.55	646.96	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 20, 2015	628.16	620.09	620.78	652.00	653.24	663.30	AB	645.93	650.32	650.05	643.73	642.02	633.85	647.79	646.35	646.97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
December 10, 2015	NM	NM	NM	NM	NM	662.28	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI	NI	NI	648.27	623.54	627.88	NI	638.79	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 28, 2016	627.50	620.26	620.83	651.55	652.79	662.80	AB	645.96	650.05	650.00	643.56	641.56	634.71	647.78	NM[5]	646.80	NI	NI	NI	NI	NI	648.61	623.45	627.24	NI	638.15	NI	NI	NI	NI	NI	NI	NI	NI	NI
July 20, 2016	NM	NM	NM	NM	NM	663.21	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	649.86	624.76	628.60	NI	639.33	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 27, 2016	NM	NM	NM	NM	NM	670.82	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	651.32	624.97	628.35	NI	638.65	NI	NI	NI	NI	NI	NI	NI	NI	NI
January 18, 2017	NM	NM	NM	NM	NM	666.28	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	650.18	624.09	627.32	NI	638.10	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 19-21, 2017	629.39	622.04	622.02	658.84	660.00	669.82	AB	648.24	653.68	653.40	647.61	643.01	634.50	649.87	649.03	649.01	660.45	669.88	652.12	668.38	667.45	651.71	624.70	628.98	NI	639.20	NI	NI	NI	NI	NI	NI	NI	NI	NI
June 19-20, 2017	NM	NM	NM	NM	NM	670.65	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	650.22	624.89	627.75	NI	638.77	NI	NI	NI	NI	NI	NI	NI	NI	NI
August 15, 2017	NM	NM	NM	NM	NM	670.61	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	649.58	624.09	627.28	NI	637.86	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 16, 2017	NM	NM	NM	NM	NM	669.58	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	650.81	625.70	628.75	NI	638.79	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 16-17, 2018	628.63	620.82	617.50	AB	AB	667.64	AB	647.07	652.25	651.90	646.36	642.61	634.07	648.77	648.49	648.23	NM	NM	NM	NM	NM	650.77	624.29	628.98	NI	638.62	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 26, 2018	628.67	620.86	617.63	AB	AB	667.96	AB	647.47	651.75	652.54	646.38	645.46	634.14	648.99	648.35	648.00	656.61	667.79	650.19	666.28	665.17	651.18	624.56	628.75	NI	638.57	NI	NI	NI	NI	NI	NI	NI	NI	NI
June 4, 2018	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	624.62	628.27	NI	638.81	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 8, 2018	NM	NM	NM	AB	AB	664.71	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	625.73	628.59	NI	637.32	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 15-16, 2019	630.95	632.16	628.40	AB	AB	672.78	AB	648.69	654.35	653.99	649.45	643.08	633.71	649.73	648.47	648.10	NM	672.64	654.55	671.05	669.22	652.57	629.19	629.99	NI	638.22	NI	NI	NI	NI	NI	NI	NI	NI	NI
June 20, 2019	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NM	623.61	NI	629.12	623.05	NI	NI	NI	NI	NI
October 2, 2019	NM	NM	NM	AB	AB	675.54	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	652.64	626.54	630.04	NI	638.03	623.79	NI	629.77	622.47	NI	NI	NI	NI	NI
December 5, 2019	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NM	NM	NI	NM	620.60	NI	NI	NI	NI	NI
February 5, 2020	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NM	NM	NI	NM	620.83	NI	NI	NI	NI	NI
May 20-21, 2020	629.38	620.61	621.38	AB	AB	674.47	AB	648.17	654.45	654.04	647.94	643.23	633.80	648.82	648.86	649.40	661.08	674.36	656.06	672.16	670.46	650.20	624.46	627.68	623.19	637.98	621.57	624.88	627.24	620.43	620.40	NI	NI	NI	NI
July 6, 2020	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	624.20	NM	NM	625.76	NM	NM	621.66	NI	NI	NI	NI
August 19-21, 2020	NM	NM	NM	AB	AB	674.64	AB	NM	NM	NM	NM	NM	NM	NM		NM	NM	NM	NM	NM	NM	650.88	625.02	627.53	623.52	638.22	621.75	NM	626.98	620.37	620.63	NI	NI	NI	NI
October 19-20, 2020	628.69	620.38	621.22	AB	AB	673.37	AB	647.71	653.94	653.57	647.50	642.96	633.44	649.67	648.76	648.14	660.42	673.35	654.95	671.21	669.55	649.50	624.42	627.14	623.03	636.96	621.40	624.41	626.54	619.92	620.17	NI	NI	NI	NI
February 23, 2021	NM	NM	NM	AB	AB	NM	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	625.04	NM	619.76	NM	NI	NI	NI	NI
April 7-9, 2021	628.84	620.55	621.36	AB	AB	671.08	AB	647.97	652.31	652.92	647.39	642.92	634.38	649.58	648.86	648.21	659.59	670.95	652.86	669.02	667.74	650.79	624.02	627.87	623.12	638.07	621.46	624.31	627.02	620.03	620.14	NI	NI	NI	NI
July 12-13, 2021	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	624.40	627.89	622.77	637.70	621.23	623.87	626.79	619.83	620.00	630.95	625.27	621.00	621.59
August 13, 2021	627.92	620.87	621.58	NM	NM	669.47	NM	647.22	652.57	652.31	646.79	NM	631.59	649.26	648.79	648.21	658.98	669.17	651.25	667.85	666.63	651.19	623.92	628.46	623.12	636.67	621.57	624.11	627.14	620.38	620.82	630.01	625.48	621.44	622.02
September 23, 2021	627.54	620.48	621.38	AB	AB	668.88	NM	647.28	652.46	652.12	646.53	642.79	632.44	649.12	648.65	647.96	658.72	668.58	650.77	667.12	665.96	650.46	624.33	627.65	622.85	637.62	621.20	623.74	626.44	619.95	620.28	631.74	625.28	621.09	621.92
October 25-27, 2021	627.51	620.48	621.19	AB	AB	668.14	AB	646.82	652.10	651.79	645.58	642.68	635.44	649.00	648.61	647.90	658.32	667.79	650.24	666.48	665.37	649.34	627.00	628.86	623.10	638.68	621.29	623.87	626.41	619.91	620.17	634.90	626.25	620.90	621.68
February 18, 2022	627.18	620.05	620.69	AB	AB	666.67	AB	647.19	651.83	651.42	645.95	642.67	638.17	648.93	648.58	647.83	657.69	666.36	649.16	665.06	664.10	649.81	629.46	629.87	623.09	641.17	621.19	623.59	626.42	619.59	619.90	638.27	626.12	620.66	621.42
April 4-7, 2022	627.65	620.66	621.36	AB	AB	667.14	AB	647.31	652.11	651.71	646.61	642.88	640.13	649.09	648.91	648.24	658.09	666.58	649.60	665.47	664.41	650.86	630.67	630.29	623.71	641.69	621.72	619.00	627.17	620.42	620.61	639.74	626.72	621.44	622.04
June 2, 2022	NM	NM	NM	NM	NM	NM	NM	646.78	651.73	651.37	645.41	642.58	635.53	NM	648.61	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
October 17-19 2022	627.05	620.12	620.91	AB	AB	665.34	AB	646.34	651.12	650.79	643.88	642.34	639.04	648.57	648.39	647.63	656.97	664.97	647.72	663.92	663.06	AB	630.79	629.51	622.97	639.39	621.21	623.56	626.36	619.79	620.05	639.23	625.77	621.78	621.96
Bottom of Well Elevation (ft)	606.50	610.50	590.00	640.47	620.36	646.03	647.59	636.94	642.70	622.98	634.48	621.96	625.82	634.39	635.55	633.95	647.18	654.23	636.69	650.27	620.14	638.79	614.01	616.90	589.93	627.97	620.43	588.60	617.87	611.48	584.56	623.06	592.96	617.89	616.27

Notes: NM = not measured NI = not installed AB = abandoned

1. The groundwater elevations recorded for MW11 on 2/19/04, 11/18/04, and 5/05/05 are not considered reliable due to a minimal quantity of water observed in the well. The actual water table elevation could be lower than the reported value.
2. MW3 could not be located during the October 2012 sampling event.
3. Repairs were completed at MW3 in July 2013. Elevations calculated for February, April, and July 2013 are estimates based on the old top of casing elevation (657.36 feet amsl). MW3 was re-surveyed on June 3, 2014.
4. MW1 was repaired in April 2013. Groundwater elevations measured before this date are calculated using the old top of casing elevation (637.60 ft amsl).
5. TW18 was damaged and could not be accessed for a water level measurement in April 2016. The well was repaired in July 2016.

Created by: MDB Date: 8/9/2013
Last revision by: EMS Date: 10/21/2022
Checked by: NDK Date: 10/21/2022

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Table 4A. Horizontal Gradients and Flow Velocity
Lansing Generating Station
SCS Engineers Project #25222070.00

	Flow Path A - North-Northwest				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
April 4-7, 2022: Shallow	646.61	640	928	0.007	0.5
October 17-19, 2022: Shallow	643.88	640	856	0.005	0.3
October 17-19, 2022: Deep	625.77	622	504	0.007	0.57

	Flow Path B - Northwest				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
April 4-7, 2022: Deep	626.72	620	364	0.018	1.40

Well	**K Values (cm/sec)**	**K Values (ft/d)**
MW-6	N/A	N/A
MW-301	1.75E-03	5.0
MW-302	3.50E-03	9.9
MW-302A	2.03E-02	57
MW-303	2.19E-02	62
MW-304	1.68E-02	48
MW-304A	2.55E-03	7.2
MW-305	3.38E-03	9.6
MW-306	4.46E-02	126
MW-306A	3.04E-02	86
MW-307	4.03E-02	114
MW-307A	9.66E-03	27
Geometric Mean	1.1E-02	30

Assumed Porosity, n
0.40

Groundwater flow velocity equation: $V = [K*(\Delta h/\Delta l)] / n$

ft = feet
ft/d = feet per day
K = hydraulic conductivity
n = effective porosity
V = groundwater flow velocity
h1, h2 = point interpreted groundwater elevation at locations 1 and 2
Δl = distance between location 1 and 2
Δh/Δl = hydraulic gradient

Note:
1.See Figures 3, 4, 5, and 6 for velocity calculation flow path locations.

Created by: NDK Date: 9/26/2022
Last revision by: RM Date: 1/13/2023
Checked by: MDB Date: 1/16/2023

Table 4B. Vertical Gradients
Lansing Generating Station / SCS Engineers Project #25222070.00
January - December 2022

Vertical Hydraulic Gradients	MW302/MW302A		MW304/MW304A		MW306/MW306A		MW307/MW307A	
Shallow Well	MW302		MW304		MW306		MW307	
Screen midpoint[(2)] (feet amsl)	621.90		625.43		616.48		628.06	
Deep Well	MW302A		MW304A		MW306A		MW307A	
Screen midpoint (feet amsl)	592.43		591.10		587.06		595.46	
Measurement Date	**Distance between midpoints[(2)] (ft)**	**Vertical Gradient (ft/ft)**	**Distance between midpoints[(2)] (ft)**	**Vertical Gradient (ft/ft)**	**Distance between midpoints[(2)] (ft)**	**Vertical Gradient (ft/ft)**	**Distance between midpoints[(2)] (ft)**	**Vertical Gradient (ft/ft)**
February 23, 2021	NM	NM	NM	NM	NM	NM	NI	NI
April 7-9, 2021	29.5	-0.161	29.8	0.095	28.7	0.004	NI	NI
July 12-13, 2021	29.5	-0.174	29.7	0.089	28.6	0.006	31.5	-0.180
August 13, 2021	29.5	-0.181	29.9	0.085	28.9	0.015	31.1	-0.146
September 23, 2021	29.5	-0.163	29.7	0.085	28.7	0.012	31.9	-0.202
October 25-27, 2021	29.5	-0.195	29.8	0.087	28.6	0.009	33.5	-0.258
April 4-7, 2022	29.5	-0.223	30.0	-0.091	28.9	0.007	32.6	-0.399
October 17-19, 2022	29.5	-0.222	29.7	0.079	28.6	0.009	32.6	-0.413

Notes:
1: A positive vertical gradient indicates upward groundwater flow. A negative gradient indicates downward flow.
2: MW-304 and MW-306 are water table wells, and their screens were not fully submerged during all 2022 sampling events. The effective screen midpoint for a water table well is calculated for each sampling event as the midpoint between the water table elevation and the screen bottom elevation, and this value is used to calculate Distance Between Midpoints.
NI: Not Installed
NM: Not Measured

Created by:	TK	Date:	10/23/2020
Last revision by:	RM	Date:	1/16/2023
Checked by:	MDB	Date:	1/16/2023

Table 5. Groundwater Analytical Results Summary
Lansing Generating Station / SCS Engineers Project #25222070.00

Parameter Name	UPL Method	UPL	GPS	Background Well	Compliance Wells		Delineation Well	Compliance Well	Delineation Wells						
				MW-6	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A	MW-307	MW-307A
				4/6/2022	4/5/2022	4/5/2022	4/5/2022	4/5/2022	4/5/2022	4/5/2022	4/4/2022	4/4/2022	4/4/2022	4/5/2022	4/5/2022
Appendix III															
Boron, ug/L	P*	100		<58	220	540	170	110	71 J	1,500	110	550	260	400	430
Calcium, mg/L	P	73.9		71	69	120	73	48	70	38	78	200	78	50	58
Chloride, mg/L	P	8.52		5.3	22	12	5.6	23	5.3	16	3.5 J	41	6.3	22	13
Fluoride, mg/L	P*	0.2		<0.22	<0.22	<0.22	<0.22	0.33 J	<0.22	0.32 J	<0.22	<0.22	<0.22	<0.22	<0.22
Field pH, Std. Units	P	7.9		7.32	8.30	6.92	7.34	8.07	7.25	7.97	6.94	6.86	7.19	8.34	7.48
Sulfate, mg/L	P	29.4		25	86	<2.0	52	54	20	87	42	100	43	76	28
Total Dissolved Solids, mg/L	P	386.7		280	260	490	300	180	240	270	270	1,100	330	210	250
Appendix IV		**UPL**	**GPS**												
Antimony, ug/L	NP*	0.037	6	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69
Arsenic, ug/L	P*	0.37	10	<0.75	4.9	40	<0.75	1.3 J	<0.75	<0.75	0.89 J	7.7	<0.75	1.8 J	2.1
Barium, ug/L	P	48.5	2,000	48	130	690	49	200	42	30	97	350	61	290	110
Beryllium, ug/L	DQ	DQ	4	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium, ug/L	DQ	DQ	5	<0.055	<0.055	<0.055	<0.055	<0.055	<0.055	0.074 J	<0.055	<0.055	<0.055	<0.055	<0.055
Chromium, ug/L	P	1.20	100	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt, ug/L	NP*	0.34	6	<0.19	<0.19	1.5	0.45 J	<0.19	<0.19	0.48 J	<0.19	0.49 J	0.19 J	<0.19	0.68
Fluoride, mg/L	P*	0.2	4	<0.22	<0.22	<0.22	<0.22	0.33 J	<0.22	0.32 J	<0.22	<0.22	<0.22	<0.22	<0.22
Lead, ug/L	NP*	0.13	15	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	0.81	<0.24	<0.24	<0.24	<0.24	<0.24
Lithium, ug/L	NP*	3	40	<2.5	7.3 J	<2.5	<2.5	5.4 J	<2.5	<2.5	2.6 J	23	<2.5	10	<2.5
Mercury, ug/L	DQ	DQ	2	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
Molybdenum, ug/L	P*	0.37	100	<1.2	7.6	<1.2	<1.2	9.2	2.7	120	<1.2	<1.2	<1.2	16	5.7
Selenium, ug/L	P*	0.72	50	<0.96	<0.96	<0.96	1.3 J	<0.96	<0.96	<0.96	1.7 J	<0.96	<0.96	<0.96	<0.96
Thallium, ug/L	NP*	0.29	2	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
Radium 226/228 Combined, pCi/L	P	1.88	5	0.0823	0.103	1.35	0.402	0.533	0.143	0.510	0.249	0.757	0.198	0.183	0.0954
Additional Parameters - Selection of Remedy															
Arsenic, dissolved, ug/L	UPL or GPS not applicable			--	--	38	--	--	--	--	--	7.8	--	--	--
Iron, dissolved, ug/L				<36	280	44,000	<36	<36	<36	<36	830	32,000	1,500	87 J	280
Iron, ug/L				<36	620	45,000	<36	<36	<36	240	1,500	33,000	1,700	78 J	370
Magnesium, ug/L				35,000	21,000	49,000	37,000	20,000	33,000	16,000	23,000	41,000	36,000	17,000	27,000
Manganese, dissolved, ug/L				14	570	3,000	8.3 J	60	<3.6	6.8 J	520	4,500	1,000	560	700
Manganese, ug/L				<3.6	590	3,000	<3.6	89	<3.6	25	560	4,400	1,000	590	710
Molybdenum, dissolved,ug/L				--	--	--	--	--	--	130	--	--	--	--	--
Potassium, ug/L				1,100	3,000	3,900	1,100	1,900	1,300	740	1,500	7,000	1,300	2,400	2,100
Sodium, ug/L				4,500	16,000	21,000	7,400	16,000	5,900	58,000	5,500	160,000	10,000	16,000	22,000
Total Alkalinity, mg/L				330	200	620	330	210	320	210	290	940	350	130	330
Carbonate Alkalinity, mg/L				<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6
Bicarbonate Alkalinity, mg/L				330	200	620	330	210	320	210	290	940	350	130	330

See Page 2 for abbreviations and notes.

Table 5. Groundwater Analytical Results Summary
Lansing Generating Station - April 2022 / SCS Engineers Project #25222070.00

4.4	Blue highlighted cell indicates the compliance well result exceeds the UPL (background) and the LOQ.
30.8	Yellow highlighted cell indicates the compliance well result exceeds the GPS.
17.0	Grayscale indicates additional parameters sampled for selection of remedy and evaluation of MNA.

Abbreviations:

UPL = Upper Prediction Limit
-- = Not Analyzed
µg/L = micrograms per liter
mg/L = milligrams per liter
LOD = Limit of Detection
LOQ = Limit of Quantitation
P = Parametric UPL with 1-of-2 retesting
DQ = Double Quantification Rule (not detected in background)
NP = Nonparametric UPL (highest background value)
GPS = Groundwater Protection Standard

J = Estimated concentration at or above the LOD and below the LOQ.
* = UPL is below the LOQ for background sampling. For compliance wells, only results confirmed above the LOQ are evaluated as potential

Notes:

1. An individual result above the UPL or GPS does not constitute a statistically significant increase (SSI) above background or statistically significant increase above the GPS. See the accompanying letter text for identification of statistically significant results.
2. GPS is the United States Environmental Protection Agency (US EPA) Maximum Contamination Level (MCL), if established; otherwise, the value from 40 CFR 257.95(h)(2) is used.
3. Interwell UPLs calculated based on results from background well MW-6.

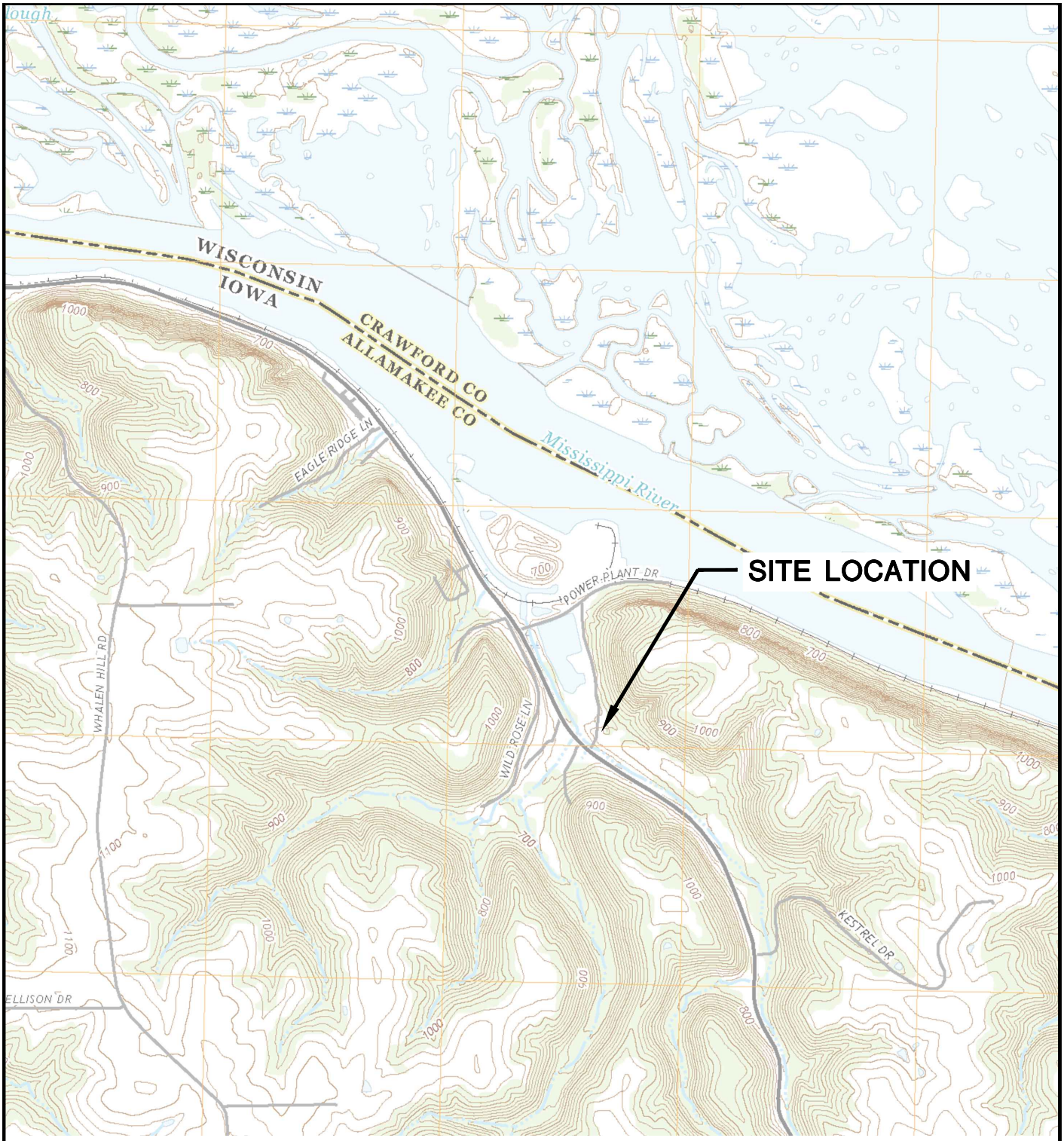
Created by:	NDK	Date:	4/10/2021
Last revision by:	RM	Date:	5/23/2022
Checked by:	JJK	Date:	5/13/2022
Sci QA/QC:	MDB	Date:	6/17/2022

Table 6. 2022 Groundwater Field Data Summary
Lansing Generating Station / SCS Engineers Project #25222070.00

Well	Sample Date	Groundwater Elevation (feet)	Field Temperature (deg C)	Field pH (Std. Units)	Oxygen, Dissolved (mg/L)	Field Specific Conductance (umhos/cm)	Field Oxidation Potential (mV)	Turbidity (NTU)
MW-301	4/5/2022	630.67	8.7	8.30	0.15	554	200.0	0.00
MW-302	4/5/2022	623.29	6.3	6.92	0.13	1151	202.8	3.21
MW-302A	4/5/2022	623.71	10.2	7.34	6.49	630.0	199.7	0.00
MW-303	4/5/2022	641.69	4.6	8.07	1.17	452.4	202.1	0.00
MW-304	4/5/2022	621.72	8.2	7.25	7.20	571.8	201.4	0.00
MW-304A	4/5/2022	619.00	9.4	7.97	0.19	520.9	198.1	42.65
MW-305	4/4/2022	627.17	4.4	6.94	4.06	545.0	198.9	4.57
MW-306	4/4/2022	620.42	12.0	6.86	0.26	1839	196.3	0.00
MW-306A	4/4/2022	620.61	13.0	7.19	1.13	669	192.7	0.00
MW-307	4/5/2022	639.74	6.9	8.34	0.08	460	198.2	0.00
MW-307A	4/5/2022	626.72	10.8	7.48	0.09	563	199.8	0.00
MW-6	4/6/2022	667.14	8.9	7.32	8.92	599	197.7	0.00

Created by: NDK Date: 9/26/2022
Last revision by: EMS Date: 9/27/2022
Checked by: RM Date: 9/30/2022

Figures



N

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

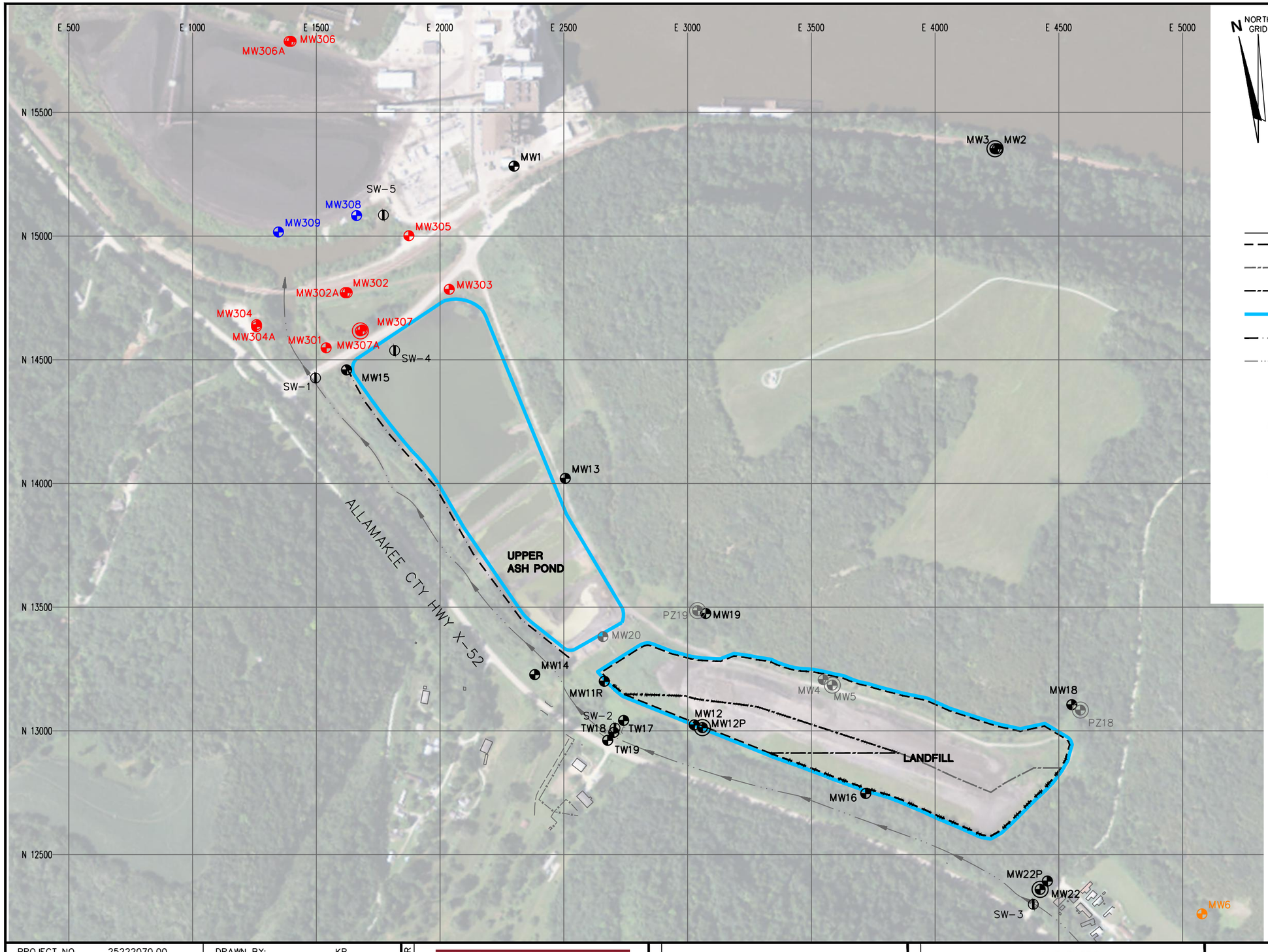
PROJECT NO.	25219070.00	DRAWN BY:	BSS
DRAWN:	11/27/2019	CHECKED BY:	MDB
REVISED:	11/27/2019	APPROVED BY:	TK 01/30/2020

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
1

I:\25219070.00\Drawings\CCR 2019 Annual Report\Site Location Map.dwg, 1/30/2020 3:31:40 PM



N NORTH GRID

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 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..

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25222070.00	DRAWN BY:	KP
DRAWN:	05/26/2021	CHECKED BY:	JR
REVISED:	01/27/2023	APPROVED BY:	TK 01/30/2023

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
2

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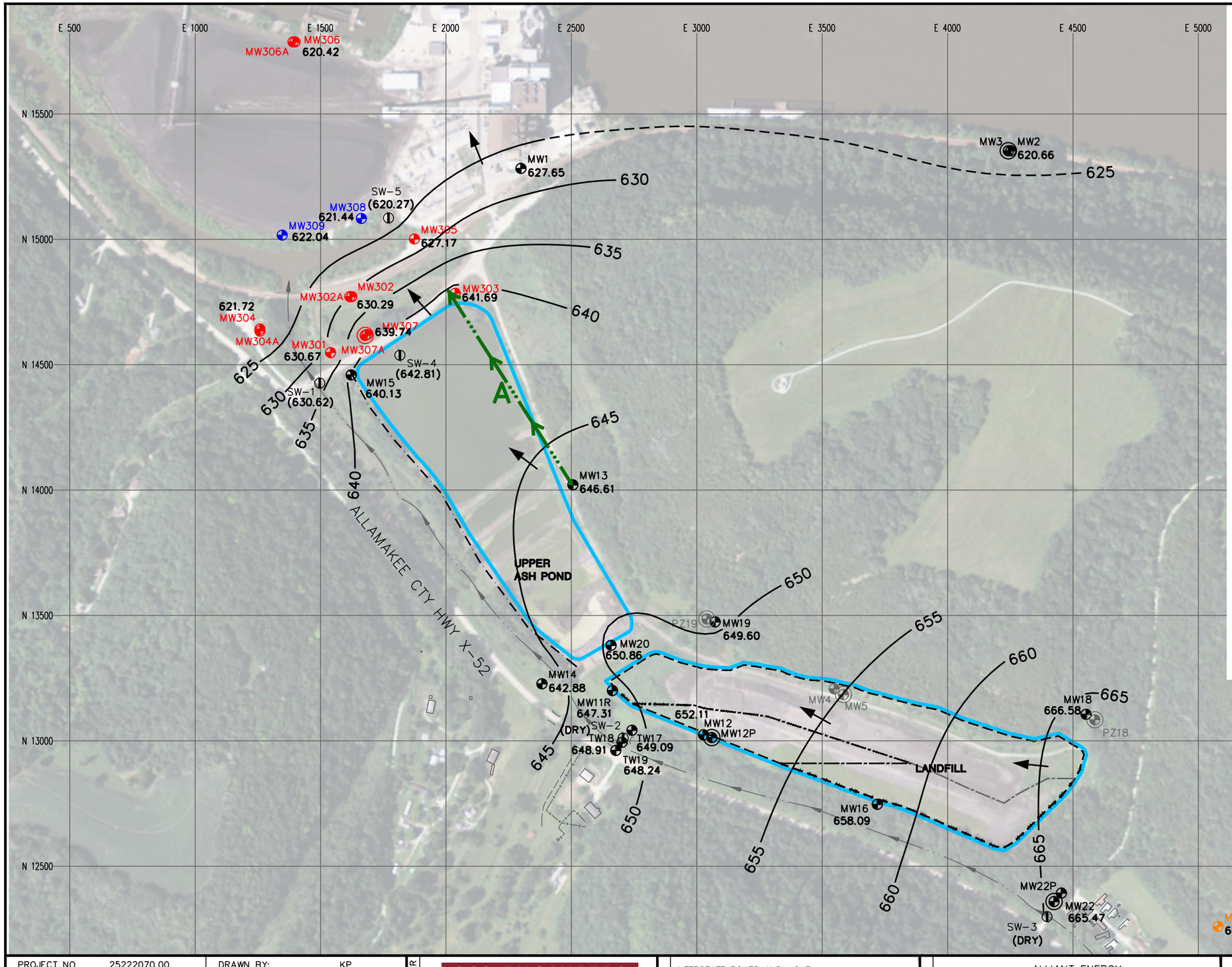


N NORTH GRID

LEGEND

	APPROVED LIMITS OF WASTE
	LIMITS OF PHASE 1 FINAL COVER
	LIMITS OF PHASE 2 FINAL COVER
	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 MONITORING WELL
MW6	CCR BACKGROUND MONITORING WELL
MW308	WATER LEVEL WELL (NOT PART OF CCR RULE MONITORING SYSTEM)
	CCR UNITS
(642.81)	SURFACE WATER ELEVATION
(NM)	NOT MEASURED
666.58	WATER TABLE ELEVATION
	WATER TABLE CONTOUR (DASHED WHERE INFERRED)
	FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
2. SEE FIGURE 2 FOR ADDITIONAL LEGEND ITEMS AND NOTES.

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25222070.00	DRAWN BY:	KP
DRAWN:	07/29/2022	CHECKED BY:	RM
REVISED:	01/27/2023	APPROVED BY:	TK 01/30/2023

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

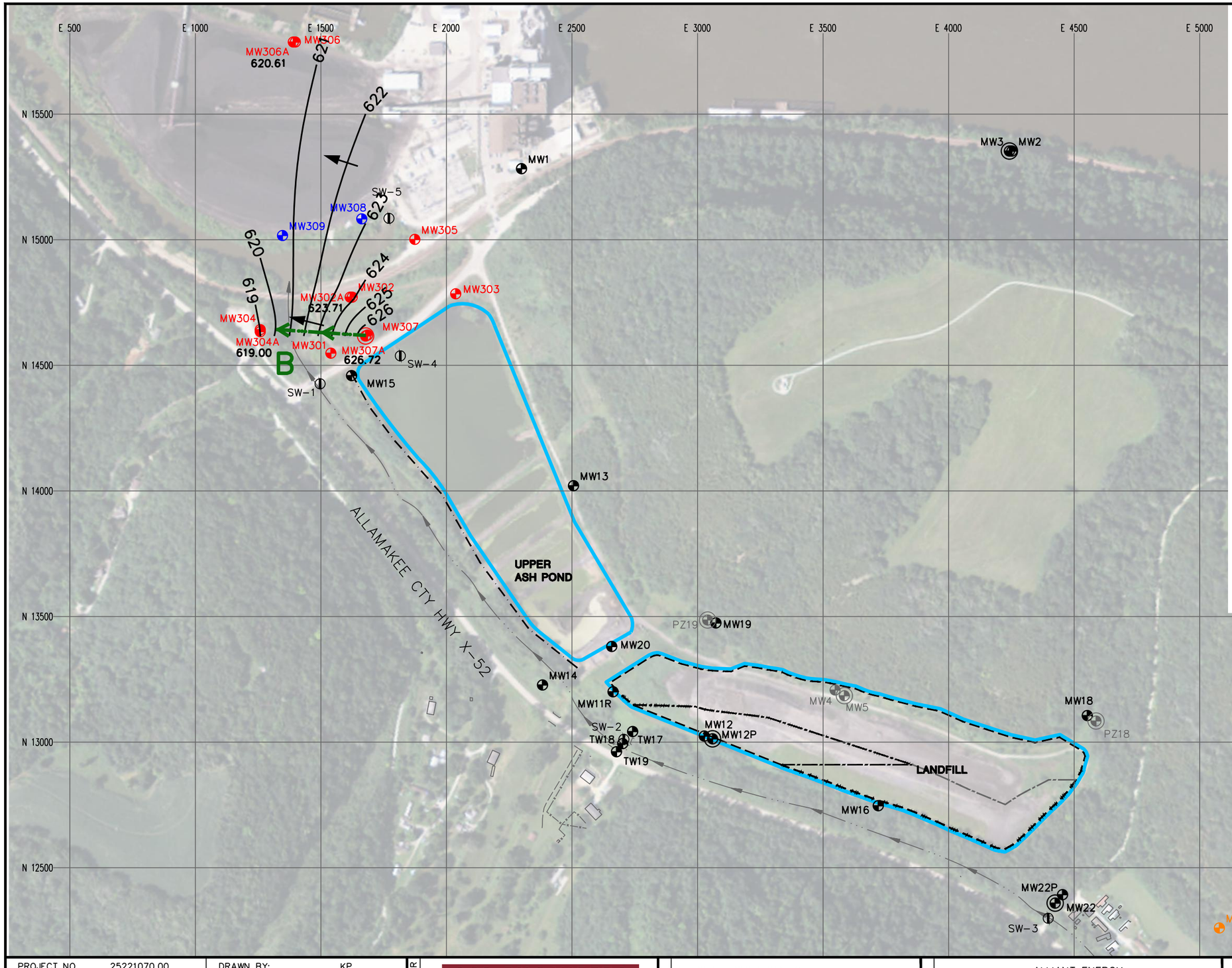
CLIENT: INTERSTATE POWER AND LIGHT
2320 POWER PLANT DRIVE
LANSING, IA 52151-9733

SITE: ALLIANT ENERGY
LANSING POWER STATION
LANSING, IOWA

WATER TABLE MAP
APRIL 4-7, 2022

FIGURE 3

I:\25222070.00\Drawings\April 2022 Wtbl.dwg, 1/27/2023 7:39:28 AM



NORTH GRID

LEGEND

	APPROVED LIMITS OF WASTE
	LIMITS OF PHASE 1 FINAL COVER
	LIMITS OF PHASE 2 FINAL COVER
	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 MONITORING WELL
MW6	CCR BACKGROUND MONITORING WELL
MW308	WATER LEVEL WELL (NOT PART OF CCR RULE MONITORING SYSTEM)
	CCR UNITS
626.72	POTENTIOMETRIC SURFACE ELEVATION
	POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
	FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
2. SEE FIGURE 2 FOR ADDITIONAL LEGEND ITEMS AND NOTES.
3. THE BACKGROUND MONITORING WELL FOR THE LANSING POWER STATION IS MW6.

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25221070.00	DRAWN BY:	KP
DRAWN:	07/29/2022	CHECKED BY:	RM
REVISED:	01/27/2023	APPROVED BY:	TK 01/30/2023

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

POTENTIOMETRIC SURFACE MAP
APRIL 4-7, 2022

FIGURE 4

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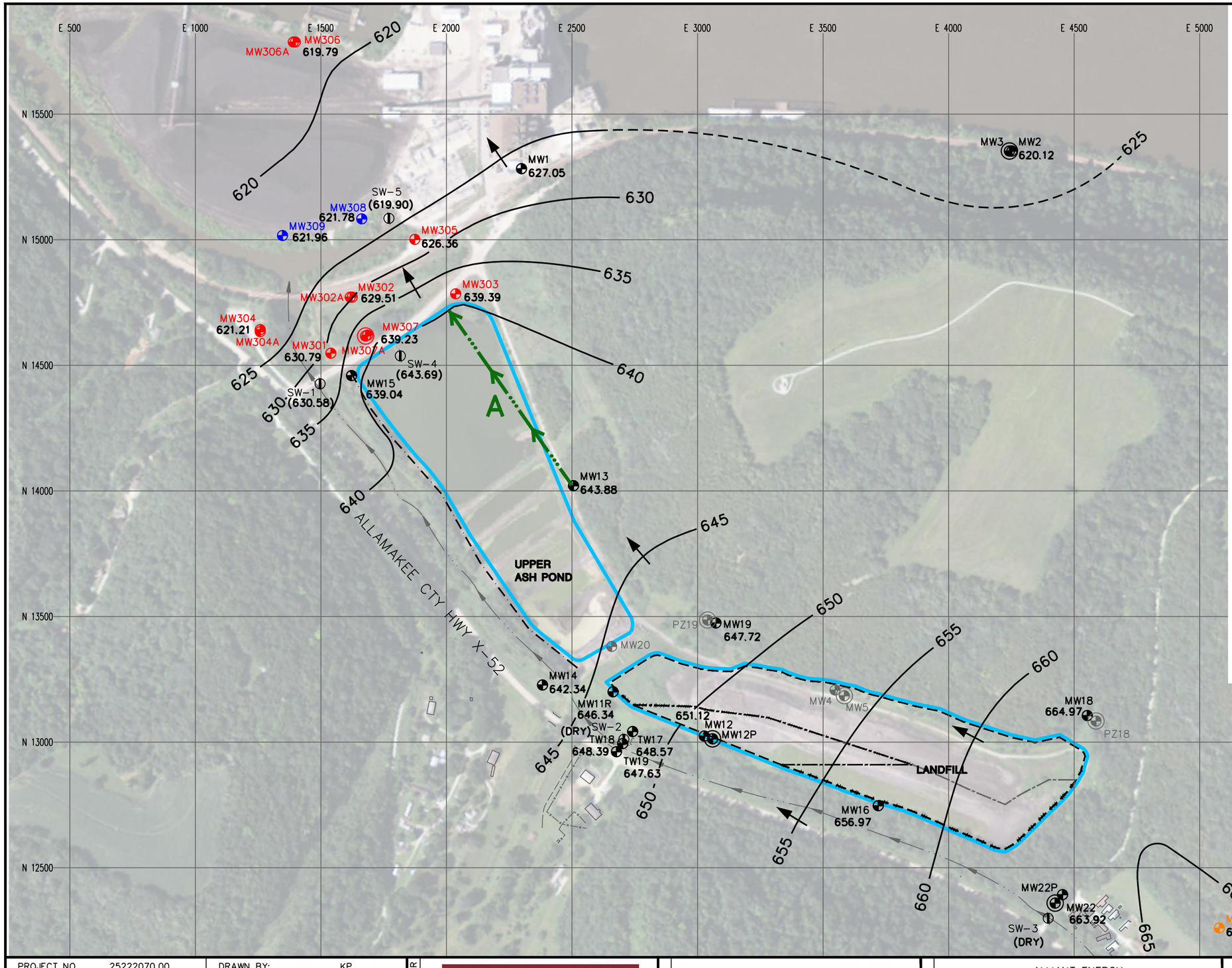

N NORTH GRID

LEGEND

	APPROVED LIMITS OF WASTE
	LIMITS OF PHASE 1 FINAL COVER
	LIMITS OF PHASE 2 FINAL COVER
	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 MONITORING WELL
MW6	CCR BACKGROUND MONITORING WELL
MW308	WATER LEVEL WELL (NOT PART OF CCR RULE MONITORING SYSTEM)
	CCR UNITS
(642.81)	SURFACE WATER ELEVATION
(NM)	NOT MEASURED
666.58	WATER TABLE ELEVATION
	WATER TABLE CONTOUR (DASHED WHERE INFERRED)
	FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
2. SEE FIGURE 2 FOR ADDITIONAL LEGEND ITEMS AND NOTES.

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25222070.00	DRAWN BY:	KP
DRAWN:	10/26/2022	CHECKED BY:	RM
REVISED:	01/27/2023	APPROVED BY:	TK 01/30/2023

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 MAP
OCTOBER 17-19, 2022

FIGURE 5

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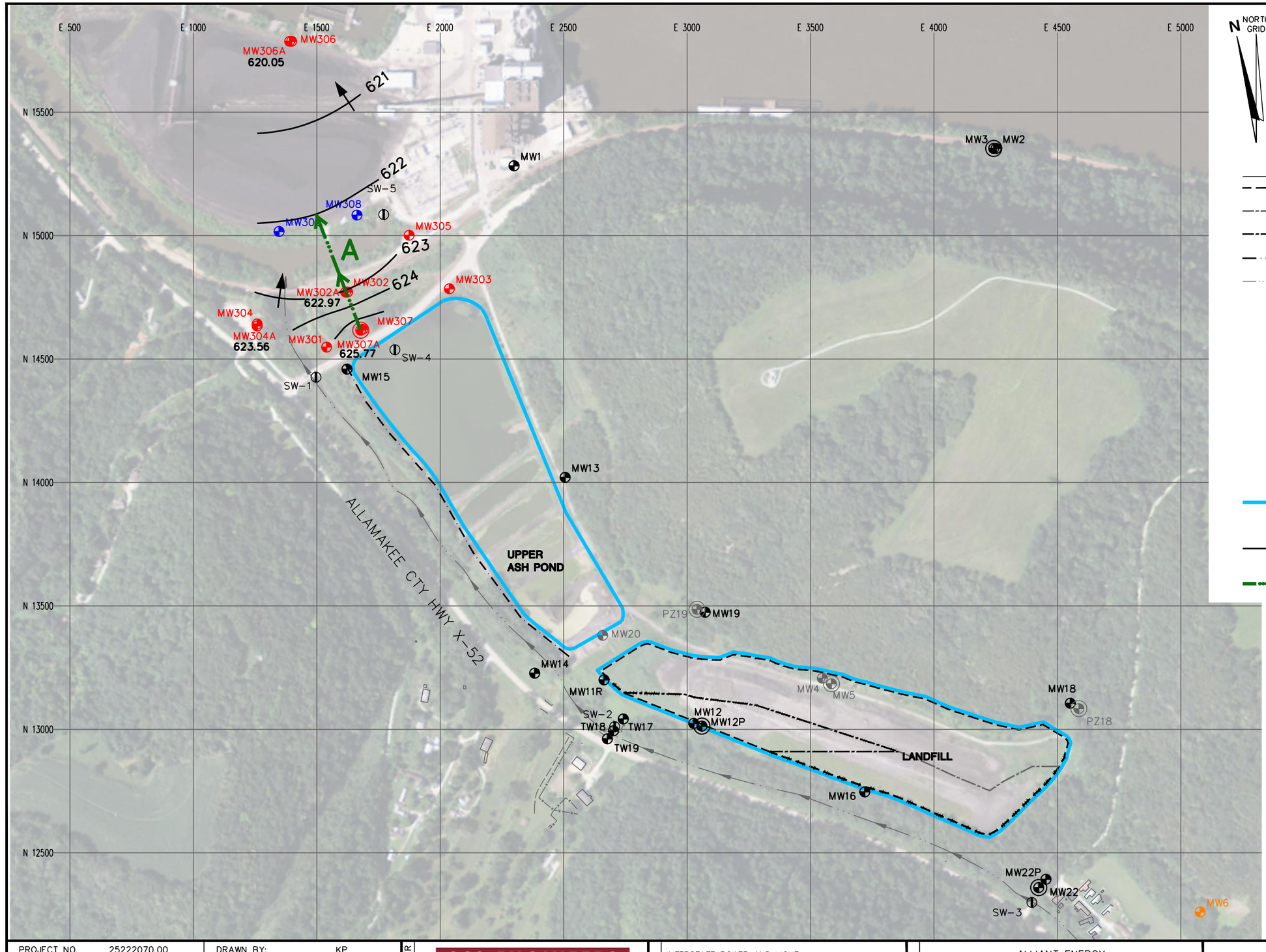

N NORTH GRID

LEGEND

	APPROVED LIMITS OF WASTE
	LIMITS OF PHASE 1 FINAL COVER
	LIMITS OF PHASE 2 FINAL COVER
	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 MONITORING WELL
MW6	CCR BACKGROUND MONITORING WELL
MW308	WATER LEVEL WELL (NOT PART OF CCR RULE MONITORING SYSTEM)
	CCR UNITS
626.72	POTENTIOMETRIC SURFACE ELEVATION
	POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
	FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. MONITORING WELL LOCATIONS AND CCR UNIT LIMITS ARE APPROXIMATE.
2. SEE FIGURE 2 FOR ADDITIONAL LEGEND ITEMS AND NOTES.
3. THE BACKGROUND MONITORING WELL FOR THE LANSING POWER STATION IS MW6.

400 0 400

SCALE: 1" = 400'

PROJECT NO.	25222070.00	DRAWN BY:	KP
DRAWN:	10/26/2022	CHECKED BY:	RM
REVISED:	01/27/2023	APPROVED BY:	TK 01/30/2023

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

POTENTIOMETRIC SURFACE MAP
OCTOBER 17-19, 2022

FIGURE 6

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Appendix A

Regional Hydrogeologic Information

Table LAN-3 Regional Hydrogeologic Stratigraphy
Lansing Generating Station / SCS Engineers Project #25215053

Strategic Unit			Hydrogeologic Units	Type of Rock	Hydrologic Conditions	Thickness Range (ft)	Age of Rocks*
Quaternary		Recent and Pleistocene deposits	Surficial aquifers-Alluvium, Drift, Buried-channel	Sand and gravel interbedded with silt and clay	Mostly unconfined local aquifers, some artesian, small-to-large yields	0 – 305	0 – 2.8 million years (m.y.)
Devonian	Yellow Spring Group (Gp)	Lime Creek Formation (Fm)	Confining layers	Shale, some dolostone	Non-aquifer	0 – 50	365 – 405 m.y.
	Cedar Valley Gp	Lithograph City Fm Coralville Fm Little Cedar Fm	Silurian-Devonian aquifer	Limestone and dolostone, thin shales	Major aquifer, mostly artesian, moderate-to-large yields	0 – 400	
	Wapsipinicon Gp	Pinicon Ridge Fm Spillville Fm		Dolostone and limestone			
Silurian		Scotch Grove Fm Hopkinton Fm Blanding Fm Tete des Morts Fm		Dolostone, locally with much chert, local shale as cavern fillings			405 – 425 m.y.
Ordovician	Maquoketa Fm	Brainard Member Fort Atkinson Member Clermont Member Elgin Member	Maquoketa Fm, confining beds	Shale and dolostone, some chert	Non-aquifer to local aquifer, small-to-moderate yields	0 – 300	425 – 455 m.y.
			Fort Atkinson – Elgin aquifer				
	Galena Gp	Dubuque Fm Wise Lake Fm Dunleith Fm Decorah Fm	Galena aquifer	Limestone and dolostone, minor chert, shale at base and locally in upper part	Local aquifer, confined and unconfined, small-to-moderate yields	0 – 240	455 – 460 m.y.
		Platteville Fm Glenwood Fm	Decorah-Platteville-Glenwood confining beds	Limestone and shale	Non-aquifer	0 – 50	
		St. Peter Sandstone Prairie du Chien Gr	Cambrian-Ordovician aquifer	Sandstone	Major aquifer, mostly artesian, large yields	0 – 580	460 – 500 m.y.
				Dolostone, minor sandstone and chert			500 – 503 m.y.
Cambrian		Jordan Sandstone		Sandstone, dolomitic			
		St. Lawrence Fm Lone Rock (Franconia) Fm	Cambrian confining beds	Dolostone, silty	Non-aquifer	0 – 400	503 – 508 m.y.
				Fine, sandstone, siltstone, shale, and minor dolostone			
		Wenowoc (incl Ironton-Galesville sandstone) Fm Eau Claire Fm Mt. Simon Sandstone	Dresbach aquifer	Sandstone	Artesian aquifer, large yields	0 – 1,950	508 – 515 m.y.
				Fine sandstone, siltstone, and shale			
				Sandstone			
Pre-C		Undifferentiated crystalline rocks	Unknown	Igneous and metamorphic rocks	Unknown	Unknown	570 m.y. – > 2 billion years

*Age determinations as used on COSUNA charts published by AAPG-USGS

Source: "Water Resources of Southeast Iowa," Iowa Geologic Survey Water Atlas No. 4.

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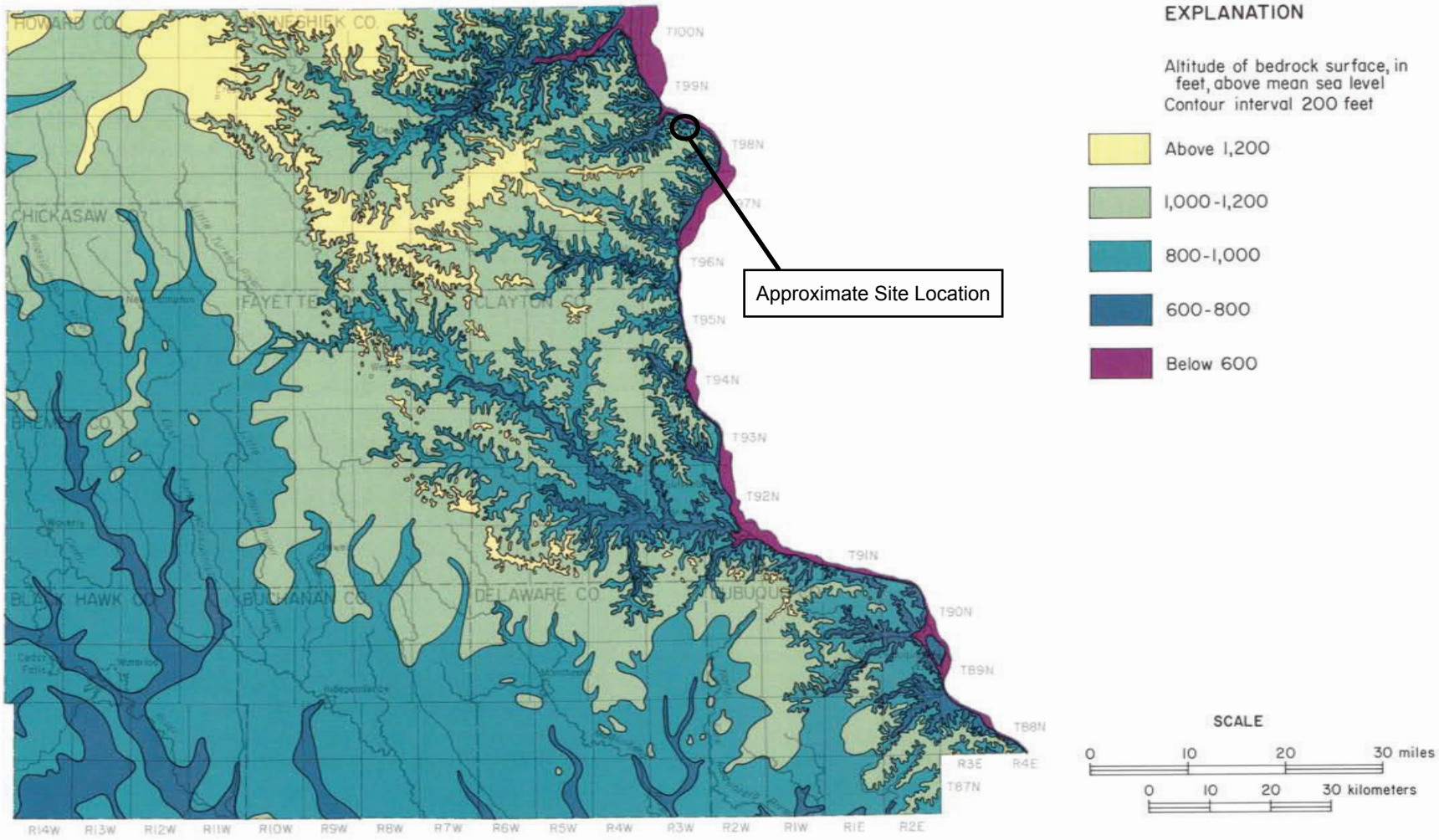


Figure 30. Altitude and configuration of the bedrock surface

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

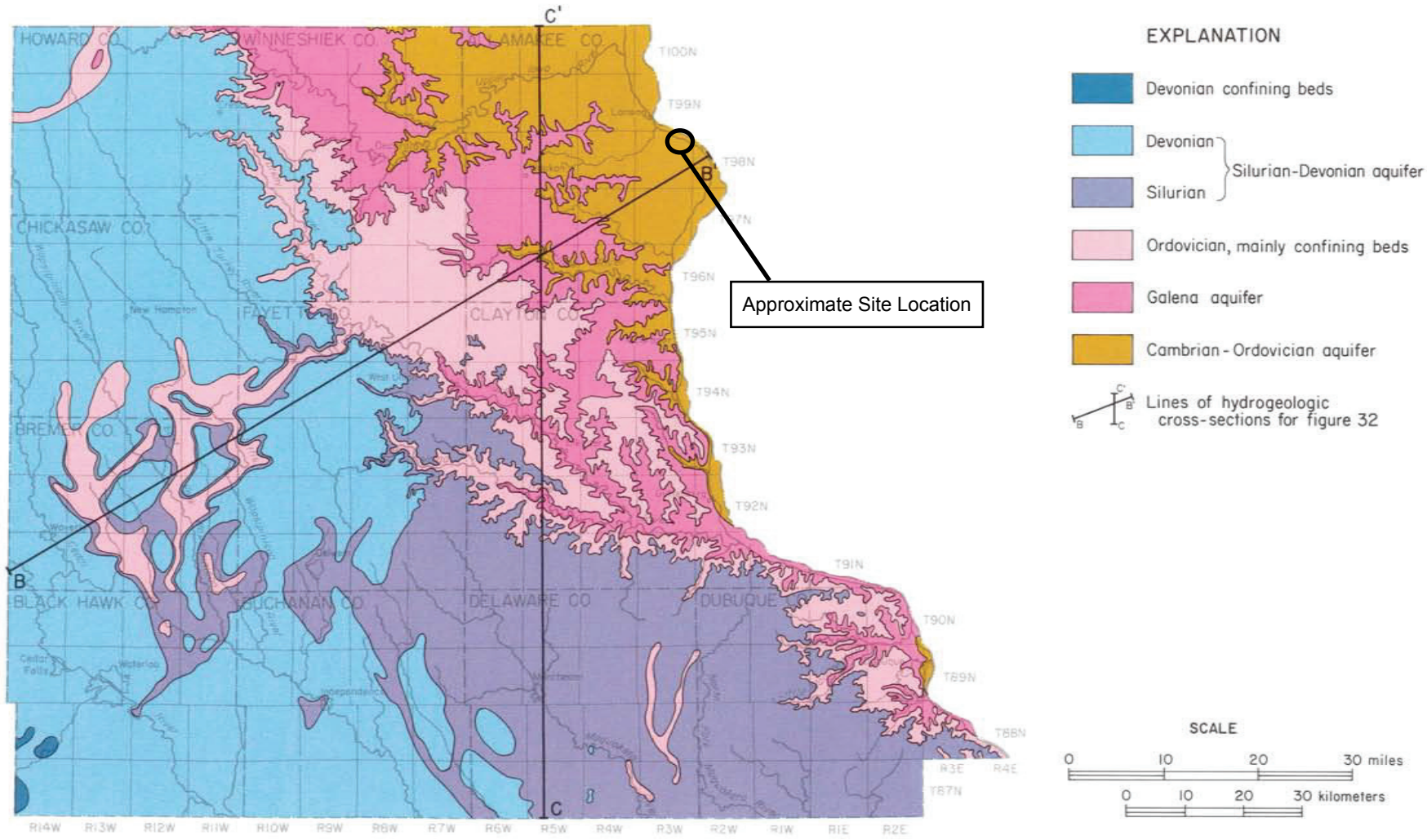


Figure 31. Bedrock hydrogeologic map

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

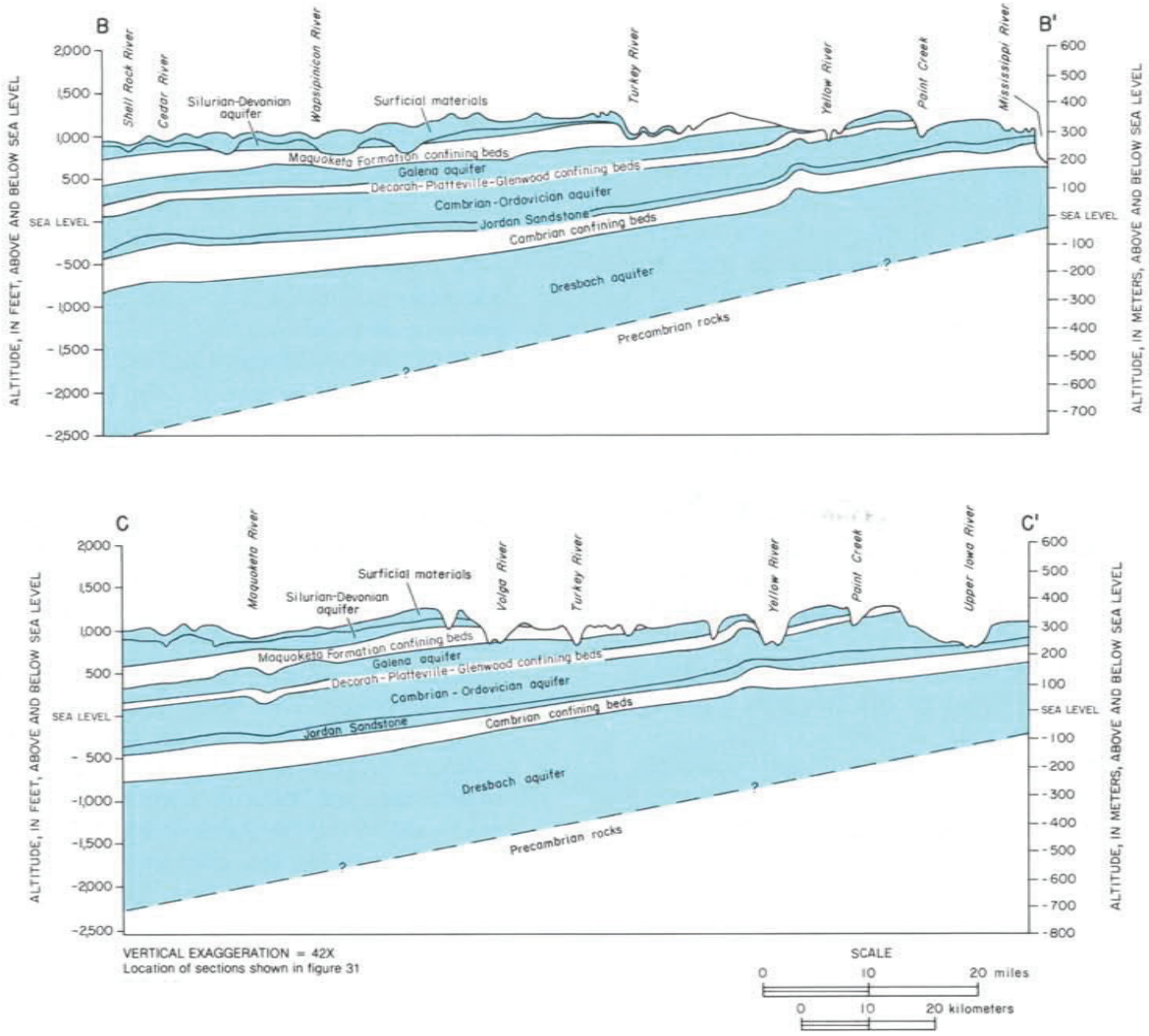


Figure 32. Hydrogeologic cross-sections

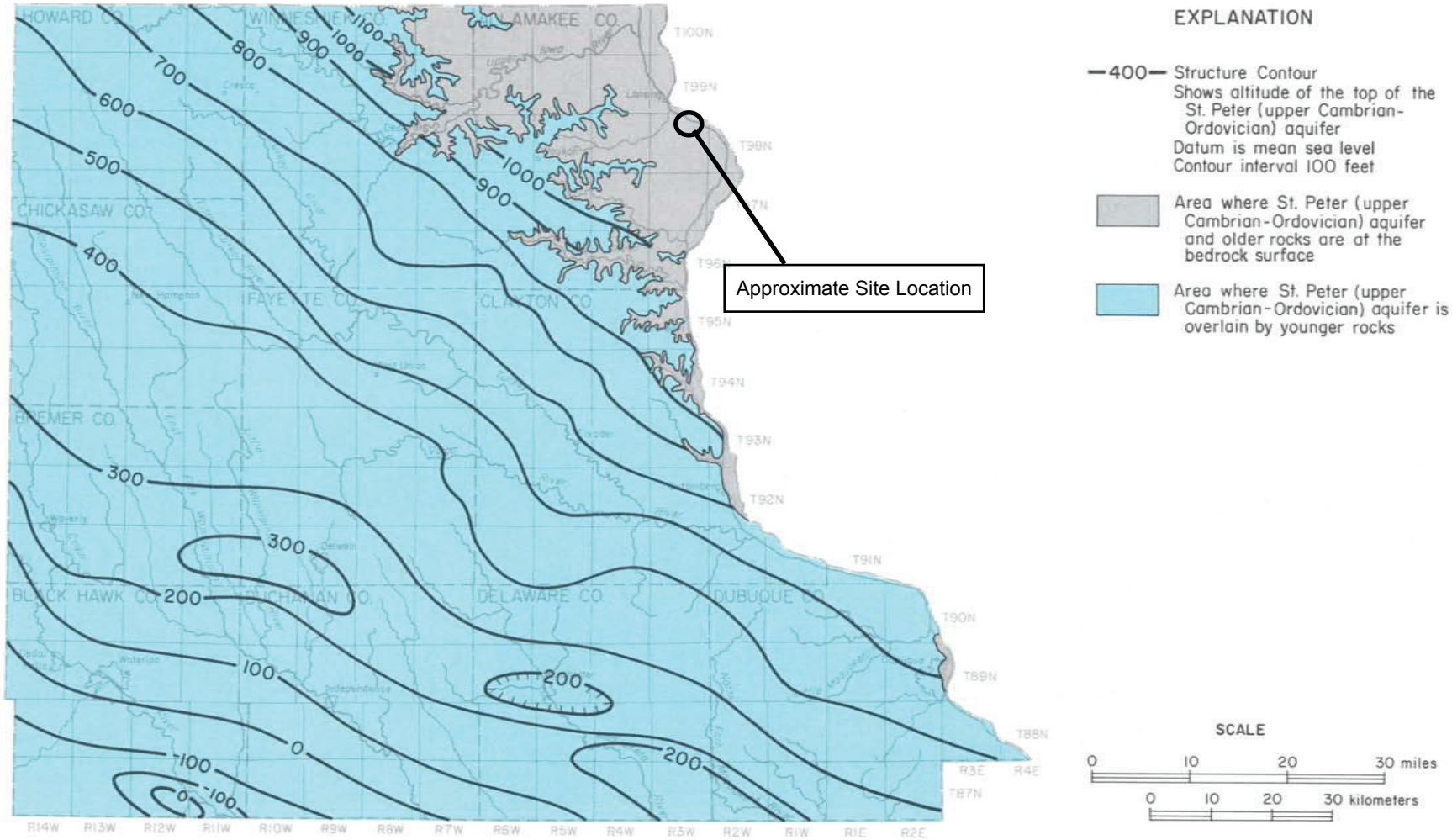


Figure 38. Altitude of the top of the St. Peter (upper Cambrian-Ordovician) aquifer

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

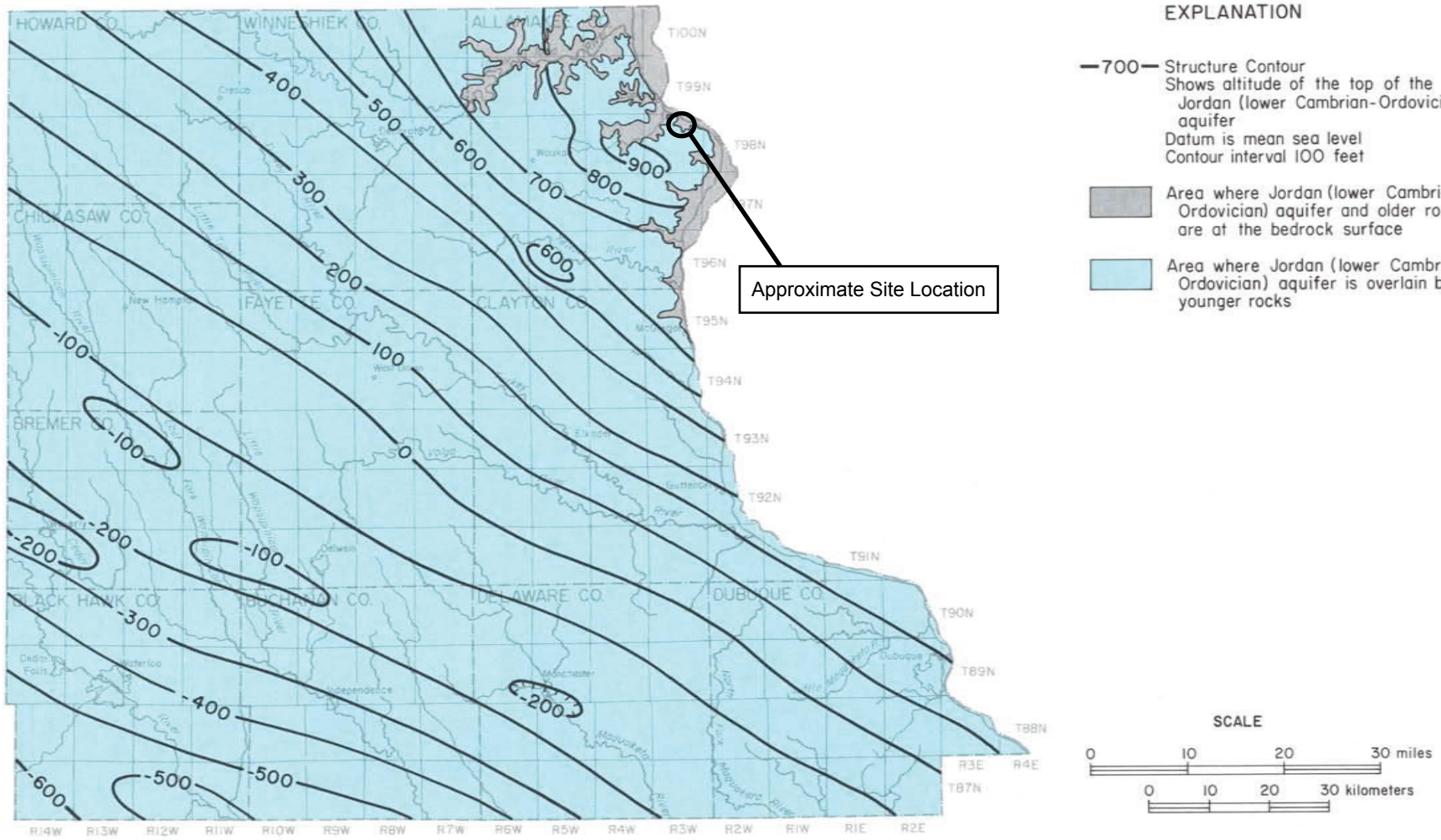


Figure 39. Altitude of the top of the Jordan (lower Cambrian-Ordovician) aquifer

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

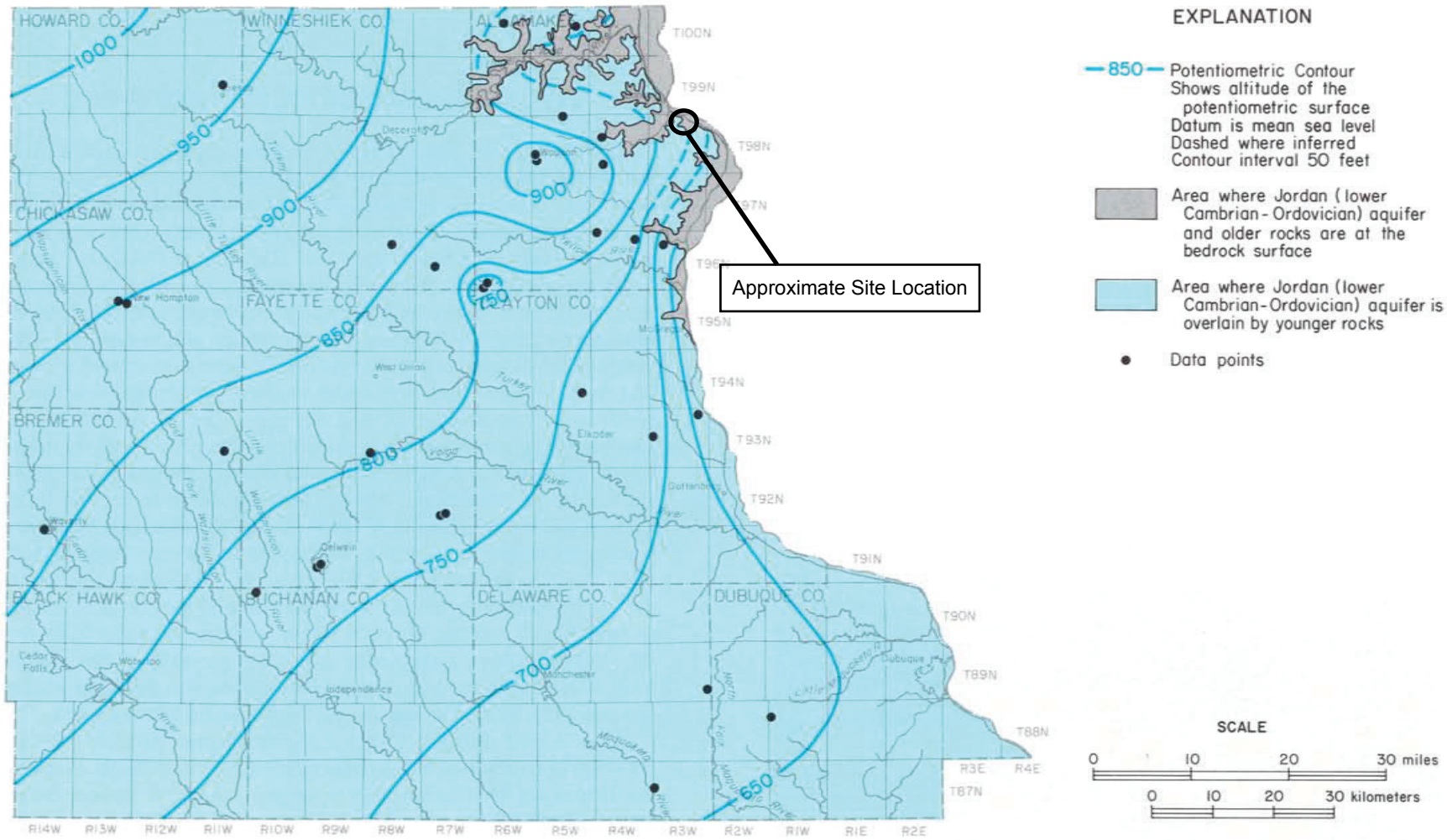


Figure 56. Potentiometric surface of the Jordan (lower Cambrian-Ordovician) aquifer

Source: Horick, Paul J., Water Resources of Northeast Iowa, Iowa Department of Natural Resources Water Atlas Number 8, October

Appendix B

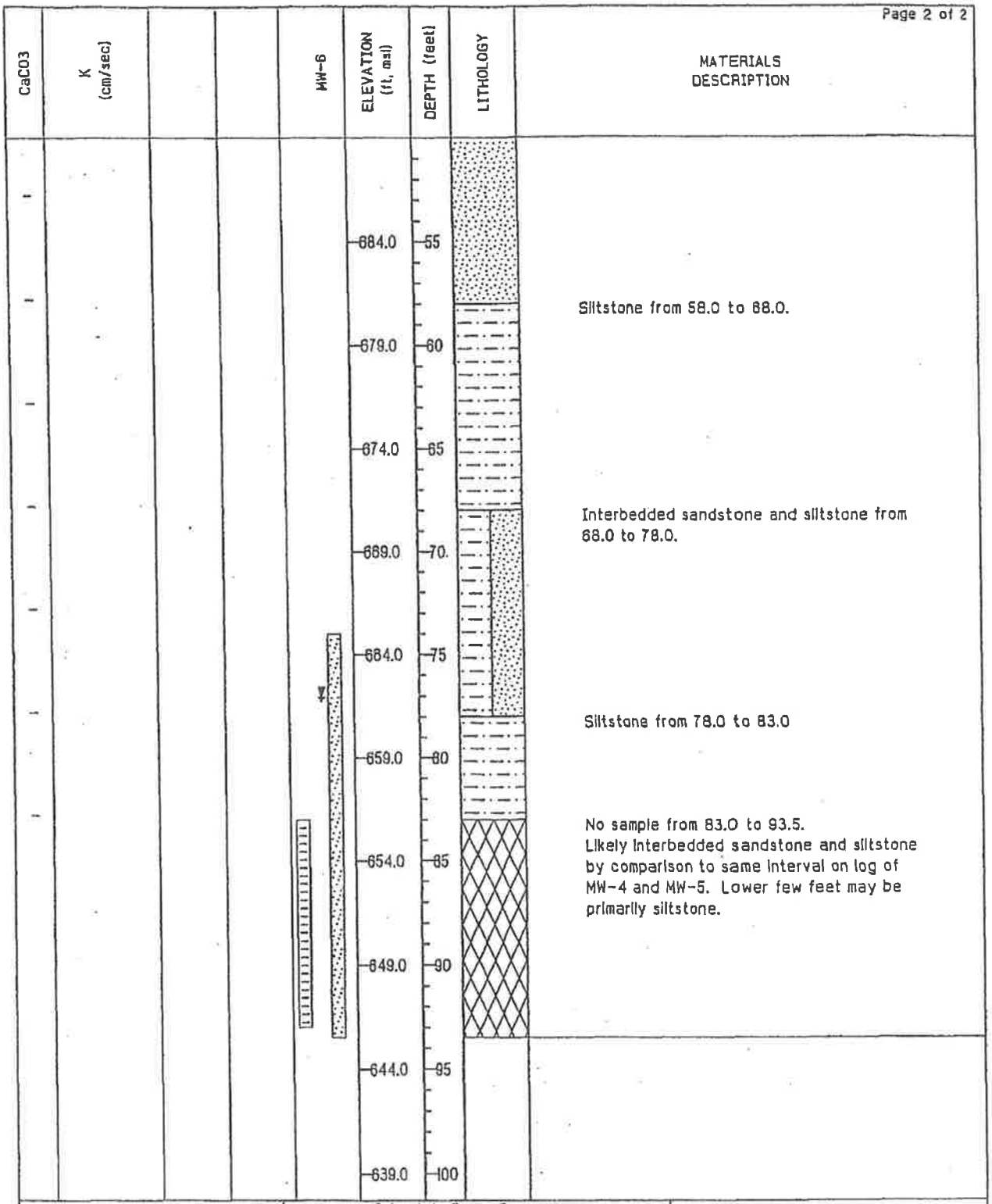
Boring Logs and Well Construction Documentation

CaCO3	K (cm/sec)			MW-6	ELEVATION (ft, msl)	DEPTH (feet)	LITHOLOGY	MATERIALS DESCRIPTION
					734.0	5		0.0 to 6.0 SILT Topsoil developed in silt from 0.0 to 1.5. Topsoil is dark brown. Clayey silt, trace sand is loess or colluvium (slopewash) derived from loess. Medium brown, changing gradually to yellow brown below 5.0.
					729.0	10		6.0 to 37.0 TALUS Light brown sandy silt with dolomite chunks.
					724.0	15		
					719.0	20		
					714.0	25		
					709.0	30		
					704.0	35		
					699.0	40		37.0 to 93.5 INTERBEDDED SANDSTONE AND SILTSTONE Sandstone is fine-grained, with quartz silt matrix, glauconitic. Siltsone contains minor amount of very fine quartz sand and glauconite. Sandstone is laminated light greenish gray with creamy color. Siltstone is light greenish gray. Sandstone from 37.0 to 58.0.
					694.0	45		
					689.0	50		

Howard R. Green Company
CONSULTING ENGINEERS

PROJECT Interstate Power Company
PROJECT NUMBER 717680-J
SURFACE ELEVATION 739.3 Feet MSL
TOTAL DEPTH OF HOLE 93.5 Feet

LOG OF MW-6
LOCATION Lansing, Iowa
GEOLOGIST Barbara Torney



Howard R. Green Company
CONSULTING ENGINEERS

PROJECT Interstate Power Company
PROJECT NUMBER 717680-J
SURFACE ELEVATION 739.3 Feet MSL
TOTAL DEPTH OF HOLE 93.5 Feet

LOG OF MW-6

LOCATION Lansing, Iowa
GEOLOGIST Barbara Torney

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL- Lansing Generating Station SCS#: 25215135.70		B-301

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Mike Mueller Cascade Drilling	11/2/2015	11/2/2015	hollow stem auger

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-301	Feet	639.4 Feet	8.0 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,744 N, 5,541,108 E S/C/N
NW 1/4 of SW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	POORLY GRADED SAND, medium grained, very dark gray brown (10YR 3/2).										
			2		SP									
S1	23	10 31 38 48	3							M				
			4											
			5	POORLY GRADED SAND WITH SILT, medium grained, dark yellowish brown (10YR 3/4).										
S2	24	32 47 50	6		SP-SM					M				
			7											
			8	POORLY GRADED SAND WITH SILT AND GRAVEL, medium grained sand, large grained gravel, dark yellowish brown (10YR 3/6).										
S3	22	18 33 47 43	9		SP-SM					M				
			10	POORLY GRADED SAND WITH SILT, medium grained, dark yellowish brown (10YR 3/6).										
S4	24	36 46 50	11							S				Water @ 10 ft bgs
			12		SP-SM									
S5	22	13 9 7 10	13							S				
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel: 608-224-2830
Kyle Mueller	SCS Engineers 2830 Dairy Drive Madison, WI 53718	Fax:

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number B-301

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S6	20	3 2 4	16	SILT, black (10YR 3/1).	ML					S				
			17											
S7	24	2 2 2 2	18	SILT WITH SAND, black (10YR 3/1).	ML					S				
			19											
S8	24	2 2 4	20	POORLY GRADED SAND WITH SILT, black (10YR 3/1).	SP-SM					S				
			21											
			22											
S9	24	2 9 12 14	23	SILT, dark olive gray (5Y 3/2).	ML					S				
			24											
			25											
			26	End of Boring at 26 ft bgs.										

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SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL- Lansing Generating Station SCS#: 25215135.70		B-302

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Mike Mueller Cascade Drilling	11/4/2015	11/4/2015	hollow stem auger

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-302	Feet	635.9 Feet	8.0 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,929 N, 5,541,179 E S/C/N
NW 1/4 of SW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	POORLY GRADED SAND, medium grained, dark grayish brown (10YR 4/2).										
			2											
S1	24	6 14 17 19	3		SP					M				
			4											
			5											
S2	24	26 45 50	6	SANDY SILT, trace small gravel, black (10YR 3/1).						M				
			7											
S3	24	12 13 10 8	8							M				
			9											
			10		ML									
S4	11	9 11 13 12	11	Large gravel						S				Saturation @ 11 ft bgs
			12											
S5	8	32 23 30 36	13							S				
			14	Large gravel										
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel: 608-224-2830
	SCS Engineers 2830 Dairy Drive Madison, WI 53718	Fax:

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number B-302

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S6	24	5 5 6 8	16	SANDY SILT, trace small gravel, black (10YR 3/1). *(continued)*	ML					S				
			17											
S7	18		18	Silt, Black (10YR 3/1).	ML					S				
			19											
			20	End of Boring at 20 ft bgs.										

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SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL - Lansing Generating Station SCS#: 25218221.00		MW-302A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	12/16/2019	12/17/2019	Rotosonic

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			13.01 Feet	636.2 Feet	6 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3957930.08 N, 5541186.04 E S / C / N
SW 1/4 of NW 1/4 of Section 02 , T 98 N, R 03 W
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1–8	Hydrovac to 9' to check for utilities.										
S1	46"		9–10	POORLY GRADED SAND with silt, clay and trace gravel, dark gray.	SP					W				
			11–12	SILT, gray, trace gravel.	ML									
S2	39"		13–15	SILTY GRAVEL WITH SAND, gray, sand is fine to medium grained, gravel is subangular to angular.	GM					W				
			16											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers	Fax:

Boring Number MW-302A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			17	SILTY GRAVEL WITH SAND, gray, sand is fine to medium grained, gravel is subangular to angular. *(continued)*	GM									
			18	SILT, dark gray, trace roots.										
			19											
			20		ML									
S3	48"		21							W				
			22	LEAN CLAY, dark gray, roots.										
			23											
			24											
			25		CL									
S4	40"		26	Same but dark brown.						W				
			27											
			28											
			29	SILTY SAND, gray to dark gray, fine to medium grained.										
			30		SM									
			31	LEAN CLAY, tan with yellow to brown mottling and gray layers, trace silt.										
S5	48"		32		CL					W				
			33	LEAN CLAY, reddish brown, massive, very dense.										
			34											
			35		CL									
			36	LEAN CLAY, gray.										
S6	48"		37							W				
			38		CL									
			39	POORLY GRADED SAND, brown, fine to medium grain, trace gravel.										
			40											
			41		SP									
S7	48"		42	Same with trace shells						W				

Boring Number MW-302A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			43	POORLY GRADED SAND, brown, fine to medium grained, trace gravel. *(continued)*	SP									
			44	SILTY GRAVEL, light brown, subangular.	GM									
			45											
			46	LEAN CLAY, mostly light brown, trace gray, trace silt.										
S8	48"		47		CL					W				
			48											
			49	SILTY GRAVEL WITH SAND, light brown, gravel is subangular.	GM									
			50	End of boring at 50 feet.										

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SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL- Lansing Generating Station SCS#: 25215135.70		B-303

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Mike Mueller Cascade Drilling	11/2/2015	11/2/2015	hollow stem auger

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-303	Feet	653.9 Feet	8.0 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,857 N, 5,541,622 E S/C/N
NW 1/4 of SW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	SILTY SAND, very dark gray (5Y 3/1).	SM									
S1	24	5 16 17 24	3	POORLY GRADED SAND, medium grained, dark grayish brown (10 YR 4/2).	SP					M				
S2	24	11 8 10	6							M				
S3	24	11 38 50	8	POORLY GRADED SAND , medium grained, grayish brown (2.5Y 5/2).						M				
S4	18	16 35 50	11		SP					M				
S5	16	27 50 50	13							M				
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm SCS Engineers
2830 Dairy Drive Madison, WI 53718

Tel: 608-224-2830
Fax:

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number B-303

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S6	0	38 50	16	POORLY GRADED SAND , medium grained, grayish brown (2.5Y 5/2). *(continued)*						M				Rock in Spoon
			17		SP									
S7	18	17 25 40 47	18							S				Saturation @17 ft bgs.
			19											
			20	POORLY GRADED SAND, medium grained, very dark gray (5Y 3/1).										
S8	17	37 48 44	21							S				
			22											
S9	18	11 24 26 27	23		SP					S				
			24											
			25											
S10	24	37 50	26							S				
			27	End of Boring at 27 ft bgs.										

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SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL Lansing Generating Station SCS#: 25218221.00		MW304

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Eric Wetzel Roberts Environmental Drilling, Inc.	5/15/2019	5/15/2019	4.25" HSA

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW304	623.61 Feet MSL	635.5 Feet MSL	8.5 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,893 N, 5,540,876 E S/C/N
SE 1/4 of NE 1/4 of Section 3, T 98 N, R 3 W
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	12	3 6 3 3	1–2	SILT, mottled, (10YR 3/2), some black coal looking material.	ML					M				
	18	1 2 2 1	3–4	LEAN CLAY, (10YR 4/3), soft, some organic material.	CL					W				
	12	2 2 3 2	5–6	SILT, (10YR 2/2), uniform, trace fine sand and clay.	ML					M				
	18	1 1 3 2	7–8							W				
	18	1 2 1 1	9–10	POORLY GRADED SAND, fine to coarse, (10YR 3/4), (Alluvial).	SP					W				
	12	0 0 1 1	11–12							W				
	12	0 0 1 1	13–14							W				
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature for Zach Watson
Firm SCS Engineers
2830 Dairy Drive, Madison, WI 53718
Tel:
Fax:

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW304

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
		0 0 1 1	16	POORLY GRADED SAND, fine to coarse, (10YR 3/4), (Alluvial). *(continued)*						W				
			17	Same as above but more coarse, (2.5YR 5/4), trace silt.	SP									
		2 5 6 6	18							W				
			19											
			20	End of Boring at 20 feet.										

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SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL - Lansing Generating Station SCS#: 25218221.00		MW-304A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	12/18/2019	12/19/2019	Rotosonic

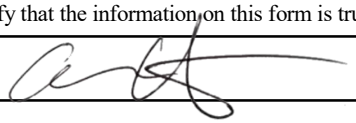
Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			10.7 Feet	635.6 Feet	6 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3957884.99 N, 5540876.5 E S / C / N
SE 1/4 of NE 1/4 of Section 03 , T 98 N, R 03 W
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovac to 9' to check for utilities.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10	SILT, grayish brown, toots and sticks.	ML									
			11	POORLY GRADED SAND WITH SILT AND GRAVEL, fine to medium grained, reddish brown.										
S1	49"		12		SP-SM					W				
			13											
			14	POORLY GRADED SAND, reddish brown, fine to medium grained.										
			15		SP									
			16											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature  Firm SCS Engineers Tel: Fax:

Boring Number MW-304A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			17	POORLY GRADED SAND, reddish brown, fine to medium grained. *(continued)*										
S2	21"		18							W				
			19		SP									
			20	Same but light brown, mostly fine grained.										
			21											
			22											
S3	59"		23							W				
				SANDY SILT, brown, fine grained.										
			24											
			25											
			26		ML									
			27											
S4	24"		28							W				
			29											
			30	SILTY SAND, light brown, fine grained.										
			31											
			32											
S5	30"		33		SM					W				
			34											
			35											
			36	POORLY GRADED SAND, light brown, fine to medium grained.										
			37											
S6	57"		38							W				
			39		SP									
			40											
			41											
				POORLY GRADED SAND, orange, fine grained.	SP									
			42	SANDY SILT WITH GRAVEL, sand is fine grained.	ML									

Boring Number MW-304A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S7	54"		43 44	SANDY SILT WITH GRAVEL, sand is fine grained.*(continued)*	ML					W				
S8	9"		45 46	POORLY GRADED SAND, light brown, fine grain, trace coarse grained.	SP					W				
S9	48"		47 48 49 50 51	SANDY SILT WITH GRAVEL, light brown with trace yellow, fine grained. End of boring at 51 feet.	ML					W				

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL Lansing Generating Station SCS#: 25218221.00		MW305

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Eric Wetzel Roberts Environmental Drilling, Inc.	5/16/2019	5/16/2019	4.25" HSA

Unique Well No	DNR Well ID No	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW305	629.12 Feet MSL	631.8 Feet MSL	8.5 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,109 N, 5,541,533 E S/C/N
SE 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovaced to 9.5 feet.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10	FAT CLAY, dark greenish gray, (GLEY 13/10Y), soft, trace red sand, wood pieces and roots.										
	24	1 1 1 1	11							W				
			12		CH									
	24	0 0 0 2	13							W				
			14	Sand seams at 13.5 and 14.5 feet.										
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] for Zach Watson
Firm SCS Engineers
2830 Dairy Drive, Madison, WI 53718
Tel:
Fax:

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW305

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				FAT CLAY, dark greenish gray, (GLEY 13/10Y), soft, trace red sand, wood pieces and roots. *(continued)*	CH					W				
			16	End of Boring at 16 feet.										

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SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL Lansing Generating Station SCS#: 25218221.00		MW306

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Eric Wetzel Roberts Environmental Drilling, Inc.	5/16/2019	5/16/2019	4.25" HSA

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW306	623.05 Feet MSL	636.7 Feet MSL	8.5 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,977 N, 5,541,203 E S/C/N
NE 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovaced to 12 feet.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10											
			11											
			12	POORLY GRADED SAND, medium to coarse, rusty in color, (10YR 4/6), trace fine silt.										
	12	1 2 4 3	13		SP					W				
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature for Brad Watson

Firm SCS Engineers
2830 Dairy Drive, Madison, WI 53718

Tel:
Fax:

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW306

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	18	1 2 2 4	16	POORLY GRADED SAND, medium to coarse, rusty in color, (10YR 4/6), trace fine silt. *(continued)* Same as above but gray, (10YR 4/2).						W				
	18	1 1 2 2	17							W				
			18											
	18		19							W				
			20		SP									
	18		21							W				
			22											
	18	3 1 2 2	23							W				
			24											
	18	2 1 3 2	25							W				
			26	End of Boring at 26 feet.										

SCS ENGINEERS
Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
IPL - Lansing Generating Station SCS#: 25218221.00		MW-306A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	12/17/2019	12/18/2019	Rotosonic

Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			16.3 Feet	636.7 Feet	6 in

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3958980.99 N, 5541196.46 E S / C / N
NE 1/4 of NW 1/4 of Section 02, T 98 N, R 03 W
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	Civil Town/City/ or Village
	Allamakee	Lansing

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	Hydrovac to 9' to check for utilities.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											
			10	POORLY GRADED SAND, reddish brown, trace shells, medium grained.										
			11											
			12											
S1	52"		13		SP					W				
			14											
			15											
			16											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers	Fax:

Boring Number MW-306A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			17	POORLY GRADED SAND, reddish brown, trace shells, medium grained. *(continued)*										
S2	56"		18		SP					W				
			19											
			20	POORLY GRADED SAND, gray, fine to medium grained, trace coarse grained and shells.										
			21											
			22											
S3	57"		23							W				
			24											
			25	Same, mostly medium grained with fine grained.										
			26											
			27											
S4	54"		28							W				
			29											
			30	Same, fine to medium grained with trace coarse grained.	SP									
			31											
			32											
S5	58"		33							W				
			34											
			35	Same with shell fragments.										
			36											
			37											
S6	53"		38							W				
			39											
			40											
			41	LEAN CLAY, dark gray, massive, very dense with roots and sticks.										
			42		CL									

Boring Number MW-306A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S7	58"		43	LEAN CLAY, dark gray, massive, very dense with roots and sticks. *(continued)*	CL					W				
			44	POORLY GRADED SAND, gray to dark gray, fine grained, trace coarse grain with shell fragments.										
			45											
			46											
			47		SP									
S8	52"		48							W				
			49											
			50	POORLY GRADED SAND, light gray, fine to medium grained.										
			51		SP									
			52	POORLY GRADED SAND, reddish tan, fine to medium grained with shell fragments.										
S9	58"		53							W				
			54		SP									
			55											
			56	End of boring at 56 feet.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-307

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		628.5 Feet	640.70 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,777 N, 5,541,269 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 2.56 "
Long -91 ° 10 ' 9.97 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1–9	Hydrovaced to 12' below ground surface with some cave-in to about 10'.										
S1	60		10–15	POORLY GRADED SAND, medium grained, yellowish brown (10YR 5/4) with 4" layer of gray sand (10YR 5/1), shells and subroundd gravel.	SP					W				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	Same as above , shells still present with more gray sand.	SP									
			17											
S2	60		18	SILT, dark gray to black (5Y 2.5/2), with trace very fine grained sand and gravel/cobbles.	ML				0.75	W/M				
			19											
			20	Same as above but gray (5Y 4/1).										
S3	12		21							W/M				
				End of boring at 21' below ground surface.										
				Well placed from 20' with 10' screen at 20 to 10'.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-307A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		622.8 Feet	640.60 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,775 N, 5,541,261 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 2.54 "
Long -91 ° 10 ' 10.08 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1–9	Hydrovaced to 12' below ground surface with some cave-in to about 10'.										
S1	60		10–15	POORLY GRADED SAND, medium grained, yellowish brown (10YR 5/4) with 8" layer of gray sand (10YR 5/1) with trace shells and sub-rounded gravel.	SP					M/W				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16											
			17											
S2	48		18		SP					W				
			19											
			20	SILT, dark gray, dark gray to black, (5Y 2.5/2) with fine grained sand and trace gravel.										
			21											
			22											
S3	60		23		ML				1.5-2.5	M				
			24											
			25	LEAN CLAY, black (5Y 2.5/1), soft.										
			26											
			27											
S4	60		28						0.75	W				
			29											
			30	Same as above but very soft with trace fine to medium grained sand.	CL									
			31											
			32											
S5	60		33						0.0	M/W				
			34											
			35											
			36	POORLY GRADED GRAVEL WITH SAND, fine to coarse gravel, sub-rounded to sub-angular, sand is fine to coarse grained, dark brownish gray (2.5Y 4/2) with trace silt.										
			37											
S6	24		38		GP				0.0	W				
			39											
			40											

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			41		GP									
			41	SILT, dark gray (5Y 3/1), with trace sand, gravel and cobbles.	ML									
S7	56		42	WELL GRADED SAND, fine to medium grained, yellow (2.Y 7/6) with gravel and pieces of shell.	SW				0.0	W				
			43	SILT, dark gray (5Y 4/1) and transitions to olive brown (2.5Y 4/4), very soft.	ML									
			44											
			45	POORLY GRADED SAND, fine to medium grained, light olive brown (2.5Y 5/4) with trace silt.	SP									
			46											
			47	SANDY SILT, light olive brown (2.5Y 5/3), very soft, sand is fine to medium grained.	ML									
			48	SILTY SAND, fine to coarse grained, olive yellow (2.5Y 6/8).	SM									
S8	70		49	POORLY GRADED GRAVEL WITH SAND AND SILT, coarse gravel, sand and silt are light olive brown (2.5Y 5/4), sand is fine to coarse grained.	GP-GM				0.0	W				
			50	SANDY SILT WITH GRAVEL, gray to dark gray (2.5Y 4/1), sand is fine to coarse grained, gravel is coarse, sub-rounded with trace cobbles, very soft.	ML									
			51											
			52	End of boring at 52' below ground surface.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-308

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		618.8 Feet	635.70 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,236 N, 5,541,333 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 7.07 "
Long -91 ° 10 ' 8.94 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			1	Hydrovaced to 8 feet below ground surface and blind drilled the from 8 to 10'.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											Blind drilled 2 ft of slough from 8 to 10' bgs.
			10	WELL SORTED SAND, fine to coarse grained, very dark grayish brown (10YR 3/2).	SW									
			11	SILT, gray to dark gray (2.5Y 3/2) with sticks, roots, and trace sand throughout, very soft.										
			12											
S1	60		13		ML				0.0	W				
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-308

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	Same as above but with trace roots, no sticks, and pockets of sand, very sort.										
			17											
S2	60		18		ML				0.0	W				
			19											
			20	Same as above but very trace roots.										
S3	40		21	SANDY SILT, gray to dark gray, (2.5Y 3/2), no visible roots, very soft.	ML				0.0	W				slough in hole, actual recovery was ~2"
			22	End of boring at 22' below ground surface.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-309

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/23/2021	6/23/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		619.4 Feet	636.10 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,229 N, 5,541,010 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43° 20' 7.10"
Long -91° 10' 13.31"
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Hydrovaced to 8' below ground surface.										
			1	Hole collapsed to 6' bgs.										
			2											
			3											
			4											
			5											
			6	WELL GRADED SAND, fine to coarse grained, grayish brown to brown (10YR 4/3) with trace coal (slough).										
S1	20		7											
			8		SP									Slough from 6 to 10 feet.
			9											
			10	SILT, dark gray to black (5Y 2.5/1) with trace roots, 4" layer of black organic soil with trace gravel and sticks.										
			11											
			12		ML-OL									
S2	60		13											
			14	SILTY SAND WITH GRAVEL, fine to coarse grained, gray to dark gray (5Y 4/1), gravel is										
			15		SM									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-309

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	sub-rounded. SILT, dark gray (5Y 3/1), with roots and trace sticks, very soft.										
			17											
S3	60		18		ML									
			19											
			20	SANDY SILT, very dark gray (5Y 3/1) with roots, trace gravel and peices of limestone at bottom of sample, sand is fine to medium grain.										
			21											
			22											
S4	60		23		ML									
			24											
			25	End of boring at 25' below ground surface. Well placed from 22' with 10' screen at 22 to 12'.										

Print Form

IOWA DEPARTMENT OF NATURAL RESOURCES

MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-Lansing Generating Station Permit No.:

Well or Piezometer No: MW-301

Dates Started: 11/2/15 Date Completed: 11/2/15

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft):

Specify corner of site: NW

Distance & direction along boundary: 540' SE

Distance & direction from boundary to wall: 230' NE

Elevations (± 0.01 ft MSL):

Ground Surface: 639.35

Top of protective casing: 642.18

Top of well casing: 641.61

Benchmark elevation: 622.86, NAVD 1988 datum

Benchmark description: CP 300, iron rod in concrete

B. SOIL BORING INFORMATION

Name & Address of Construction Company:
Cascade Drilling
301 Alderson St.
Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: None

Bore Hole Diameter: 8"

Soil Sampling Method: Spoon

Depth of Boring: 26

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 15 ft

Outside casing diameter: 2.40"

Inside casing diameter: 2"

Casing joint type: threaded

Casing/screen joint type: threaded

Screen material: PVC

Screen opening size: .010

Screen length: 10 ft

Depth of well: 25 ft

Filter Pack:

Material: Red Flint

Grain size: #40

Volume: 300 lbs

Seal (minimum 3 ft length above filter pack):

Material: 3/8" bentonite chips

Placement method: Gravity

Volume:

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design:

Material of protective casing: Steel 6"

Material of grout between protective casing and well casing: sand

Protective cap:

Material: steel

Vented: ☒ Yes ☐ No Locking: ☐ Yes ☐ No

Well Cap:

Material: PVC

Vented: ☐ Yes ☒ No

D. GROUNDWATER MEASURMENT (± 0.01 ft below top of inner well casing)

Water level: 17.63 Stabilization Time: 2 hrs.

Well development method: Surged and pumped. Turbidity reduced but not eliminated.

Average depth of frostline: 4 ft.

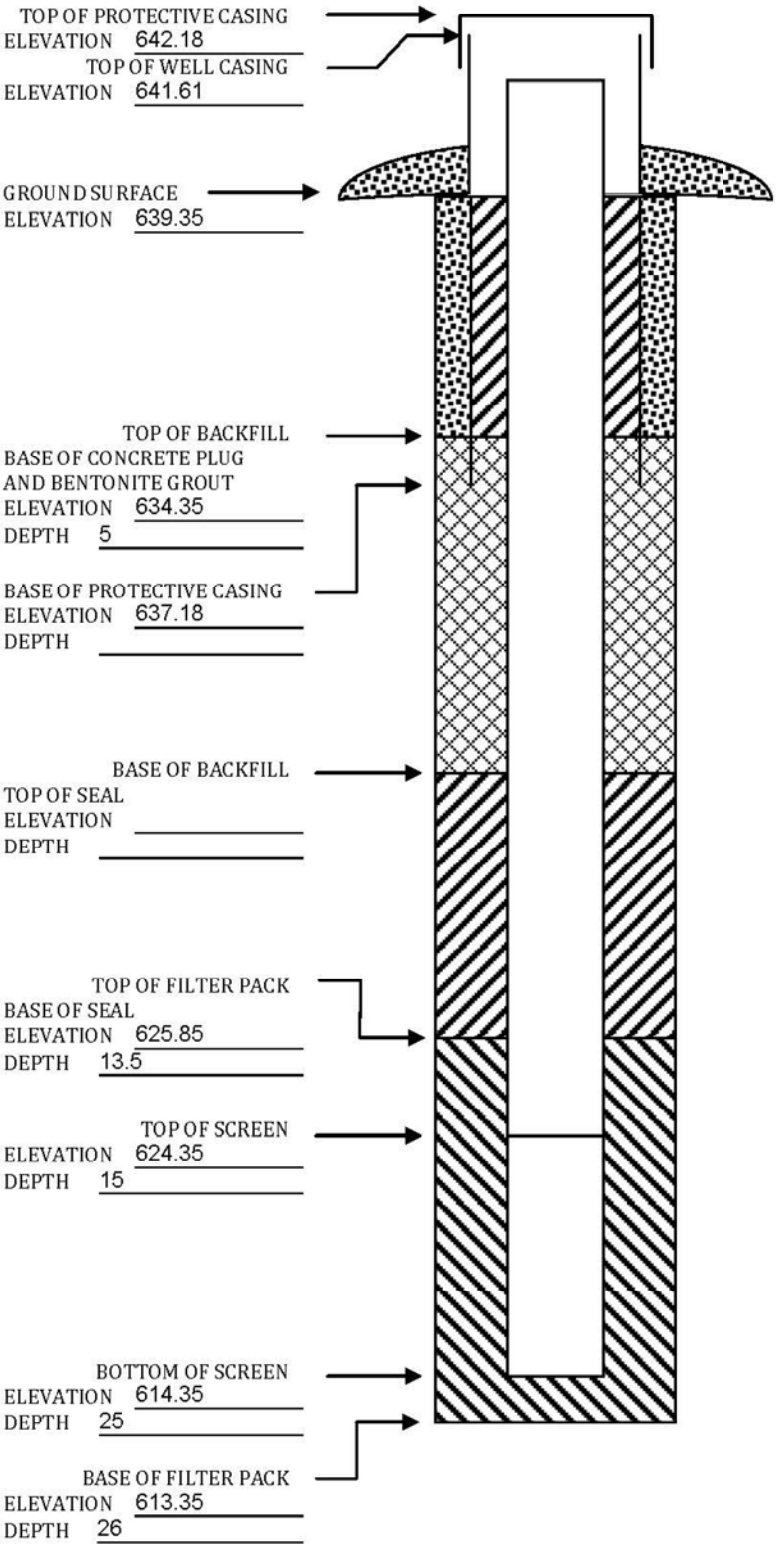
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)



Print Form

IOWA DEPARTMENT OF NATURAL RESOURCES

MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-Lansing Generating Station Permit No.:

Well or Piezometer No: MW-302

Dates Started: 11/4/15 Date Completed: 11/4/15

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft):

Specify corner of site: NW

Distance & direction along boundary: 465' SE

Distance & direction from boundary to wall: 405' NE

Elevations (± 0.01 ft MSL):

Ground Surface: 635.85

Top of protective casing: 638.72

Top of well casing: 638.40

Benchmark elevation: 633.86, NAVD 1988 datum

Benchmark description: CP 300, iron rod in concrete

B. SOIL BORING INFORMATION

Name & Address of Construction Company:

Cascade Drilling

301 Alderson St.

Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: None

Bore Hole Diameter: 8"

Soil Sampling Method: Spoon

Depth of Boring: 20 ft

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 9'

Outside casing diameter: 2.40"

Inside casing diameter: 2"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: .01"

Screen length: 10'

Depth of well: 19'

Filter Pack:

Material: Red Flint

Grain size: #40

Volume: 120 lbs

Seal (minimum 3 ft length above filter pack):

Material: 3/8" hole plug

Placement method: Gravity

Volume:

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design:

Material of protective casing: Steel 6"

Material of grout between protective casing and well casing: sand

Protective cap:

Material: steel

Vented: ☒ Yes ☐ No Locking: ☐ Yes ☐ No

Well Cap:

Material: PVC

Vented: ☐ Yes ☒ No

D. GROUNDWATER MEASURMENT (± 0.01 ft below top of inner well casing)

Water level: 9.95 Stabilization Time: 2 hrs.

Well development method: Surged and pumped. Turbidity reduced but not removed.

Average depth of frostline: 4 ft.

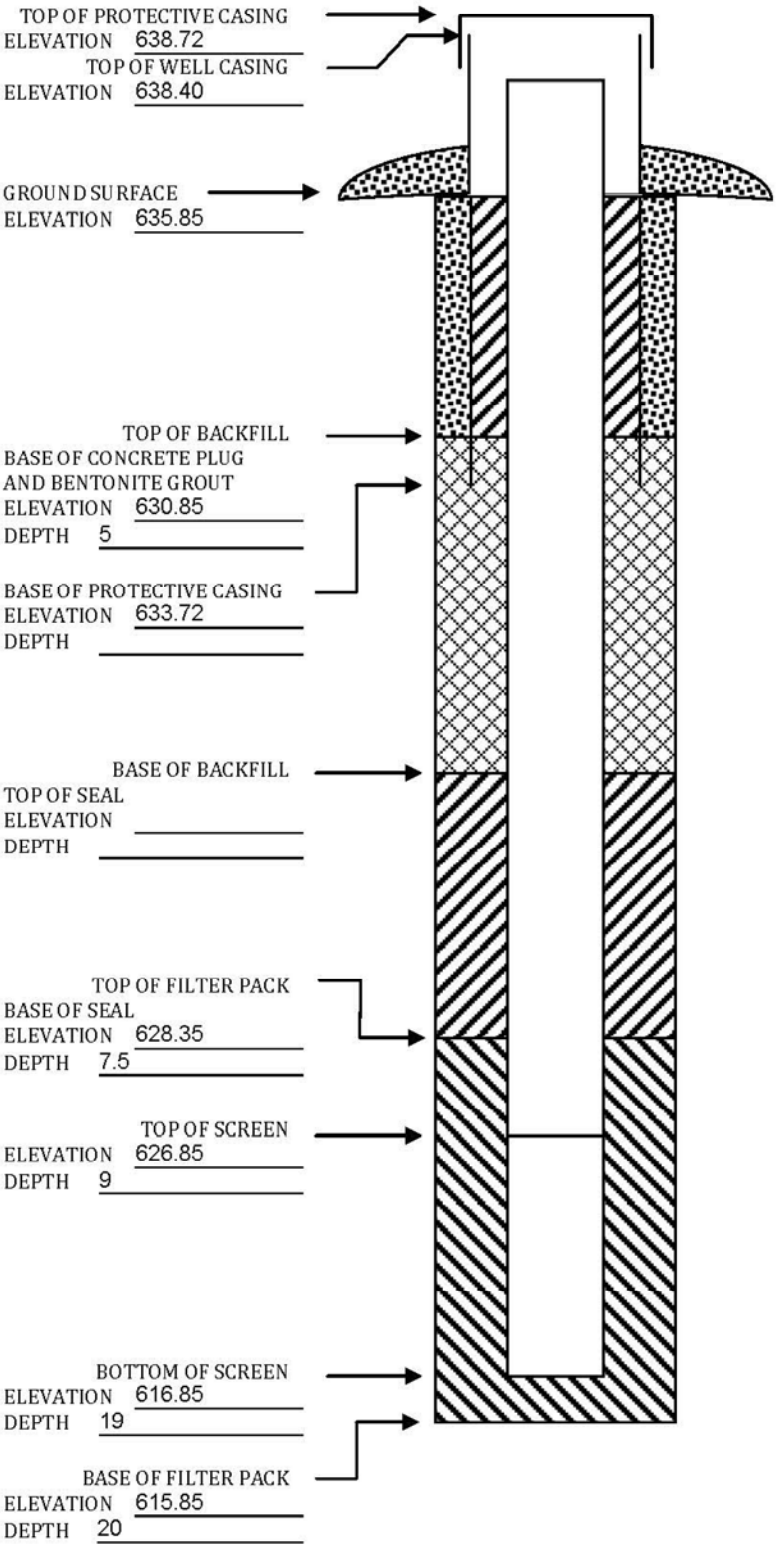
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station Permit No.:

Well or Piezometer No.: MW-302A Dates Started: 12/16/2019 Date Completed: 12/19/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW Distance and direction along boundary: 375 E

Distance and direction from boundary to surface monitoring well: 0 S

Elevation (+0.01 ft. MSL)

Ground Surface: 636.2' Top of protective casing: 638.93'

Top of well casing: 638.68' Benchmark elevation: 653.26'

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Cascade Drilling

Address: 301 Alderson St. City, State, Zip Code: Schofield, WI. 54476

Name of driller: Paul Dickinson

Drilling method: Rotosonic Drilling fluid: Water Bore Hole diameter: 6"

Soil sampling method: Sample bag Depth of boring: 50'

C. MONITORING WELL INSTALLATION

Casing material: Sch. 40 PVC

Length of casing: 52.45'

Outside casing diameter: 2.4"

Inside casing diameter: 2.04"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 5'

Depth of Well: 49'

Filter Pack:

Material: Filter Sand

Grain Size: #40 red flint, topped with #7

Volume: 2 cu. ft.

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite Chips

Placement method: Poured

Volume: 2 cu. ft.

Backfill (if different from seal):

Material: Bentonite grout

Placement method: Pumped

Volume: 60 gal.

Surface seal design: Protop

Material of protective casing: Steel

Material of grout between protective casing and well casing: Sand

Protective cap: 6" Royer cap

Material: Aluminum

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic and rubber

Vented?: ☐ Y ☒ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level: 15.88' **Stabilization time**: < 1 minute

Well development method: Surged and pumped

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] **Certification #**: 9361 **Date**: 12-19-2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

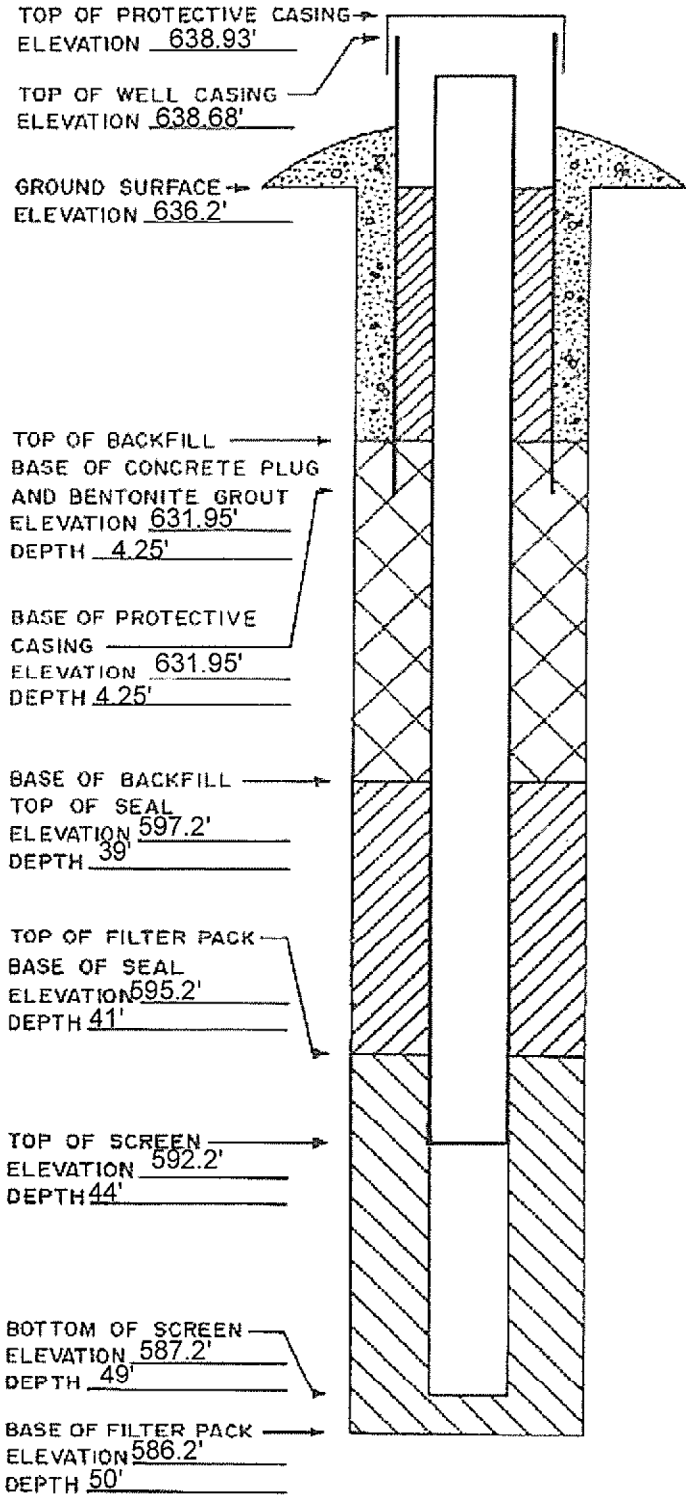
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



Print Form

IOWA DEPARTMENT OF NATURAL RESOURCES

MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-Lansing Generating Station Permit No.:

Well or Piezometer No: MW-303

Dates Started: 11/3/15 Date Completed: 11/4/15

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft):

Specify corner of site: NW

Distance & direction along boundary: 730' SE

Distance & direction from boundary to wall: 760' NE

Elevations (± 0.01 ft MSL):

Ground Surface: 653.85

Top of protective casing: 656.74

Top of well casing: 656.27

Benchmark elevation: 633.86, NAVD 1988 datum

Benchmark description: CP 300, iron rod in concrete

B. SOIL BORING INFORMATION

Name & Address of Construction Company:
Cascade Drilling
301 Alderson St
Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: None

Bore Hole Diameter: 8"

Soil Sampling Method: Spoon

Depth of Boring: 27 feet

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 16

Outside casing diameter: 2.40"

Inside casing diameter: 2"

Casing joint type: threaded

Casing/screen joint type: threaded

Screen material: PVC

Screen opening size: .01"

Screen length: 10'

Depth of well: 26'

Filter Pack:

Material: Red Flint

Grain size: #40

Volume: 250 lbs

Seal (minimum 3 ft length above filter pack):

Material: 3/8" bentonite chips

Placement method: Gravity

Volume:

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design:

Material of protective casing: Steel 6"

Material of grout between protective casing and well casing: sand

Protective cap:

Material: steel

Vented: ☒ Yes ☐ No Locking: ☐ Yes ☐ No

Well Cap:

Material: PVC

Vented: ☐ Yes ☒ No

D. GROUNDWATER MEASURMENT (± 0.01 ft below top of inner well casing)

Water level: 16.35 Stabilization Time: < 1 hr.

Well development method: Surged and pumped to reduce turbidity

Average depth of frostline: 4'

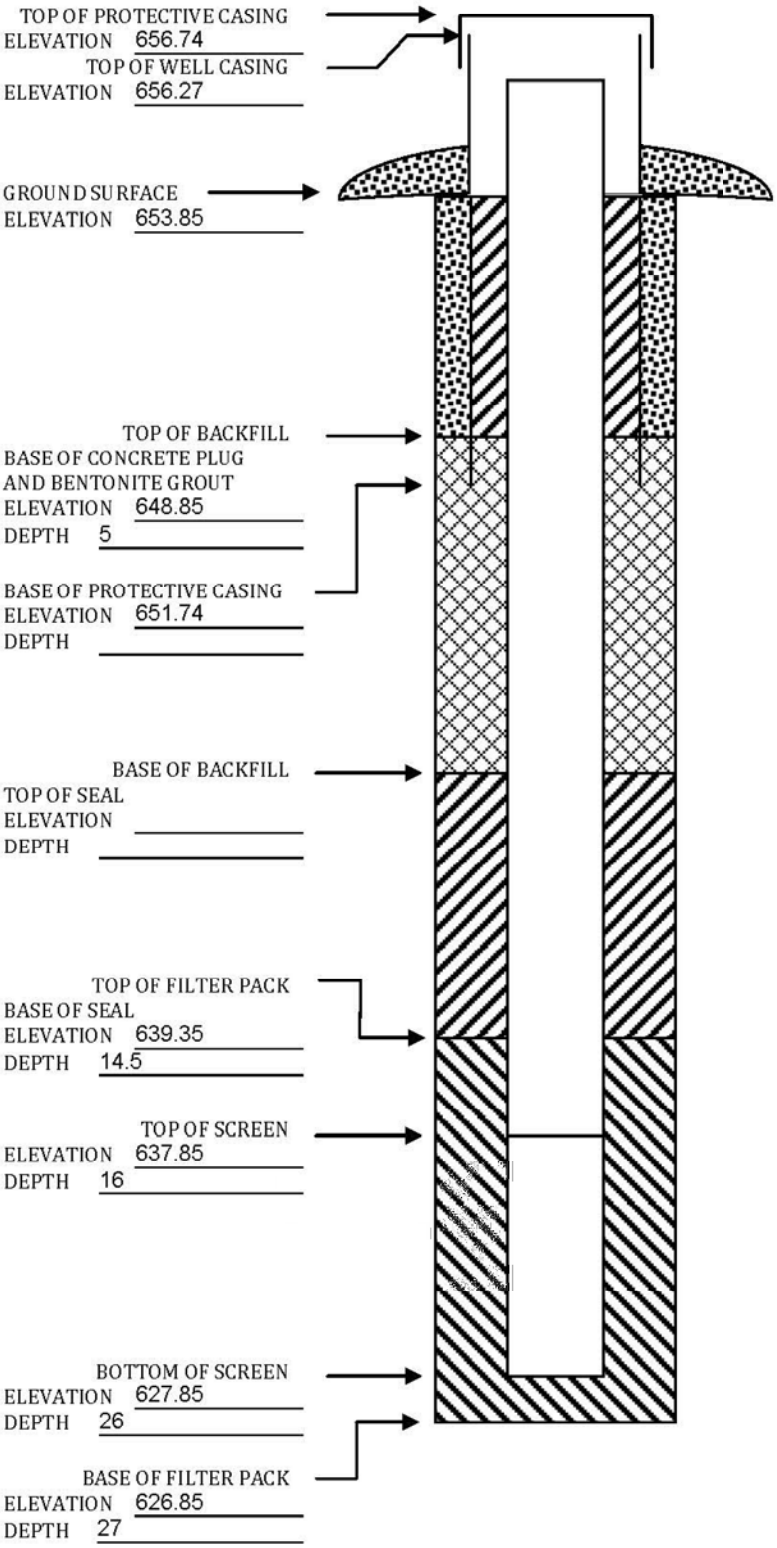
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station | Permit No.:

Well or Piezometer No.: MW304 | Dates Started: 5/15/2019 | Date Completed: 5/15/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW | Distance and direction along boundary: 1,340 S

Distance and direction from boundary to surface monitoring well: 10 E

Elevation (+0.01 ft. MSL):

Ground Surface: 635.47 | Top of protective casing: 636.68

Top of well casing: 636.43 | Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Roberts Environmental Drilling Inc.

Address: 1107 South Mulberry Street | City, State, Zip Code: Millstadt, IL, 62260

Name of driller: Eric Wetzel

Drilling method: 4 1/4" HSA | Drilling fluid: None | Bore Hole diameter: 8.5"

Soil sampling method: Split Spoon | Depth of boring: 22'

C. MONITORING WELL INSTALLATION

Casing material: PVC | Placement method: Gravity

Length of casing: 20.26' | Volume:

Outside casing diameter: 2.4" | Backfill (if different from seal):

Inside casing diameter: 2.0" | Material:

Casing joint type: Threaded | Placement method:

Casing/screen joint type: Threaded | Volume:

Screen material: PVC | Surface seal design: Concrete

Screen opening size: 0.01' | Material of protective casing: Steel

Material of grout between protective casing and well casing: Bentonite chips

Screen length: 10'

Depth of Well: 20' | Protective cap:

Filter Pack: | Material: Steel

Material: Filter Sand | Vented?: ☒ Y ☐ N | Locking?: ☒ Y ☐ N

Grain Size: | Well cap:

Volume: 19.4 cubic feet | Material: Plastic

Seal (minimum 3 ft. length above filter pack): | Vented?: ☒ Y ☐ N

Material: Bentonite

D. GROUNDWATER MEASUREMENT (+0.01 foot below top of inner well casing)

Water level: 13.21' | **Stabilization time:** <1 hour

Well development method: Surged & pumped to reduce turbidity

Average depth of frost line: 4

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] | **Certification #:** 11509 | **Date:** 8/8/2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

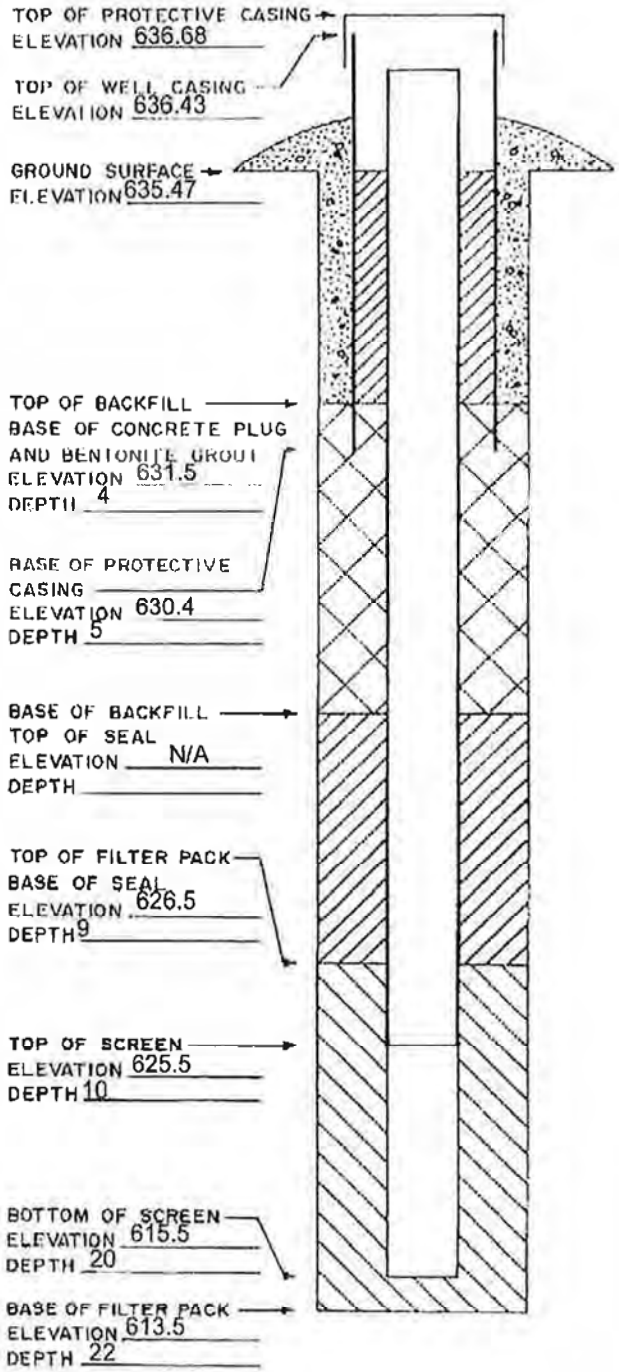
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station | Permit No.:

Well or Piezometer No.: MW-304A | Dates Started: 12/18/2019 | Date Completed: 12/19/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW | Distance and direction along boundary: 1340 S

Distance and direction from boundary to surface monitoring well: 10 E

Elevation (+0.01 ft. MSL)

Ground Surface: 635.6 | Top of protective casing: 638.6

Top of well casing: 638.36 | Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Cascade Drilling

Address: 301 Alderson St. | City, State, Zip Code: Schofield, WI. 54476

Name of driller: Paul Dickinson

Drilling method: Rotosonic | Drilling fluid: Water | Bore Hole diameter: 6"

Soil sampling method: Sample bag | Depth of boring: 51'

C. MONITORING WELL INSTALLATION

Casing material: Sch. 80 PVC

Length of casing: 52.45'

Outside casing diameter: 2.4"

Inside casing diameter: 1.939"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 5'

Depth of Well: 50'

Filter Pack:

Material: Filter Sand

Grain Size: #40 red flint, topped with #7

Volume: 1.5cu. ft.

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite Chips

Placement method: Poured

Volume: 2 cu. ft.

Backfill (if different from seal):

Material: Bentonite grout

Placement method: Pumped

Volume: 60 gal.

Surface seal design: Protop

Material of protective casing: Steel

Material of grout between protective casing and well casing: Sand

Protective cap: 6" Royer cap

Material: Aluminum

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic and rubber

Vented?: ☐ Y ☒ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level: 13.35' | **Stabilization time:** >1hr

Well development method: Surged and pumped

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] **Certification #:** 7361 **Date:** 12-19-2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

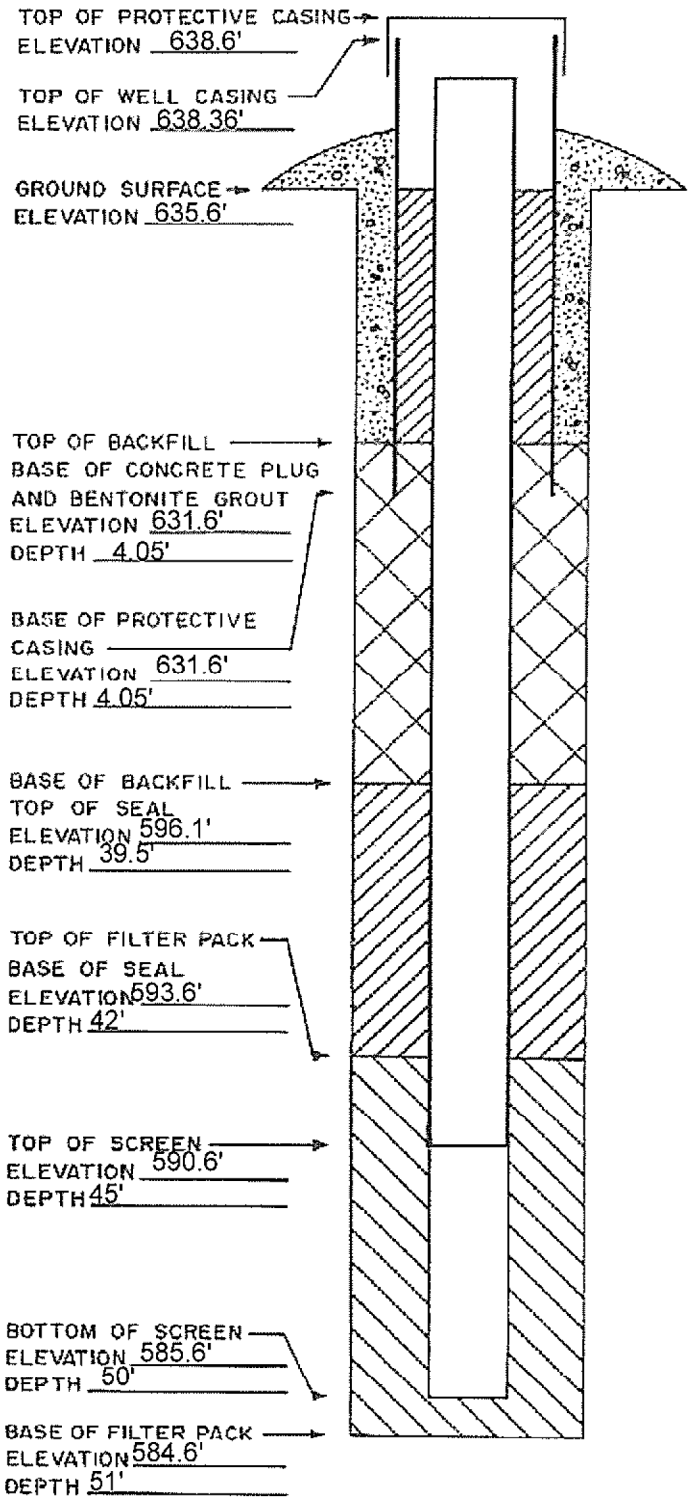
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station Permit No.:

Well or Piezometer No.: MW305 Dates Started: 5/16/2019 Date Completed: 5/16/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW Distance and direction along boundary: 1,125 S

Distance and direction from boundary to surface monitoring well: 630 E

Elevation (+0.01 ft. MSL):

Ground Surface: 631.75 Top of protective casing: 634.32

Top of well casing: 633.87 Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Roberts Environmental Drilling Inc.

Address: 1107 South Mulberry Street City, State, Zip Code: Millstadt, IL, 62260

Name of driller: Eric Wetzel

Drilling method: 4 1/4" HSA Drilling fluid: Bore Hole diameter: 8.5"

Soil sampling method: Split Spoon Depth of boring: 16'

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 5'

Outside casing diameter: 2.4"

Inside casing diameter: 2.0"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 10'

Depth of Well: 14.5'

Filter Pack:

Material: Filter Sand

Grain Size:

Volume: 23 bags

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite

Placement method: Gravity

Volume: 2.7 cubic ft

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design: Concrete

Material of protective casing: Steel

Material of grout between protective casing and well casing: Bentonite chips

Protective cap:

Material: steel

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic

Vented?: ☒ Y ☐ N

D. GROUNDWATER MEASUREMENT (+0.01 foot below top of inner well casing)

Water level: 12.13' **Stabilization time:** < 1 hr

Well development method: Surged and pumped to remove turbidity

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: **Certification #:** 11509 **Date:** 8/8/2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

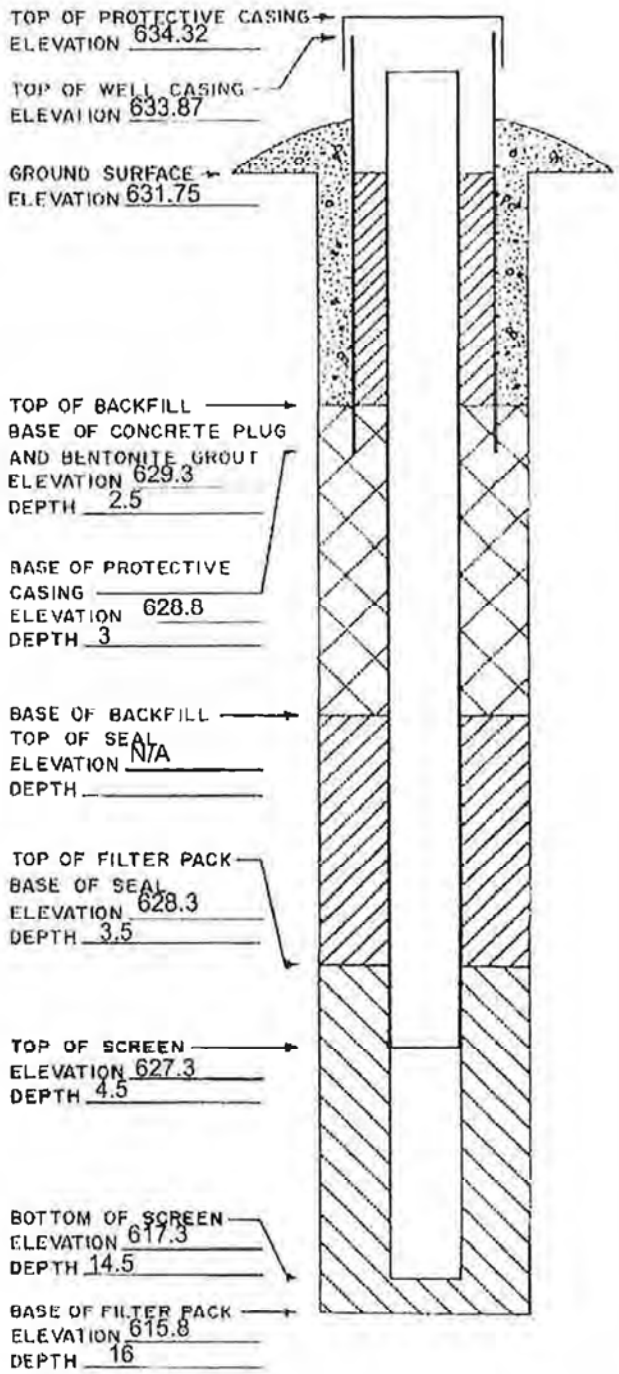
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station | Permit No.:

Well or Piezometer No.: MW306 | Dates Started: 5/16/2019 | Date Completed: 5/16/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW | Distance and direction along boundary: 420 SE

Distance and direction from boundary to surface monitoring well: 60 SW

Elevation (+0.01 ft. MSL):

Ground Surface: 636.74 | Top of protective casing: 637.71

Top of well casing: 637.48 | Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Roberts Environmental Drilling Inc.

Address: 1107 South Mulberry Street | City, State, Zip Code: Millstadt, IL, 62260

Name of driller: Eric Wetzel

Drilling method: 4 1/4" HSA | Drilling fluid: | Bore Hole diameter: 8.5"

Soil sampling method: Split Spoon | Depth of boring: 26'

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 26'

Outside casing diameter: 2.4"

Inside casing diameter: 2.0"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 10'

Depth of Well: 25'

Filter Pack:

Material: Filter Sand

Grain Size:

Volume: 37 cubic feet

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite

Placement method: Gravity

Volume:

Backfill (if different from seal):

Material:

Placement method:

Volume:

Surface seal design: Concrete

Material of protective casing: Steel

Material of grout between protective casing and well casing: Bentonite chips

Protective cap:

Material: Steel

Vented?: ☒ Y ☐ N | Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic

Vented?: ☒ Y ☐ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level: 13.11' | **Stabilization time**: <1 hr

Well development method: Surged and pumped to reduce turbidity

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: | **Certification #**: 11509 | **Date**: 8/8/2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

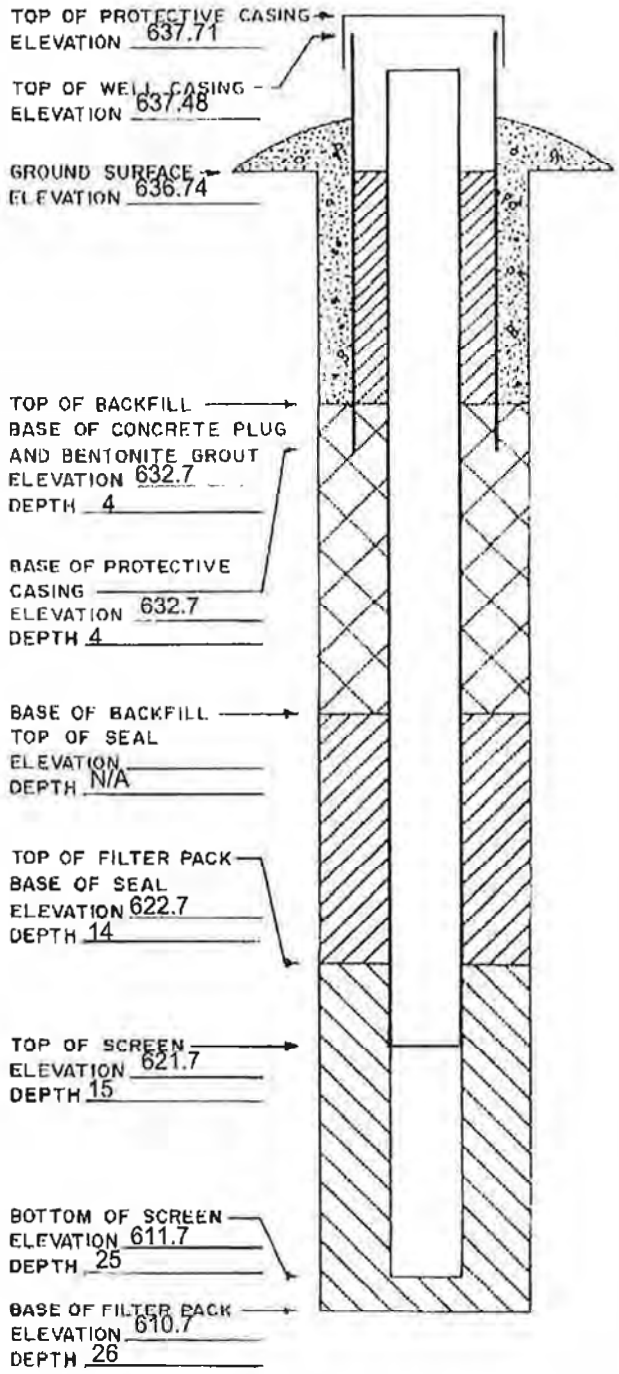
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Lansing Generating Station Permit No.:

Well or Piezometer No.: MW-306A Dates Started: 5/17/2019 Date Completed: 12/19/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site: NW Distance and direction along boundary: 420 SE

Distance and direction from boundary to surface monitoring well: 60 SW

Elevation (+0.01 ft. MSL):

Ground Surface: 636.7 Top of protective casing: 639.56

Top of well casing: 639.33 Benchmark elevation: 653.26

Benchmark description: Brass cap in PCC walkway to weir structure on north side of entrance road

B. SOIL BORING INFORMATION

Construction Company Name: Cascade Drilling

Address: 301 Alderson St. City, State, Zip Code: Schofield, WI. 54476

Name of driller: Paul Dickinson

Drilling method: Rotosonic Drilling fluid: Water Bore Hole diameter: 6"

Soil sampling method: Sample bag Depth of boring: 56'

C. MONITORING WELL INSTALLATION

Casing material: Sch. 80 PVC

Length of casing: 58.06'

Outside casing diameter: 2.4"

Inside casing diameter: 1.939"

Casing joint type: Threaded

Casing/screen joint type: Threaded

Screen material: PVC

Screen opening size: 0.01'

Screen length: 5'

Depth of Well: 55'

Filter Pack:

Material: Filter Sand

Grain Size: #40 red flint, topped with #7

Volume: 1.5cu. ft.

Seal (minimum 3 ft. length above filter pack):

Material: Bentonite Chips

Placement method: Poured

Volume: 2 cu. ft.

Backfill (if different from seal):

Material: Bentonite grout

Placement method: Pumped

Volume: 60 gal.

Surface seal design: Protop

Material of protective casing: Steel

Material of grout between protective casing and well casing: Sand

Protective cap: 6" Royer cap

Material: Aluminum

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap:

Material: Plastic and rubber

Vented?: ☐ Y ☒ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level: 19.56' **Stabilization time**: < 1 minute

Well development method: Surged and pumped

Average depth of frost line: 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature: [signature] **Certification #**: 9361 **Date**: 12-19-2019

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 ½ inch x 11 inch map showing locations of all monitoring wells and piezometers.

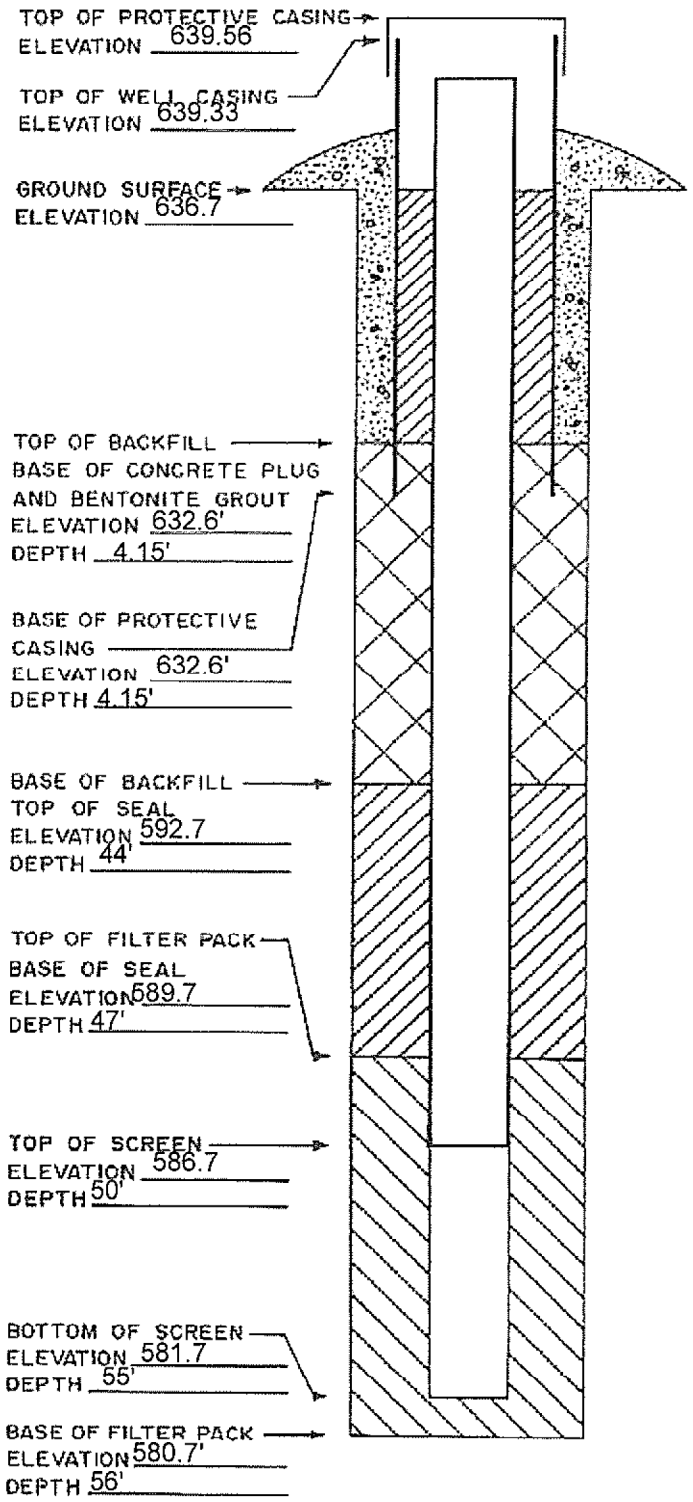
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM GROUND SERFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-307

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		628.5 Feet	640.70 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,777 N, 5,541,269 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 2.56 "
Long -91 ° 10 ' 9.97 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1–9	Hydrovaced to 12' below ground surface with some cave-in to about 10'.										
S1	60		10–15	POORLY GRADED SAND, medium grained, yellowish brown (10YR 5/4) with 4" layer of gray sand (10YR 5/1), shells and subroundd gravel.	SP					W				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	Same as above , shells still present with more gray sand.	SP									
			17											
S2	60		18	SILT, dark gray to black (5Y 2.5/2), with trace very fine grained sand and gravel/cobbles.	ML				0.75	W/M				
			19											
			20	Same as above but gray (5Y 4/1).										
S3	12		21							W/M				
				End of boring at 21' below ground surface.										
				Well placed from 20' with 10' screen at 20 to 10'.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-307A

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		622.8 Feet	640.60 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,957,775 N, 5,541,261 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 2.54 "
Long -91 ° 10 ' 10.08 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1–9	Hydrovaced to 12' below ground surface with some cave-in to about 10'.										
S1	60		10–15	POORLY GRADED SAND, medium grained, yellowish brown (10YR 5/4) with 8" layer of gray sand (10YR 5/1) with trace shells and sub-rounded gravel.	SP					M/W				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16											
			17											
S2	48		18		SP					W				
			19											
			20	SILT, dark gray, dark gray to black, (5Y 2.5/2) with fine grained sand and trace gravel.										
			21											
			22											
S3	60		23		ML				1.5-2.5	M				
			24											
			25	LEAN CLAY, black (5Y 2.5/1), soft.										
			26											
			27											
S4	60		28						0.75	W				
			29											
			30	Same as above but very soft with trace fine to medium grained sand.	CL									
			31											
			32											
S5	60		33						0.0	M/W				
			34											
			35											
			36	POORLY GRADED GRAVEL WITH SAND, fine to coarse gravel, sub-rounded to sub-angular, sand is fine to coarse grained, dark brownish gray (2.5Y 4/2) with trace silt.										
			37											
S6	24		38		GP				0.0	W				
			39											
			40											

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-307A

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			41		GP									
			41	SILT, dark gray (5Y 3/1), with trace sand, gravel and cobbles.	ML									
S7	56		42	WELL GRADED SAND, fine to medium grained, yellow (2.Y 7/6) with gravel and pieces of shell.	SW				0.0	W				
			43	SILT, dark gray (5Y 4/1) and transitions to olive brown (2.5Y 4/4), very soft.	ML									
			44											
			45	POORLY GRADED SAND, fine to medium grained, light olive brown (2.5Y 5/4) with trace silt.	SP									
			46											
			47	SANDY SILT, light olive brown (2.5Y 5/3), very soft, sand is fine to medium grained.	ML									
			48	SILTY SAND, fine to coarse grained, olive yellow (2.5Y 6/8).	SM									
S8	70		49	POORLY GRADED GRAVEL WITH SAND AND SILT, coarse gravel, sand and silt are light olive brown (2.5Y 5/4), sand is fine to coarse grained.	GP-GM				0.0	W				
			50	SANDY SILT WITH GRAVEL, gray to dark gray (2.5Y 4/1), sand is fine to coarse grained, gravel is coarse, sub-rounded with trace cobbles, very soft.	ML									
			51											
			52	End of boring at 52' below ground surface.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-308

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/22/2021	6/22/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		618.8 Feet	635.70 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,236 N, 5,541,333 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43 ° 20 ' 7.07 "
Long -91 ° 10 ' 8.94 "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			1	Hydrovaced to 8 feet below ground surface and blind drilled the from 8 to 10'.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
			9											Blind drilled 2 ft of slough from 8 to 10' bgs.
			10	WELL SORTED SAND, fine to coarse grained, very dark grayish brown (10YR 3/2).	SW									
			11	SILT, gray to dark gray (2.5Y 3/2) with sticks, roots, and trace sand throughout, very soft.										
			12											
S1	60		13		ML				0.0	W				
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-308

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	Same as above but with trace roots, no sticks, and pockets of sand, very sort.										
			17											
S2	60		18		ML				0.0	W				
			19											
			20	Same as above but very trace roots.										
S3	40		21	SANDY SILT, gray to dark gray, (2.5Y 3/2), no visible roots, very soft.	ML				0.0	W				slough in hole, actual recovery was ~2"
			22	End of boring at 22' below ground surface.										

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Lansing Generating Station SCS#: 25221161.00		MW-309

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Paul Dickinson Cascade Drilling	6/23/2021	6/23/2021	Roto-Sonic

DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		619.4 Feet	636.10 Feet	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 3,958,229 N, 5,541,010 E S / C / N
SW 1/4 of NW 1/4 of Section 2, T 98 N, R 3 W
Lat 43° 20' 7.10"
Long -91° 10' 13.31"
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Allamakee		Lansing, Iowa

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Hydrovaced to 8' below ground surface.										
			1	Hole collapsed to 6' bgs.										
			2											
			3											
			4											
			5											
			6	WELL GRADED SAND, fine to coarse grained, grayish brown to brown (10YR 4/3) with trace coal (slough).										
S1	20		7											
			8		SP									Slough from 6 to 10 feet.
			9											
			10	SILT, dark gray to black (5Y 2.5/1) with trace roots, 4" layer of black organic soil with trace gravel and sticks.										
			11											
			12		ML-OL									
S2	60		13											
			14	SILTY SAND WITH GRAVEL, fine to coarse grained, gray to dark gray (5Y 4/1), gravel is										
			15		SM									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

SOIL BORING LOG INFORMATION SUPPLEMENT

Boring Number MW-309

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	sub-rounded. SILT, dark gray (5Y 3/1), with roots and trace sticks, very soft.										
			17											
S3	60		18		ML									
			19											
			20	SANDY SILT, very dark gray (5Y 3/1) with roots, trace gravel and peices of limestone at bottom of sample, sand is fine to medium grain.										
			21											
			22											
S4	60		23		ML									
			24											
			25	End of boring at 25' below ground surface. Well placed from 22' with 10' screen at 22 to 12'.										

Appendix C

Laboratory Reports – April 2022

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-228428-3
Client Project/Site: Lansing Gen Station 25222070

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett

Sandra Fredrick

Authorized for release by:
4/21/2022 6:11:06 PM

Sandie Fredrick, Project Manager II
(920)261-1660
Sandra.Fredrick@et.eurofinsus.com

Table of Contents

Case Narrative

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Job ID: 310-228428-3

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-228428-3

Comments
No additional comments.

Receipt
The samples were received on 4/6/2022 1:52 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.6º C, 1.1º C, 1.8º C and 3.5º C.

Metals
Method 3005A: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: MW-306 (310-228428-6). The sample(s) was preserved to the appropriate pH in the laboratory.

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

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

Sample Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-228428-1	MW-301	Water	04/05/22 10:45	04/06/22 13:52
310-228428-2	MW-302	Water	04/05/22 15:55	04/06/22 13:52
310-228428-3	MW-303	Water	04/05/22 15:10	04/06/22 13:52
310-228428-4	MW-304	Water	04/05/22 10:20	04/06/22 13:52
310-228428-5	MW-305	Water	04/04/22 15:45	04/06/22 13:52
310-228428-6	MW-306	Water	04/04/22 17:05	04/06/22 13:52
310-228428-7	MW-302A	Water	04/05/22 17:00	04/06/22 13:52
310-228428-8	MW-304A	Water	04/05/22 12:30	04/06/22 13:52
310-228428-9	MW-306A	Water	04/04/22 17:30	04/06/22 13:52
310-228428-10	MW-307	Water	04/05/22 13:15	04/06/22 13:52
310-228428-11	MW-307A	Water	04/05/22 14:10	04/06/22 13:52
310-228428-12	MW-20	Water	04/05/22 17:55	04/06/22 13:52
310-228428-13	MW-6	Water	04/06/22 09:10	04/06/22 13:52
310-228428-14	Field Blank	Water	04/05/22 17:45	04/06/22 13:52

Detection Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-301 — Lab Sample ID: 310-228428-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	620		100	36	ug/L	1		6020A	Total/NA
Magnesium	21000		500	150	ug/L	1		6020A	Total/NA
Manganese	590		10	3.6	ug/L	1		6020A	Total/NA
Potassium	3000		500	150	ug/L	1		6020A	Total/NA
Sodium	16000		1000	610	ug/L	1		6020A	Total/NA
Iron	280		100	36	ug/L	1		6020A	Dissolved
Manganese	570		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	200		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	200		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-302 — Lab Sample ID: 310-228428-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	45000		100	36	ug/L	1		6020A	Total/NA
Magnesium	49000		500	150	ug/L	1		6020A	Total/NA
Manganese	3000		10	3.6	ug/L	1		6020A	Total/NA
Potassium	3900		500	150	ug/L	1		6020A	Total/NA
Sodium	21000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	38		2.0	0.75	ug/L	1		6020A	Dissolved
Iron	44000		100	36	ug/L	1		6020A	Dissolved
Manganese	3000		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	620		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	620		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-303 — Lab Sample ID: 310-228428-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	20000		500	150	ug/L	1		6020A	Total/NA
Manganese	89		10	3.6	ug/L	1		6020A	Total/NA
Potassium	1900		500	150	ug/L	1		6020A	Total/NA
Sodium	16000		1000	610	ug/L	1		6020A	Total/NA
Manganese	60		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	210		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	210		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-304 — Lab Sample ID: 310-228428-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	33000		500	150	ug/L	1		6020A	Total/NA
Potassium	1300		500	150	ug/L	1		6020A	Total/NA
Sodium	5900		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	320		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	320		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-305 — Lab Sample ID: 310-228428-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1500		100	36	ug/L	1		6020A	Total/NA
Magnesium	23000		500	150	ug/L	1		6020A	Total/NA
Manganese	560		10	3.6	ug/L	1		6020A	Total/NA
Potassium	1500		500	150	ug/L	1		6020A	Total/NA
Sodium	5500		1000	610	ug/L	1		6020A	Total/NA
Iron	830		100	36	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-305 (Continued) — Lab Sample ID: 310-228428-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	520		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	290		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	290		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-306 — Lab Sample ID: 310-228428-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	33000		100	36	ug/L	1		6020A	Total/NA
Magnesium	41000		500	150	ug/L	1		6020A	Total/NA
Manganese	4400		10	3.6	ug/L	1		6020A	Total/NA
Potassium	7000		500	150	ug/L	1		6020A	Total/NA
Sodium	160000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	7.8		2.0	0.75	ug/L	1		6020A	Dissolved
Iron	32000		100	36	ug/L	1		6020A	Dissolved
Manganese	4500		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	940		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	940		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-302A — Lab Sample ID: 310-228428-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	37000		500	150	ug/L	1		6020A	Total/NA
Potassium	1100		500	150	ug/L	1		6020A	Total/NA
Sodium	7400		1000	610	ug/L	1		6020A	Total/NA
Manganese	8.3	J	10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	330		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	330		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-304A — Lab Sample ID: 310-228428-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	240		100	36	ug/L	1		6020A	Total/NA
Magnesium	16000		500	150	ug/L	1		6020A	Total/NA
Manganese	25		10	3.6	ug/L	1		6020A	Total/NA
Potassium	740		500	150	ug/L	1		6020A	Total/NA
Sodium	58000		1000	610	ug/L	1		6020A	Total/NA
Manganese	6.8	J	10	3.6	ug/L	1		6020A	Dissolved
Molybdenum	130		2.0	1.2	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	210		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	210		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-306A — Lab Sample ID: 310-228428-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1700		100	36	ug/L	1		6020A	Total/NA
Magnesium	36000		500	150	ug/L	1		6020A	Total/NA
Manganese	1000		10	3.6	ug/L	1		6020A	Total/NA
Potassium	1300		500	150	ug/L	1		6020A	Total/NA
Sodium	10000		1000	610	ug/L	1		6020A	Total/NA
Iron	1500		100	36	ug/L	1		6020A	Dissolved
Manganese	1000		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	350		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	350		10	4.6	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-307 — Lab Sample ID: 310-228428-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	78	J	100	36	ug/L	1		6020A	Total/NA
Magnesium	17000		500	150	ug/L	1		6020A	Total/NA
Manganese	590		10	3.6	ug/L	1		6020A	Total/NA
Potassium	2400		500	150	ug/L	1		6020A	Total/NA
Sodium	16000		1000	610	ug/L	1		6020A	Total/NA
Iron	87	J	100	36	ug/L	1		6020A	Dissolved
Manganese	560		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	130		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	130		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-307A — Lab Sample ID: 310-228428-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	370		100	36	ug/L	1		6020A	Total/NA
Magnesium	27000		500	150	ug/L	1		6020A	Total/NA
Manganese	710		10	3.6	ug/L	1		6020A	Total/NA
Potassium	2100		500	150	ug/L	1		6020A	Total/NA
Sodium	22000		1000	610	ug/L	1		6020A	Total/NA
Iron	280		100	36	ug/L	1		6020A	Dissolved
Manganese	700		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	330		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	330		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-20 — Lab Sample ID: 310-228428-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1200		100	36	ug/L	1		6020A	Total/NA
Magnesium	49000		500	150	ug/L	1		6020A	Total/NA
Manganese	4700		40	14	ug/L	4		6020A	Total/NA
Potassium	5200		500	150	ug/L	1		6020A	Total/NA
Sodium	57000		1000	610	ug/L	1		6020A	Total/NA
Iron	1200		100	36	ug/L	1		6020A	Dissolved
Manganese	4800		40	14	ug/L	4		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	270		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	270		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 310-228428-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	35000		500	150	ug/L	1		6020A	Total/NA
Potassium	1100		500	150	ug/L	1		6020A	Total/NA
Sodium	4500		1000	610	ug/L	1		6020A	Total/NA
Manganese	14		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	330		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	330		10	4.6	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Field Blank — Lab Sample ID: 310-228428-14

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-301

Date Collected: 04/05/22 10:45
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-1

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	620		100	36	ug/L		04/08/22 09:00	04/20/22 22:00	1
Magnesium	21000		500	150	ug/L		04/08/22 09:00	04/20/22 22:00	1
Manganese	590		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:00	1
Potassium	3000		500	150	ug/L		04/08/22 09:00	04/20/22 22:00	1
Sodium	16000		1000	610	ug/L		04/08/22 09:00	04/20/22 22:00	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	280		100	36	ug/L		04/08/22 09:00	04/21/22 00:32	1
Manganese	570		10	3.6	ug/L		04/08/22 09:00	04/21/22 00:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	200		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	200		10	4.6	mg/L			04/11/22 08:04	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-302

Date Collected: 04/05/22 15:55
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-2

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	45000		100	36	ug/L		04/08/22 09:00	04/20/22 22:03	1
Magnesium	49000		500	150	ug/L		04/08/22 09:00	04/20/22 22:03	1
Manganese	3000		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:03	1
Potassium	3900		500	150	ug/L		04/08/22 09:00	04/20/22 22:03	1
Sodium	21000		1000	610	ug/L		04/08/22 09:00	04/20/22 22:03	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	38		2.0	0.75	ug/L		04/08/22 09:00	04/21/22 00:49	1
Iron	44000		100	36	ug/L		04/08/22 09:00	04/21/22 00:49	1
Manganese	3000		10	3.6	ug/L		04/08/22 09:00	04/21/22 00:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	620		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	620		10	4.6	mg/L			04/11/22 08:04	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-303

Date Collected: 04/05/22 15:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-3

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/20/22 22:06	1
Magnesium	**20000**		500	150	ug/L		04/08/22 09:00	04/20/22 22:06	1
Manganese	**89**		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:06	1
Potassium	**1900**		500	150	ug/L		04/08/22 09:00	04/20/22 22:06	1
Sodium	**16000**		1000	610	ug/L		04/08/22 09:00	04/20/22 22:06	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/21/22 00:52	1
Manganese	**60**		10	3.6	ug/L		04/08/22 09:00	04/21/22 00:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	**210**		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	**210**		10	4.6	mg/L			04/11/22 08:04	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-304

Date Collected: 04/05/22 10:20
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-4

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/20/22 22:09	1
Magnesium	**33000**		500	150	ug/L		04/08/22 09:00	04/20/22 22:09	1
Manganese	<3.6		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:09	1
Potassium	**1300**		500	150	ug/L		04/08/22 09:00	04/20/22 22:09	1
Sodium	**5900**		1000	610	ug/L		04/08/22 09:00	04/20/22 22:09	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/21/22 00:55	1
Manganese	<3.6		10	3.6	ug/L		04/08/22 09:00	04/21/22 00:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	**320**		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	**320**		10	4.6	mg/L			04/11/22 08:04	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-305

Date Collected: 04/04/22 15:45
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-5

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1500		100	36	ug/L		04/08/22 09:00	04/20/22 22:26	1
Magnesium	23000		500	150	ug/L		04/08/22 09:00	04/20/22 22:26	1
Manganese	560		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:26	1
Potassium	1500		500	150	ug/L		04/08/22 09:00	04/20/22 22:26	1
Sodium	5500		1000	610	ug/L		04/08/22 09:00	04/20/22 22:26	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	830		100	36	ug/L		04/08/22 09:00	04/21/22 01:02	1
Manganese	520		10	3.6	ug/L		04/08/22 09:00	04/21/22 01:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	290		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	290		10	4.6	mg/L			04/11/22 08:04	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-306

Date Collected: 04/04/22 17:05
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-6

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	33000		100	36	ug/L		04/08/22 09:00	04/20/22 22:29	1
Magnesium	41000		500	150	ug/L		04/08/22 09:00	04/20/22 22:29	1
Manganese	4400		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:29	1
Potassium	7000		500	150	ug/L		04/08/22 09:00	04/20/22 22:29	1
Sodium	160000		1000	610	ug/L		04/08/22 09:00	04/20/22 22:29	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.8		2.0	0.75	ug/L		04/08/22 09:00	04/21/22 01:05	1
Iron	32000		100	36	ug/L		04/08/22 09:00	04/21/22 01:05	1
Manganese	4500		10	3.6	ug/L		04/08/22 09:00	04/21/22 01:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	940		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	940		10	4.6	mg/L			04/11/22 08:04	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-302A

Date Collected: 04/05/22 17:00
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-7

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/20/22 22:32	1
Magnesium	**37000**		500	150	ug/L		04/08/22 09:00	04/20/22 22:32	1
Manganese	<3.6		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:32	1
Potassium	**1100**		500	150	ug/L		04/08/22 09:00	04/20/22 22:32	1
Sodium	**7400**		1000	610	ug/L		04/08/22 09:00	04/20/22 22:32	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/21/22 01:08	1
Manganese	**8.3**	**J**	10	3.6	ug/L		04/08/22 09:00	04/21/22 01:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	**330**		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	**330**		10	4.6	mg/L			04/11/22 08:04	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-304A

Date Collected: 04/05/22 12:30
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-8

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**240**		100	36	ug/L		04/08/22 09:00	04/20/22 22:35	1
Magnesium	**16000**		500	150	ug/L		04/08/22 09:00	04/20/22 22:35	1
Manganese	**25**		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:35	1
Potassium	**740**		500	150	ug/L		04/08/22 09:00	04/20/22 22:35	1
Sodium	**58000**		1000	610	ug/L		04/08/22 09:00	04/20/22 22:35	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/21/22 01:11	1
Manganese	**6.8**	**J**	10	3.6	ug/L		04/08/22 09:00	04/21/22 01:11	1
Molybdenum	**130**		2.0	1.2	ug/L		04/08/22 09:00	04/21/22 01:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	**210**		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	**210**		10	4.6	mg/L			04/11/22 08:04	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-306A

Date Collected: 04/04/22 17:30
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-9

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1700		100	36	ug/L		04/08/22 09:00	04/20/22 22:39	1
Magnesium	36000		500	150	ug/L		04/08/22 09:00	04/20/22 22:39	1
Manganese	1000		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:39	1
Potassium	1300		500	150	ug/L		04/08/22 09:00	04/20/22 22:39	1
Sodium	10000		1000	610	ug/L		04/08/22 09:00	04/20/22 22:39	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1500		100	36	ug/L		04/08/22 09:00	04/21/22 01:15	1
Manganese	1000		10	3.6	ug/L		04/08/22 09:00	04/21/22 01:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	350		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	350		10	4.6	mg/L			04/11/22 08:04	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-307

Date Collected: 04/05/22 13:15
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-10

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	78	J	100	36	ug/L		04/08/22 09:00	04/20/22 22:42	1
Magnesium	17000		500	150	ug/L		04/08/22 09:00	04/20/22 22:42	1
Manganese	590		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:42	1
Potassium	2400		500	150	ug/L		04/08/22 09:00	04/20/22 22:42	1
Sodium	16000		1000	610	ug/L		04/08/22 09:00	04/20/22 22:42	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	87	J	100	36	ug/L		04/08/22 09:00	04/21/22 01:18	1
Manganese	560		10	3.6	ug/L		04/08/22 09:00	04/21/22 01:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	130		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	130		10	4.6	mg/L			04/11/22 08:04	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-307A

Date Collected: 04/05/22 14:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-11

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	370		100	36	ug/L		04/08/22 09:00	04/20/22 22:48	1
Magnesium	27000		500	150	ug/L		04/08/22 09:00	04/20/22 22:48	1
Manganese	710		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:48	1
Potassium	2100		500	150	ug/L		04/08/22 09:00	04/20/22 22:48	1
Sodium	22000		1000	610	ug/L		04/08/22 09:00	04/20/22 22:48	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	280		100	36	ug/L		04/08/22 09:00	04/21/22 01:34	1
Manganese	700		10	3.6	ug/L		04/08/22 09:00	04/21/22 01:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	330		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	330		10	4.6	mg/L			04/11/22 08:04	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-20

Date Collected: 04/05/22 17:55
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-12

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1200		100	36	ug/L		04/08/22 09:00	04/20/22 22:52	1
Magnesium	49000		500	150	ug/L		04/08/22 09:00	04/20/22 22:52	1
Manganese	4700		40	14	ug/L		04/08/22 09:00	04/21/22 13:52	4
Potassium	5200		500	150	ug/L		04/08/22 09:00	04/20/22 22:52	1
Sodium	57000		1000	610	ug/L		04/08/22 09:00	04/20/22 22:52	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1200		100	36	ug/L		04/08/22 09:00	04/21/22 01:37	1
Manganese	4800		40	14	ug/L		04/08/22 09:00	04/21/22 13:43	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	270		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	270		10	4.6	mg/L			04/11/22 08:04	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: MW-6

Date Collected: 04/06/22 09:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-13

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/20/22 22:55	1
Magnesium	**35000**		500	150	ug/L		04/08/22 09:00	04/20/22 22:55	1
Manganese	<3.6		10	3.6	ug/L		04/08/22 09:00	04/20/22 22:55	1
Potassium	**1100**		500	150	ug/L		04/08/22 09:00	04/20/22 22:55	1
Sodium	**4500**		1000	610	ug/L		04/08/22 09:00	04/20/22 22:55	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/21/22 01:40	1
Manganese	**14**		10	3.6	ug/L		04/08/22 09:00	04/21/22 01:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	**330**		10	4.6	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	**330**		10	4.6	mg/L			04/11/22 08:04	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Client Sample ID: Field Blank

Date Collected: 04/05/22 17:45
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-14

Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/20/22 23:11	1
Magnesium	<150		500	150	ug/L		04/08/22 09:00	04/20/22 23:11	1
Manganese	<3.6		10	3.6	ug/L		04/08/22 09:00	04/20/22 23:11	1
Potassium	<150		500	150	ug/L		04/08/22 09:00	04/20/22 23:11	1
Sodium	<610		1000	610	ug/L		04/08/22 09:00	04/20/22 23:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/15/22 10:57	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/15/22 10:57	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/15/22 10:57	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

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

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-349167/1-A
Matrix: Water
Analysis Batch: 350579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 349167

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/08/22 09:00	04/20/22 21:41	1
Magnesium	<150		500	150	ug/L		04/08/22 09:00	04/20/22 21:41	1
Manganese	<3.6		10	3.6	ug/L		04/08/22 09:00	04/20/22 21:41	1
Potassium	<150		500	150	ug/L		04/08/22 09:00	04/20/22 21:41	1
Sodium	<610		1000	610	ug/L		04/08/22 09:00	04/20/22 21:41	1

Lab Sample ID: LCS 310-349167/2-A
Matrix: Water
Analysis Batch: 350579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 349167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	200	189		ug/L		95	80 - 120
Magnesium	2000	1870		ug/L		93	80 - 120
Manganese	100	95.4		ug/L		95	80 - 120
Potassium	2000	1940		ug/L		97	80 - 120
Sodium	2000	2110		ug/L		105	80 - 120

Lab Sample ID: 310-228428-10 DU
Matrix: Water
Analysis Batch: 350579

Client Sample ID: MW-307
Prep Type: Total/NA
Prep Batch: 349167

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iron	78	J	75.9	J	ug/L		2	20
Magnesium	17000		17100		ug/L		1	20
Manganese	590		582		ug/L		2	20
Potassium	2400		2300		ug/L		3	20
Sodium	16000		15400		ug/L		2	20

Lab Sample ID: MB 310-349172/1-A
Matrix: Water
Analysis Batch: 350579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 349172

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.75		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 23:37	1
Iron	<36		100	36	ug/L		04/08/22 09:00	04/20/22 23:37	1
Manganese	<3.6		10	3.6	ug/L		04/08/22 09:00	04/20/22 23:37	1
Molybdenum	<1.2		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 23:37	1

Lab Sample ID: LCS 310-349172/2-A
Matrix: Water
Analysis Batch: 350579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 349172

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	197		ug/L		98	80 - 120
Iron	200	189		ug/L		95	80 - 120
Manganese	100	97.5		ug/L		97	80 - 120
Molybdenum	200	198		ug/L		99	80 - 120

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

Lab Sample ID: 310-228428-4 DU
Matrix: Water
Analysis Batch: 350579

Client Sample ID: MW-304
Prep Type: Dissolved
Prep Batch: 349172

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.75		<0.75		ug/L		NC	20
Iron	<36		<36		ug/L		NC	20
Manganese	<3.6		<3.6		ug/L		NC	20
Molybdenum	2.4		2.46		ug/L		3	20

Method: 2320B - Alkalinity (Low Level)

Lab Sample ID: MB 310-350002/1
Matrix: Water
Analysis Batch: 350002

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/15/22 10:57	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/15/22 10:57	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/15/22 10:57	1

Lab Sample ID: LCS 310-350002/2
Matrix: Water
Analysis Batch: 350002

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	1060		mg/L		106	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 310-349368/1
Matrix: Water
Analysis Batch: 349368

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<23		50	23	mg/L			04/11/22 08:04	1
Carbonate Alkalinity as CaCO3	<23		50	23	mg/L			04/11/22 08:04	1
Total Alkalinity as CaCO3	<23		50	23	mg/L			04/11/22 08:04	1

Lab Sample ID: LCS 310-349368/2
Matrix: Water
Analysis Batch: 349368

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	1030		mg/L		103	90 - 110

Metals

Prep Batch: 349167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	3005A	
310-228428-2	MW-302	Total/NA	Water	3005A	
310-228428-3	MW-303	Total/NA	Water	3005A	
310-228428-4	MW-304	Total/NA	Water	3005A	
310-228428-5	MW-305	Total/NA	Water	3005A	
310-228428-6	MW-306	Total/NA	Water	3005A	
310-228428-7	MW-302A	Total/NA	Water	3005A	
310-228428-8	MW-304A	Total/NA	Water	3005A	
310-228428-9	MW-306A	Total/NA	Water	3005A	
310-228428-10	MW-307	Total/NA	Water	3005A	
310-228428-11	MW-307A	Total/NA	Water	3005A	
310-228428-12	MW-20	Total/NA	Water	3005A	
310-228428-13	MW-6	Total/NA	Water	3005A	
310-228428-14	Field Blank	Total/NA	Water	3005A	
MB 310-349167/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-349167/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-228428-10 DU	MW-307	Total/NA	Water	3005A	

Prep Batch: 349172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Dissolved	Water	3005A	
310-228428-2	MW-302	Dissolved	Water	3005A	
310-228428-3	MW-303	Dissolved	Water	3005A	
310-228428-4	MW-304	Dissolved	Water	3005A	
310-228428-5	MW-305	Dissolved	Water	3005A	
310-228428-6	MW-306	Dissolved	Water	3005A	
310-228428-7	MW-302A	Dissolved	Water	3005A	
310-228428-8	MW-304A	Dissolved	Water	3005A	
310-228428-9	MW-306A	Dissolved	Water	3005A	
310-228428-10	MW-307	Dissolved	Water	3005A	
310-228428-11	MW-307A	Dissolved	Water	3005A	
310-228428-12	MW-20	Dissolved	Water	3005A	
310-228428-13	MW-6	Dissolved	Water	3005A	
MB 310-349172/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-349172/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-228428-4 DU	MW-304	Dissolved	Water	3005A	

Analysis Batch: 350579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Dissolved	Water	6020A	349172
310-228428-1	MW-301	Total/NA	Water	6020A	349167
310-228428-2	MW-302	Dissolved	Water	6020A	349172
310-228428-2	MW-302	Total/NA	Water	6020A	349167
310-228428-3	MW-303	Dissolved	Water	6020A	349172
310-228428-3	MW-303	Total/NA	Water	6020A	349167
310-228428-4	MW-304	Dissolved	Water	6020A	349172
310-228428-4	MW-304	Total/NA	Water	6020A	349167
310-228428-5	MW-305	Dissolved	Water	6020A	349172
310-228428-5	MW-305	Total/NA	Water	6020A	349167
310-228428-6	MW-306	Dissolved	Water	6020A	349172
310-228428-6	MW-306	Total/NA	Water	6020A	349167

Metals (Continued)

Analysis Batch: 350579 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-7	MW-302A	Dissolved	Water	6020A	349172
310-228428-7	MW-302A	Total/NA	Water	6020A	349167
310-228428-8	MW-304A	Dissolved	Water	6020A	349172
310-228428-8	MW-304A	Total/NA	Water	6020A	349167
310-228428-9	MW-306A	Dissolved	Water	6020A	349172
310-228428-9	MW-306A	Total/NA	Water	6020A	349167
310-228428-10	MW-307	Dissolved	Water	6020A	349172
310-228428-10	MW-307	Total/NA	Water	6020A	349167
310-228428-11	MW-307A	Dissolved	Water	6020A	349172
310-228428-11	MW-307A	Total/NA	Water	6020A	349167
310-228428-12	MW-20	Dissolved	Water	6020A	349172
310-228428-12	MW-20	Total/NA	Water	6020A	349167
310-228428-13	MW-6	Dissolved	Water	6020A	349172
310-228428-13	MW-6	Total/NA	Water	6020A	349167
310-228428-14	Field Blank	Total/NA	Water	6020A	349167
MB 310-349167/1-A	Method Blank	Total/NA	Water	6020A	349167
MB 310-349172/1-A	Method Blank	Total/NA	Water	6020A	349172
LCS 310-349167/2-A	Lab Control Sample	Total/NA	Water	6020A	349167
LCS 310-349172/2-A	Lab Control Sample	Total/NA	Water	6020A	349172
310-228428-4 DU	MW-304	Dissolved	Water	6020A	349172
310-228428-10 DU	MW-307	Total/NA	Water	6020A	349167

Analysis Batch: 350694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-12	MW-20	Dissolved	Water	6020A	349172
310-228428-12	MW-20	Total/NA	Water	6020A	349167

General Chemistry

Analysis Batch: 349368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	SM 2320B	
310-228428-2	MW-302	Total/NA	Water	SM 2320B	
310-228428-3	MW-303	Total/NA	Water	SM 2320B	
310-228428-4	MW-304	Total/NA	Water	SM 2320B	
310-228428-5	MW-305	Total/NA	Water	SM 2320B	
310-228428-6	MW-306	Total/NA	Water	SM 2320B	
310-228428-7	MW-302A	Total/NA	Water	SM 2320B	
310-228428-8	MW-304A	Total/NA	Water	SM 2320B	
310-228428-9	MW-306A	Total/NA	Water	SM 2320B	
310-228428-10	MW-307	Total/NA	Water	SM 2320B	
310-228428-11	MW-307A	Total/NA	Water	SM 2320B	
310-228428-12	MW-20	Total/NA	Water	SM 2320B	
310-228428-13	MW-6	Total/NA	Water	SM 2320B	
MB 310-349368/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-349368/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 350002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-14	Field Blank	Total/NA	Water	2320B	
MB 310-350002/1	Method Blank	Total/NA	Water	2320B	

General Chemistry (Continued)

Analysis Batch: 350002 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-350002/2	Lab Control Sample	Total/NA	Water	2320B	

Lab Chronicle

Client: SCS Engineers
Job ID: 310-228428-3
Project/Site: Lansing Gen Station 25222070

Client Sample ID: MW-301
Lab Sample ID: 310-228428-1
Date Collected: 04/05/22 10:45
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 00:32	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:00	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: MW-302
Lab Sample ID: 310-228428-2
Date Collected: 04/05/22 15:55
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 00:49	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:03	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: MW-303
Lab Sample ID: 310-228428-3
Date Collected: 04/05/22 15:10
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 00:52	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:06	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: MW-304
Lab Sample ID: 310-228428-4
Date Collected: 04/05/22 10:20
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 00:55	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:09	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Lab Chronicle

Client: SCS Engineers
Job ID: 310-228428-3
Project/Site: Lansing Gen Station 25222070

Client Sample ID: MW-305
Lab Sample ID: 310-228428-5
Date Collected: 04/04/22 15:45
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 01:02	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:26	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: MW-306
Lab Sample ID: 310-228428-6
Date Collected: 04/04/22 17:05
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 01:05	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:29	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: MW-302A
Lab Sample ID: 310-228428-7
Date Collected: 04/05/22 17:00
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 01:08	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:32	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: MW-304A
Lab Sample ID: 310-228428-8
Date Collected: 04/05/22 12:30
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 01:11	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:35	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Lab Chronicle

Client: SCS Engineers
Job ID: 310-228428-3
Project/Site: Lansing Gen Station 25222070

Client Sample ID: MW-306A
Lab Sample ID: 310-228428-9
Date Collected: 04/04/22 17:30
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 01:15	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:39	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: MW-307
Lab Sample ID: 310-228428-10
Date Collected: 04/05/22 13:15
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 01:18	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:42	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: MW-307A
Lab Sample ID: 310-228428-11
Date Collected: 04/05/22 14:10
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 01:34	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:48	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: MW-20
Lab Sample ID: 310-228428-12
Date Collected: 04/05/22 17:55
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 01:37	SAP	TAL CF
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		4	350694	04/21/22 13:43	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:52	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		4	350694	04/21/22 13:52	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Lab Chronicle

Client: SCS Engineers
Job ID: 310-228428-3
Project/Site: Lansing Gen Station 25222070

Client Sample ID: MW-6
Lab Sample ID: 310-228428-13
Date Collected: 04/06/22 09:10
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			349172	04/08/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	350579	04/21/22 01:40	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:55	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	349368	04/11/22 08:04	JMH2	TAL CF

Client Sample ID: Field Blank
Lab Sample ID: 310-228428-14
Date Collected: 04/05/22 17:45
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 23:11	SAP	TAL CF
Total/NA	Analysis	2320B		1	350002	04/15/22 10:57	JMH2	TAL CF

Laboratory References:

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

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-228428-3
Project/Site: Lansing Gen Station 25222070

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-3

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
2320B	Alkalinity (Low Level)	SM	TAL CF
SM 2320B	Alkalinity	SM	TAL CF
3005A	Preparation, Total Metals	SW846	TAL CF

Protocol References:

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:

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

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Paul Grover	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-69726-16399.1
Client Contact: Rosa Cruz	Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin:	Page: Page 1 of 2
Company: SCS Engineers	PWSID:			Job #:
Address: 8450 Hickman Road Suite 27	Due Date Requested:			
City: Clive	TAT Requested (days):			
State, Zip: IA, 50325	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25221070			
Email: rcruz@scsengineers.com	WO #:			
Project Name: Lansing Gen Station, 25221070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Z other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B Alkalinity Carb/Bicarb	6020A Total Metals (5)	6020A Dissolved Metals (2-3) (Filtered)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	D		
MW-301	4-5-22	10:45	G	Water	N		X	X	X		
MW-302	4-5-22	15:55		Water							
MW-303		15:10		Water							
MW-304		10:20		Water							
MW-305	4-4-22	15:45		Water							
MW-306	4-4-22	17:05		Water							
MW-302A	4-5-22	17:00		Water							
MW-304A	4-5-22	12:30		Water							
MW-306A	4-4-22	17:30		Water							
MW-307	4-5-22	13:15		Water							
MW-307A	4-5-22	14:10		Water							

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Paul D. Grover	4-6-22 13:52	SCS		4/6/22 1352	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Paul Grover & Ethan Sches	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-69726-16399.2
Client Contact: Rosa Cruz	Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin:	Page: Page 2 of 2
Company: SCS Engineers	PWSID:	Analysis Requested		Job #:
Address: 8450 Hickman Road Suite 27	Due Date Requested:			
City: Clive	TAT Requested (days):			
State, Zip: IA, 50325	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25221070			
Email: rcruz@scsengineers.com	WO #:			
Project Name: Lansing Gen Station, 25221070	Project #: 31011020			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B Alkalinity Carb/Bicarb	6020A Total Metals (6)	6020A Dissolved Metals (2-3)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	D	D	X	
MW-20	4-5-22	17:55	G	Water			X	X	X		
MW-6	4-6-22	9:10		Water			X	X	X		
Field Blank	4-5-22	17:45	↓	Water			X	X	X		
				Water							

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Z	other (specify)

Other

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I II III, IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Paul A. Grover	4-6-22 13:52	SCS		4/6/22 1352	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

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310-228428 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By: N

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 # 1 of 4
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: N | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.8 | Corrected Temp (°C): 1.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used		
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

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By:

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 # 3 of 4
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: N | Correction Factor (°C): +0.0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.1 | Corrected Temp (°C): 1.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used		
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

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By: [signature]

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 # 3 of 4

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: N | Correction Factor (°C): +0.0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.5 | Corrected Temp (°C): 3.5

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used		
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

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By: [signature]

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 # 4 of 4
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes* Cooler oustody 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: N | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.6 | Corrected Temp (°C): 0.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used		
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

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-228428-3
SDG Number:

Login Number: 228428
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-228428-1
Client Project/Site: Lansing Gen Station 25222070
Revision: 1

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett

Authorized for release by:
4/27/2022 9:25:54 AM

Sandie Fredrick, Project Manager II
(920)261-1660
Sandra.Fredrick@et.eurofinsus.com

Table of Contents

Case Narrative

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Job ID: 310-228428-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-228428-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 4/22/2022. The report (revision 1) is being revised due to: Client requested reanalysis of Tl on MW-301. Carryover suspected on initial run.

Receipt
The samples were received on 4/6/2022 1:52 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.6º C, 1.1º C, 1.8º C and 3.5º C.

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

Metals
Method 3005A: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: MW-306 (310-228428-6). The sample(s) was preserved to the appropriate pH in the laboratory.

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

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

Sample Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-228428-1	MW-301	Water	04/05/22 10:45	04/06/22 13:52
310-228428-2	MW-302	Water	04/05/22 15:55	04/06/22 13:52
310-228428-3	MW-303	Water	04/05/22 15:10	04/06/22 13:52
310-228428-4	MW-304	Water	04/05/22 10:20	04/06/22 13:52
310-228428-5	MW-305	Water	04/04/22 15:45	04/06/22 13:52
310-228428-6	MW-306	Water	04/04/22 17:05	04/06/22 13:52
310-228428-7	MW-302A	Water	04/05/22 17:00	04/06/22 13:52
310-228428-8	MW-304A	Water	04/05/22 12:30	04/06/22 13:52
310-228428-9	MW-306A	Water	04/04/22 17:30	04/06/22 13:52
310-228428-10	MW-307	Water	04/05/22 13:15	04/06/22 13:52
310-228428-11	MW-307A	Water	04/05/22 14:10	04/06/22 13:52
310-228428-12	MW-20	Water	04/05/22 17:55	04/06/22 13:52
310-228428-13	MW-6	Water	04/06/22 09:10	04/06/22 13:52
310-228428-14	Field Blank	Water	04/05/22 17:45	04/06/22 13:52

Detection Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-301 — Lab Sample ID: 310-228428-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	22		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	86		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	4.9		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	130		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	220		100	58	ug/L	1		6020A	Total/NA
Calcium	69		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	7.3	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	7.6		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	260		50	26	mg/L	1		SM 2540C	Total/NA
pH	8.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	630.67				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	200.0				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.15				mg/L	1		Field Sampling	Total/NA
pH, Field	8.30				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	554				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-302 — Lab Sample ID: 310-228428-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12		5.0	2.3	mg/L	5		9056A	Total/NA
Arsenic	40		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	690		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	540		100	58	ug/L	1		6020A	Total/NA
Calcium	120		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	1.5		0.50	0.19	ug/L	1		6020A	Total/NA
Total Dissolved Solids	490		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	623.29				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	202.8				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.13				mg/L	1		Field Sampling	Total/NA
pH, Field	6.92				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1151				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	6.3				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	3.21				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-303 — Lab Sample ID: 310-228428-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23		5.0	2.3	mg/L	5		9056A	Total/NA
Fluoride	0.33	J	0.50	0.22	mg/L	5		9056A	Total/NA
Sulfate	54		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	1.3	J	2.0	0.75	ug/L	1		6020A	Total/NA
Barium	200		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	110		100	58	ug/L	1		6020A	Total/NA
Calcium	48		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	5.4	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	9.2		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	180		50	26	mg/L	1		SM 2540C	Total/NA
pH	8.1	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	641.69				ft	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-303 (Continued) — Lab Sample ID: 310-228428-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Oxidation Reduction Potential	202.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.17				mg/L	1		Field Sampling	Total/NA
pH, Field	8.07				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	452.4				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	4.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-304 — Lab Sample ID: 310-228428-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.3		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	20		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	42		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	71	J	100	58	ug/L	1		6020A	Total/NA
Calcium	70		0.50	0.19	mg/L	1		6020A	Total/NA
Molybdenum	2.7		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	240		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	621.72				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	201.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	7.20				mg/L	1		Field Sampling	Total/NA
pH, Field	7.25				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	571.8				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.2				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-305 — Lab Sample ID: 310-228428-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.5	J	5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	42		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	0.89	J	2.0	0.75	ug/L	1		6020A	Total/NA
Barium	97		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	110		100	58	ug/L	1		6020A	Total/NA
Calcium	78		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	2.6	J	10	2.5	ug/L	1		6020A	Total/NA
Selenium	1.7	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	270		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	627.17				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	198.9				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	4.06				mg/L	1		Field Sampling	Total/NA
pH, Field	6.94				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	545.0				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	4.4				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	4.57				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-306 — Lab Sample ID: 310-228428-6

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	100		5.0	2.0	mg/L	5		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-306 (Continued) — Lab Sample ID: 310-228428-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.7		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	350		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	550		100	58	ug/L	1		6020A	Total/NA
Calcium	200		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.49	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	23		10	2.5	ug/L	1		6020A	Total/NA
Total Dissolved Solids	1100		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	620.42				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	196.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.26				mg/L	1		Field Sampling	Total/NA
pH, Field	6.86				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1839				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.0				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-302A — Lab Sample ID: 310-228428-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.6		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	52		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	49		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	170		100	58	ug/L	1		6020A	Total/NA
Calcium	73		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.45	J	0.50	0.19	ug/L	1		6020A	Total/NA
Selenium	1.3	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	300		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	623.71				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	199.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	6.49				mg/L	1		Field Sampling	Total/NA
pH, Field	7.34				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	630.0				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	10.2				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-304A — Lab Sample ID: 310-228428-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16		5.0	2.3	mg/L	5		9056A	Total/NA
Fluoride	0.32	J	0.50	0.22	mg/L	5		9056A	Total/NA
Sulfate	87		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	30		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	1500		100	58	ug/L	1		6020A	Total/NA
Cadmium	0.074	J	0.10	0.055	ug/L	1		6020A	Total/NA
Calcium	38		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.48	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lead	0.81		0.50	0.24	ug/L	1		6020A	Total/NA
Molybdenum	120		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	270		50	26	mg/L	1		SM 2540C	Total/NA
pH	8.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	619.0				ft	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-304A (Continued) — Lab Sample ID: 310-228428-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Oxidation Reduction Potential	198.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.19				mg/L	1		Field Sampling	Total/NA
pH, Field	7.97				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	520.9				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	9.4				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	42.65				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-306A — Lab Sample ID: 310-228428-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.3		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	43		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	61		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	260		100	58	ug/L	1		6020A	Total/NA
Calcium	78		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.19	J	0.50	0.19	ug/L	1		6020A	Total/NA
Total Dissolved Solids	330		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	620.61				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	192.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.13				mg/L	1		Field Sampling	Total/NA
pH, Field	7.19				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	669				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	13.0				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-307 — Lab Sample ID: 310-228428-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	22		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	76		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	1.8	J	2.0	0.75	ug/L	1		6020A	Total/NA
Barium	290		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	400		100	58	ug/L	1		6020A	Total/NA
Calcium	50		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	10		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	16		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	210		50	26	mg/L	1		SM 2540C	Total/NA
pH	8.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	639.74				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	198.2				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.08				mg/L	1		Field Sampling	Total/NA
pH, Field	8.34				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	460				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	6.9				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-307A — Lab Sample ID: 310-228428-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	28		5.0	2.0	mg/L	5		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-307A (Continued)

Lab Sample ID: 310-228428-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.1		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	110		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	430		100	58	ug/L	1		6020A	Total/NA
Calcium	58		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.68		0.50	0.19	ug/L	1		6020A	Total/NA
Molybdenum	5.7		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	250		50	26	mg/L	1		SM 2540C	Total/NA
pH	8.1	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	626.72				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	199.8				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.09				mg/L	1		Field Sampling	Total/NA
pH, Field	7.48				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	563				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	10.8				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-20

Lab Sample ID: 310-228428-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.8		5.0	2.3	mg/L	5		9056A	Total/NA
Fluoride	0.25	J	0.50	0.22	mg/L	5		9056A	Total/NA
Sulfate	630		20	8.0	mg/L	20		9056A	Total/NA
Arsenic	2.7		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	110		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	2700		100	58	ug/L	1		6020A	Total/NA
Calcium	220		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	1.4		0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	4.4	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	35		2.0	1.2	ug/L	1		6020A	Total/NA
Selenium	1.5	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	1100		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	650.86				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	202.9				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.30				mg/L	1		Field Sampling	Total/NA
pH, Field	7.71				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1531				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	7.2				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-6

Lab Sample ID: 310-228428-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.3		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	25		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	48		2.0	0.88	ug/L	1		6020A	Total/NA
Calcium	71		0.50	0.19	mg/L	1		6020A	Total/NA
Total Dissolved Solids	280		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	667.14				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	197.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	8.92				mg/L	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6 (Continued) — Lab Sample ID: 310-228428-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH, Field	7.32				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	599				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.9				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

Client Sample ID: Field Blank — Lab Sample ID: 310-228428-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	6.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-301

Date Collected: 04/05/22 10:45
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22**		5.0	2.3	mg/L			04/12/22 22:01	5
Fluoride	<0.22		0.50	0.22	mg/L			04/12/22 22:01	5
Sulfate	**86**		5.0	2.0	mg/L			04/12/22 22:01	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:00	1
Arsenic	**4.9**		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:00	1
Barium	**130**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:00	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:00	1
Boron	**220**		100	58	ug/L		04/08/22 09:00	04/20/22 22:00	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:00	1
Calcium	**69**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:00	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:00	1
Cobalt	<0.19		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:00	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:00	1
Lithium	**7.3**	**J**	10	2.5	ug/L		04/08/22 09:00	04/20/22 22:00	1
Molybdenum	**7.6**		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:00	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:00	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/26/22 16:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**260**		50	26	mg/L			04/08/22 16:27	1
pH	**8.2**	**HF**	0.1	0.1	SU			04/06/22 15:09	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**630.67**				ft			04/05/22 10:45	1
Oxidation Reduction Potential	**200.0**				millivolts			04/05/22 10:45	1
Oxygen, Dissolved, Client Supplied	**0.15**				mg/L			04/05/22 10:45	1
pH, Field	**8.30**				SU			04/05/22 10:45	1
Specific Conductance, Field	**554**				umhos/cm			04/05/22 10:45	1
Temperature, Field	**8.7**				Degrees C			04/05/22 10:45	1
Turbidity, Field	**0.00**				NTU			04/05/22 10:45	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-302

Date Collected: 04/05/22 15:55
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12**		5.0	2.3	mg/L			04/12/22 22:17	5
Fluoride	<0.22		0.50	0.22	mg/L			04/12/22 22:17	5
Sulfate	<2.0		5.0	2.0	mg/L			04/12/22 22:17	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:03	1
Arsenic	**40**		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:03	1
Barium	**690**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:03	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:03	1
Boron	**540**		100	58	ug/L		04/08/22 09:00	04/20/22 22:03	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:03	1
Calcium	**120**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:03	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:03	1
Cobalt	**1.5**		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:03	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:03	1
Lithium	<2.5		10	2.5	ug/L		04/08/22 09:00	04/20/22 22:03	1
Molybdenum	<1.2		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:03	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:03	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**490**		50	26	mg/L			04/08/22 16:27	1
pH	**7.0**	**HF**	0.1	0.1	SU			04/06/22 15:11	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**623.29**				ft			04/05/22 15:55	1
Oxidation Reduction Potential	**202.8**				millivolts			04/05/22 15:55	1
Oxygen, Dissolved, Client Supplied	**0.13**				mg/L			04/05/22 15:55	1
pH, Field	**6.92**				SU			04/05/22 15:55	1
Specific Conductance, Field	**1151**				umhos/cm			04/05/22 15:55	1
Temperature, Field	**6.3**				Degrees C			04/05/22 15:55	1
Turbidity, Field	**3.21**				NTU			04/05/22 15:55	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-303

Date Collected: 04/05/22 15:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**23**		5.0	2.3	mg/L			04/12/22 22:32	5
Fluoride	**0.33**	**J**	0.50	0.22	mg/L			04/12/22 22:32	5
Sulfate	**54**		5.0	2.0	mg/L			04/12/22 22:32	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:06	1
Arsenic	**1.3**	**J**	2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:06	1
Barium	**200**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:06	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:06	1
Boron	**110**		100	58	ug/L		04/08/22 09:00	04/20/22 22:06	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:06	1
Calcium	**48**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:06	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:06	1
Cobalt	<0.19		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:06	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:06	1
Lithium	**5.4**	**J**	10	2.5	ug/L		04/08/22 09:00	04/20/22 22:06	1
Molybdenum	**9.2**		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:06	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:06	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**180**		50	26	mg/L			04/11/22 16:42	1
pH	**8.1**	**HF**	0.1	0.1	SU			04/06/22 15:12	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**641.69**				ft			04/05/22 15:10	1
Oxidation Reduction Potential	**202.1**				millivolts			04/05/22 15:10	1
Oxygen, Dissolved, Client Supplied	**1.17**				mg/L			04/05/22 15:10	1
pH, Field	**8.07**				SU			04/05/22 15:10	1
Specific Conductance, Field	**452.4**				umhos/cm			04/05/22 15:10	1
Temperature, Field	**4.6**				Degrees C			04/05/22 15:10	1
Turbidity, Field	**0.00**				NTU			04/05/22 15:10	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-304

Date Collected: 04/05/22 10:20
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.3**		5.0	2.3	mg/L			04/12/22 22:48	5
Fluoride	<0.22		0.50	0.22	mg/L			04/12/22 22:48	5
Sulfate	**20**		5.0	2.0	mg/L			04/12/22 22:48	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:09	1
Arsenic	<0.75		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:09	1
Barium	**42**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:09	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:09	1
Boron	**71**	**J**	100	58	ug/L		04/08/22 09:00	04/20/22 22:09	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:09	1
Calcium	**70**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:09	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:09	1
Cobalt	<0.19		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:09	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:09	1
Lithium	<2.5		10	2.5	ug/L		04/08/22 09:00	04/20/22 22:09	1
Molybdenum	**2.7**		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:09	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:09	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**240**		50	26	mg/L			04/11/22 16:42	1
pH	**7.5**	**HF**	0.1	0.1	SU			04/06/22 15:14	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**621.72**				ft			04/05/22 10:20	1
Oxidation Reduction Potential	**201.4**				millivolts			04/05/22 10:20	1
Oxygen, Dissolved, Client Supplied	**7.20**				mg/L			04/05/22 10:20	1
pH, Field	**7.25**				SU			04/05/22 10:20	1
Specific Conductance, Field	**571.8**				umhos/cm			04/05/22 10:20	1
Temperature, Field	**8.2**				Degrees C			04/05/22 10:20	1
Turbidity, Field	**0.00**				NTU			04/05/22 10:20	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-305

Date Collected: 04/04/22 15:45
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.5**	**J**	5.0	2.3	mg/L			04/12/22 23:03	5
Fluoride	<0.22		0.50	0.22	mg/L			04/12/22 23:03	5
Sulfate	**42**		5.0	2.0	mg/L			04/12/22 23:03	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:26	1
Arsenic	**0.89**	**J**	2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:26	1
Barium	**97**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:26	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:26	1
Boron	**110**		100	58	ug/L		04/08/22 09:00	04/20/22 22:26	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:26	1
Calcium	**78**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:26	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:26	1
Cobalt	<0.19		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:26	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:26	1
Lithium	**2.6**	**J**	10	2.5	ug/L		04/08/22 09:00	04/20/22 22:26	1
Molybdenum	<1.2		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:26	1
Selenium	**1.7**	**J**	5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:26	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**270**		50	26	mg/L			04/08/22 16:27	1
pH	**7.4**	**HF**	0.1	0.1	SU			04/06/22 15:15	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**627.17**				ft			04/04/22 15:45	1
Oxidation Reduction Potential	**198.9**				millivolts			04/04/22 15:45	1
Oxygen, Dissolved, Client Supplied	**4.06**				mg/L			04/04/22 15:45	1
pH, Field	**6.94**				SU			04/04/22 15:45	1
Specific Conductance, Field	**545.0**				umhos/cm			04/04/22 15:45	1
Temperature, Field	**4.4**				Degrees C			04/04/22 15:45	1
Turbidity, Field	**4.57**				NTU			04/04/22 15:45	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-306

Date Collected: 04/04/22 17:05
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**41**		5.0	2.3	mg/L			04/12/22 23:19	5
Fluoride	<0.22		0.50	0.22	mg/L			04/12/22 23:19	5
Sulfate	**100**		5.0	2.0	mg/L			04/12/22 23:19	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:29	1
Arsenic	**7.7**		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:29	1
Barium	**350**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:29	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:29	1
Boron	**550**		100	58	ug/L		04/08/22 09:00	04/20/22 22:29	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:29	1
Calcium	**200**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:29	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:29	1
Cobalt	**0.49**	**J**	0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:29	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:29	1
Lithium	**23**		10	2.5	ug/L		04/08/22 09:00	04/20/22 22:29	1
Molybdenum	<1.2		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:29	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:29	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:29	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1100**		50	26	mg/L			04/08/22 16:27	1
pH	**7.0**	**HF**	0.1	0.1	SU			04/06/22 15:16	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**620.42**				ft			04/04/22 17:05	1
Oxidation Reduction Potential	**196.3**				millivolts			04/04/22 17:05	1
Oxygen, Dissolved, Client Supplied	**0.26**				mg/L			04/04/22 17:05	1
pH, Field	**6.86**				SU			04/04/22 17:05	1
Specific Conductance, Field	**1839**				umhos/cm			04/04/22 17:05	1
Temperature, Field	**12.0**				Degrees C			04/04/22 17:05	1
Turbidity, Field	**0.00**				NTU			04/04/22 17:05	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-302A

Date Collected: 04/05/22 17:00
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.6**		5.0	2.3	mg/L			04/12/22 23:35	5
Fluoride	<0.22		0.50	0.22	mg/L			04/12/22 23:35	5
Sulfate	**52**		5.0	2.0	mg/L			04/12/22 23:35	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:32	1
Arsenic	<0.75		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:32	1
Barium	**49**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:32	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:32	1
Boron	**170**		100	58	ug/L		04/08/22 09:00	04/20/22 22:32	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:32	1
Calcium	**73**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:32	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:32	1
Cobalt	**0.45**	**J**	0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:32	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:32	1
Lithium	<2.5		10	2.5	ug/L		04/08/22 09:00	04/20/22 22:32	1
Molybdenum	<1.2		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:32	1
Selenium	**1.3**	**J**	5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:32	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**300**		50	26	mg/L			04/11/22 16:42	1
pH	**7.4**	**HF**	0.1	0.1	SU			04/06/22 15:17	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**623.71**				ft			04/05/22 17:00	1
Oxidation Reduction Potential	**199.7**				millivolts			04/05/22 17:00	1
Oxygen, Dissolved, Client Supplied	**6.49**				mg/L			04/05/22 17:00	1
pH, Field	**7.34**				SU			04/05/22 17:00	1
Specific Conductance, Field	**630.0**				umhos/cm			04/05/22 17:00	1
Temperature, Field	**10.2**				Degrees C			04/05/22 17:00	1
Turbidity, Field	**0.00**				NTU			04/05/22 17:00	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-304A

Date Collected: 04/05/22 12:30
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		5.0	2.3	mg/L			04/12/22 23:50	5
Fluoride	0.32	J	0.50	0.22	mg/L			04/12/22 23:50	5
Sulfate	87		5.0	2.0	mg/L			04/12/22 23:50	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:35	1
Arsenic	<0.75		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:35	1
Barium	30		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:35	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:35	1
Boron	1500		100	58	ug/L		04/08/22 09:00	04/20/22 22:35	1
Cadmium	0.074	J	0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:35	1
Calcium	38		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:35	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:35	1
Cobalt	0.48	J	0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:35	1
Lead	0.81		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:35	1
Lithium	<2.5		10	2.5	ug/L		04/08/22 09:00	04/20/22 22:35	1
Molybdenum	120		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:35	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:35	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	270		50	26	mg/L			04/11/22 16:42	1
pH	8.0	HF	0.1	0.1	SU			04/06/22 15:18	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	619.0				ft			04/05/22 12:30	1
Oxidation Reduction Potential	198.1				millivolts			04/05/22 12:30	1
Oxygen, Dissolved, Client Supplied	0.19				mg/L			04/05/22 12:30	1
pH, Field	7.97				SU			04/05/22 12:30	1
Specific Conductance, Field	520.9				umhos/cm			04/05/22 12:30	1
Temperature, Field	9.4				Degrees C			04/05/22 12:30	1
Turbidity, Field	42.65				NTU			04/05/22 12:30	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-306A

Date Collected: 04/04/22 17:30
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-9

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.3**		5.0	2.3	mg/L			04/12/22 00:37	5
Fluoride	<0.22		0.50	0.22	mg/L			04/12/22 00:37	5
Sulfate	**43**		5.0	2.0	mg/L			04/12/22 00:37	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:39	1
Arsenic	<0.75		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:39	1
Barium	**61**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:39	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:39	1
Boron	**260**		100	58	ug/L		04/08/22 09:00	04/20/22 22:39	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:39	1
Calcium	**78**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:39	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:39	1
Cobalt	**0.19**	**J**	0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:39	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:39	1
Lithium	<2.5		10	2.5	ug/L		04/08/22 09:00	04/20/22 22:39	1
Molybdenum	<1.2		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:39	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:39	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**330**		50	26	mg/L			04/08/22 16:27	1
pH	**7.4**	**HF**	0.1	0.1	SU			04/06/22 15:19	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**620.61**				ft			04/04/22 17:30	1
Oxidation Reduction Potential	**192.7**				millivolts			04/04/22 17:30	1
Oxygen, Dissolved, Client Supplied	**1.13**				mg/L			04/04/22 17:30	1
pH, Field	**7.19**				SU			04/04/22 17:30	1
Specific Conductance, Field	**669**				umhos/cm			04/04/22 17:30	1
Temperature, Field	**13.0**				Degrees C			04/04/22 17:30	1
Turbidity, Field	**0.00**				NTU			04/04/22 17:30	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-307

Date Collected: 04/05/22 13:15
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-10

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22**		5.0	2.3	mg/L			04/12/22 00:53	5
Fluoride	<0.22		0.50	0.22	mg/L			04/12/22 00:53	5
Sulfate	**76**		5.0	2.0	mg/L			04/12/22 00:53	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:42	1
Arsenic	**1.8**	**J**	2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:42	1
Barium	**290**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:42	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:42	1
Boron	**400**		100	58	ug/L		04/08/22 09:00	04/20/22 22:42	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:42	1
Calcium	**50**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:42	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:42	1
Cobalt	<0.19		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:42	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:42	1
Lithium	**10**		10	2.5	ug/L		04/08/22 09:00	04/20/22 22:42	1
Molybdenum	**16**		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:42	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:42	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**210**		50	26	mg/L			04/11/22 16:42	1
pH	**8.2**	**HF**	0.1	0.1	SU			04/06/22 15:23	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**639.74**				ft			04/05/22 13:15	1
Oxidation Reduction Potential	**198.2**				millivolts			04/05/22 13:15	1
Oxygen, Dissolved, Client Supplied	**0.08**				mg/L			04/05/22 13:15	1
pH, Field	**8.34**				SU			04/05/22 13:15	1
Specific Conductance, Field	**460**				umhos/cm			04/05/22 13:15	1
Temperature, Field	**6.9**				Degrees C			04/05/22 13:15	1
Turbidity, Field	**0.00**				NTU			04/05/22 13:15	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-307A

Date Collected: 04/05/22 14:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-11

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**13**		5.0	2.3	mg/L			04/13/22 01:08	5
Fluoride	<0.22		0.50	0.22	mg/L			04/13/22 01:08	5
Sulfate	**28**		5.0	2.0	mg/L			04/13/22 01:08	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:48	1
Arsenic	**2.1**		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:48	1
Barium	**110**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:48	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:48	1
Boron	**430**		100	58	ug/L		04/08/22 09:00	04/20/22 22:48	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:48	1
Calcium	**58**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:48	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:48	1
Cobalt	**0.68**		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:48	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:48	1
Lithium	<2.5		10	2.5	ug/L		04/08/22 09:00	04/20/22 22:48	1
Molybdenum	**5.7**		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:48	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:48	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**250**		50	26	mg/L			04/11/22 16:42	1
pH	**8.1**	**HF**	0.1	0.1	SU			04/06/22 15:25	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**626.72**				ft			04/05/22 14:10	1
Oxidation Reduction Potential	**199.8**				millivolts			04/05/22 14:10	1
Oxygen, Dissolved, Client Supplied	**0.09**				mg/L			04/05/22 14:10	1
pH, Field	**7.48**				SU			04/05/22 14:10	1
Specific Conductance, Field	**563**				umhos/cm			04/05/22 14:10	1
Temperature, Field	**10.8**				Degrees C			04/05/22 14:10	1
Turbidity, Field	**0.00**				NTU			04/05/22 14:10	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-20

Date Collected: 04/05/22 17:55
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-12

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.8		5.0	2.3	mg/L			04/12/22 01:12	5
Fluoride	0.25	J	0.50	0.22	mg/L			04/12/22 01:12	5
Sulfate	630		20	8.0	mg/L			04/12/22 09:01	20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:52	1
Arsenic	2.7		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:52	1
Barium	110		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:52	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:52	1
Boron	2700		100	58	ug/L		04/08/22 09:00	04/20/22 22:52	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:52	1
Calcium	220		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:52	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:52	1
Cobalt	1.4		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:52	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:52	1
Lithium	4.4	J	10	2.5	ug/L		04/08/22 09:00	04/20/22 22:52	1
Molybdenum	35		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:52	1
Selenium	1.5	J	5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:52	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 13:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1100		50	26	mg/L			04/11/22 16:42	1
pH	7.8	HF	0.1	0.1	SU			04/06/22 15:26	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	650.86				ft			04/05/22 17:55	1
Oxidation Reduction Potential	202.9				millivolts			04/05/22 17:55	1
Oxygen, Dissolved, Client Supplied	0.30				mg/L			04/05/22 17:55	1
pH, Field	7.71				SU			04/05/22 17:55	1
Specific Conductance, Field	1531				umhos/cm			04/05/22 17:55	1
Temperature, Field	7.2				Degrees C			04/05/22 17:55	1
Turbidity, Field	0.00				NTU			04/05/22 17:55	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-6

Date Collected: 04/06/22 09:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-13

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.3**		5.0	2.3	mg/L			04/12/22 01:39	5
Fluoride	<0.22		0.50	0.22	mg/L			04/12/22 01:39	5
Sulfate	**25**		5.0	2.0	mg/L			04/12/22 01:39	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 22:55	1
Arsenic	<0.75		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 22:55	1
Barium	**48**		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 22:55	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 22:55	1
Boron	<58		100	58	ug/L		04/08/22 09:00	04/20/22 22:55	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 22:55	1
Calcium	**71**		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 22:55	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 22:55	1
Cobalt	<0.19		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 22:55	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 22:55	1
Lithium	<2.5		10	2.5	ug/L		04/08/22 09:00	04/20/22 22:55	1
Molybdenum	<1.2		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 22:55	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 22:55	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 22:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 13:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**280**		50	26	mg/L			04/12/22 13:50	1
pH	**7.6**	**HF**	0.1	0.1	SU			04/06/22 15:27	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	**667.14**				ft			04/06/22 09:10	1
Oxidation Reduction Potential	**197.7**				millivolts			04/06/22 09:10	1
Oxygen, Dissolved, Client Supplied	**8.92**				mg/L			04/06/22 09:10	1
pH, Field	**7.32**				SU			04/06/22 09:10	1
Specific Conductance, Field	**599**				umhos/cm			04/06/22 09:10	1
Temperature, Field	**8.9**				Degrees C			04/06/22 09:10	1
Turbidity, Field	**0.00**				NTU			04/06/22 09:10	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: Field Blank

Date Collected: 04/05/22 17:45
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-14

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.45		1.0	0.45	mg/L			04/12/22 01:55	1
Fluoride	<0.044		0.10	0.044	mg/L			04/12/22 01:55	1
Sulfate	<0.40		1.0	0.40	mg/L			04/12/22 01:55	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 23:11	1
Arsenic	<0.75		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 23:11	1
Barium	<0.88		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 23:11	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 23:11	1
Boron	<58		100	58	ug/L		04/08/22 09:00	04/20/22 23:11	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 23:11	1
Calcium	<0.19		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 23:11	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 23:11	1
Cobalt	<0.19		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 23:11	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 23:11	1
Lithium	<2.5		10	2.5	ug/L		04/08/22 09:00	04/20/22 23:11	1
Molybdenum	<1.2		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 23:11	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 23:11	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 23:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 13:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			04/11/22 16:42	1
pH	**6.4**	**HF**	0.1	0.1	SU			04/06/22 15:28	1

Definitions/Glossary

Client: SCS Engineers
Job ID: 310-228428-1
Project/Site: Lansing Gen Station 25222070

Qualifiers

HPLC/IC

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.

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.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-349755/34
Matrix: Water
Analysis Batch: 349755

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			04/12/22 08:45	1
Fluoride	<0.044		0.10	0.044	mg/L			04/12/22 08:45	1
Sulfate	<0.40		1.0	0.40	mg/L			04/12/22 08:45	1

Lab Sample ID: LCS 310-349755/3
Matrix: Water
Analysis Batch: 349755

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	9.34		mg/L		93	90 - 110
Fluoride	2.00	1.90		mg/L		95	90 - 110
Sulfate	10.0	9.58		mg/L		96	90 - 110

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-349167/1-A
Matrix: Water
Analysis Batch: 350579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 349167

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		04/08/22 09:00	04/20/22 21:41	1
Arsenic	<0.75		2.0	0.75	ug/L		04/08/22 09:00	04/20/22 21:41	1
Barium	<0.88		2.0	0.88	ug/L		04/08/22 09:00	04/20/22 21:41	1
Beryllium	<0.27		1.0	0.27	ug/L		04/08/22 09:00	04/20/22 21:41	1
Boron	<58		100	58	ug/L		04/08/22 09:00	04/20/22 21:41	1
Cadmium	<0.055		0.10	0.055	ug/L		04/08/22 09:00	04/20/22 21:41	1
Calcium	<0.19		0.50	0.19	mg/L		04/08/22 09:00	04/20/22 21:41	1
Chromium	<1.1		5.0	1.1	ug/L		04/08/22 09:00	04/20/22 21:41	1
Cobalt	<0.19		0.50	0.19	ug/L		04/08/22 09:00	04/20/22 21:41	1
Lead	<0.24		0.50	0.24	ug/L		04/08/22 09:00	04/20/22 21:41	1
Lithium	<2.5		10	2.5	ug/L		04/08/22 09:00	04/20/22 21:41	1
Molybdenum	<1.2		2.0	1.2	ug/L		04/08/22 09:00	04/20/22 21:41	1
Selenium	<0.96		5.0	0.96	ug/L		04/08/22 09:00	04/20/22 21:41	1
Thallium	<0.26		1.0	0.26	ug/L		04/08/22 09:00	04/20/22 21:41	1

Lab Sample ID: LCS 310-349167/2-A
Matrix: Water
Analysis Batch: 350579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 349167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	208		ug/L		104	80 - 120
Arsenic	200	195		ug/L		98	80 - 120
Barium	100	104		ug/L		104	80 - 120
Beryllium	100	97.4		ug/L		97	80 - 120
Boron	200	196		ug/L		98	80 - 120
Cadmium	100	99.9		ug/L		100	80 - 120
Calcium	2.00	1.82		mg/L		91	80 - 120
Chromium	100	94.4		ug/L		94	80 - 120
Cobalt	100	98.1		ug/L		98	80 - 120

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

Lab Sample ID: LCS 310-349167/2-A
Matrix: Water
Analysis Batch: 350579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 349167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	200	202		ug/L		101	80 - 120
Lithium	200	194		ug/L		97	80 - 120
Molybdenum	200	199		ug/L		99	80 - 120
Selenium	400	388		ug/L		97	80 - 120

Lab Sample ID: LCS 310-349167/2-A
Matrix: Water
Analysis Batch: 350694

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 349167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	200	210		ug/L		105	80 - 120

Lab Sample ID: 310-228428-10 DU
Matrix: Water
Analysis Batch: 350579

Client Sample ID: MW-307
Prep Type: Total/NA
Prep Batch: 349167

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.69		<0.69		ug/L		NC	20
Arsenic	1.8	J	1.83	J	ug/L		2	20
Barium	290		283		ug/L		2	20
Beryllium	<0.27		<0.27		ug/L		NC	20
Boron	400		393		ug/L		2	20
Cadmium	<0.055		<0.055		ug/L		NC	20
Calcium	50		50.0		mg/L		0.1	20
Chromium	<1.1		<1.1		ug/L		NC	20
Cobalt	<0.19		<0.19		ug/L		NC	20
Lead	<0.24		<0.24		ug/L		NC	20
Lithium	10		9.95	J	ug/L		2	20
Molybdenum	16		15.7		ug/L		0.5	20
Selenium	<0.96		<0.96		ug/L		NC	20
Thallium	<0.26		<0.26		ug/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-350233/1-A
Matrix: Water
Analysis Batch: 350374

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 350233

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		04/18/22 14:08	04/19/22 12:08	1

Lab Sample ID: LCS 310-350233/2-A
Matrix: Water
Analysis Batch: 350374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 350233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.45		ug/L		87	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-349316/1
Matrix: Water
Analysis Batch: 349316

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			04/08/22 16:27	1

Lab Sample ID: LCS 310-349316/2
Matrix: Water
Analysis Batch: 349316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	904		mg/L		90	90 - 110

Lab Sample ID: MB 310-349473/1
Matrix: Water
Analysis Batch: 349473

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			04/11/22 16:42	1

Lab Sample ID: LCS 310-349473/2
Matrix: Water
Analysis Batch: 349473

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	920		mg/L		92	90 - 110

Lab Sample ID: MB 310-349583/1
Matrix: Water
Analysis Batch: 349583

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			04/12/22 13:50	1

Lab Sample ID: LCS 310-349583/2
Matrix: Water
Analysis Batch: 349583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	902		mg/L		90	90 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-348982/53
Matrix: Water
Analysis Batch: 348982

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		101	98 - 102

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: 310-228428-1 DU
Client Sample ID: MW-301
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 348982

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	8.2	HF		8.2		SU				0.1	20

Lab Sample ID: 310-228428-10 DU
Client Sample ID: MW-307
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 348982

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	8.2	HF		8.2		SU				0.1	20

QC Association Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

HPLC/IC

Analysis Batch: 349755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	9056A	
310-228428-2	MW-302	Total/NA	Water	9056A	
310-228428-3	MW-303	Total/NA	Water	9056A	
310-228428-4	MW-304	Total/NA	Water	9056A	
310-228428-5	MW-305	Total/NA	Water	9056A	
310-228428-6	MW-306	Total/NA	Water	9056A	
310-228428-7	MW-302A	Total/NA	Water	9056A	
310-228428-8	MW-304A	Total/NA	Water	9056A	
310-228428-9	MW-306A	Total/NA	Water	9056A	
310-228428-10	MW-307	Total/NA	Water	9056A	
310-228428-11	MW-307A	Total/NA	Water	9056A	
310-228428-12	MW-20	Total/NA	Water	9056A	
310-228428-12	MW-20	Total/NA	Water	9056A	
310-228428-13	MW-6	Total/NA	Water	9056A	
310-228428-14	Field Blank	Total/NA	Water	9056A	
MB 310-349755/34	Method Blank	Total/NA	Water	9056A	
LCS 310-349755/3	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 349167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	3005A	
310-228428-2	MW-302	Total/NA	Water	3005A	
310-228428-3	MW-303	Total/NA	Water	3005A	
310-228428-4	MW-304	Total/NA	Water	3005A	
310-228428-5	MW-305	Total/NA	Water	3005A	
310-228428-6	MW-306	Total/NA	Water	3005A	
310-228428-7	MW-302A	Total/NA	Water	3005A	
310-228428-8	MW-304A	Total/NA	Water	3005A	
310-228428-9	MW-306A	Total/NA	Water	3005A	
310-228428-10	MW-307	Total/NA	Water	3005A	
310-228428-11	MW-307A	Total/NA	Water	3005A	
310-228428-12	MW-20	Total/NA	Water	3005A	
310-228428-13	MW-6	Total/NA	Water	3005A	
310-228428-14	Field Blank	Total/NA	Water	3005A	
MB 310-349167/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-349167/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-228428-10 DU	MW-307	Total/NA	Water	3005A	

Prep Batch: 350233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	7470A	
310-228428-2	MW-302	Total/NA	Water	7470A	
310-228428-3	MW-303	Total/NA	Water	7470A	
310-228428-4	MW-304	Total/NA	Water	7470A	
310-228428-5	MW-305	Total/NA	Water	7470A	
310-228428-6	MW-306	Total/NA	Water	7470A	
310-228428-7	MW-302A	Total/NA	Water	7470A	
310-228428-8	MW-304A	Total/NA	Water	7470A	
310-228428-9	MW-306A	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 350233 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-10	MW-307	Total/NA	Water	7470A	
310-228428-11	MW-307A	Total/NA	Water	7470A	
310-228428-12	MW-20	Total/NA	Water	7470A	
310-228428-13	MW-6	Total/NA	Water	7470A	
310-228428-14	Field Blank	Total/NA	Water	7470A	
MB 310-350233/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-350233/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 350374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	7470A	350233
310-228428-2	MW-302	Total/NA	Water	7470A	350233
310-228428-3	MW-303	Total/NA	Water	7470A	350233
310-228428-4	MW-304	Total/NA	Water	7470A	350233
310-228428-5	MW-305	Total/NA	Water	7470A	350233
310-228428-6	MW-306	Total/NA	Water	7470A	350233
310-228428-7	MW-302A	Total/NA	Water	7470A	350233
310-228428-8	MW-304A	Total/NA	Water	7470A	350233
310-228428-9	MW-306A	Total/NA	Water	7470A	350233
310-228428-10	MW-307	Total/NA	Water	7470A	350233
310-228428-11	MW-307A	Total/NA	Water	7470A	350233
310-228428-12	MW-20	Total/NA	Water	7470A	350233
310-228428-13	MW-6	Total/NA	Water	7470A	350233
310-228428-14	Field Blank	Total/NA	Water	7470A	350233
MB 310-350233/1-A	Method Blank	Total/NA	Water	7470A	350233
LCS 310-350233/2-A	Lab Control Sample	Total/NA	Water	7470A	350233

Analysis Batch: 350579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	6020A	349167
310-228428-2	MW-302	Total/NA	Water	6020A	349167
310-228428-3	MW-303	Total/NA	Water	6020A	349167
310-228428-4	MW-304	Total/NA	Water	6020A	349167
310-228428-5	MW-305	Total/NA	Water	6020A	349167
310-228428-6	MW-306	Total/NA	Water	6020A	349167
310-228428-7	MW-302A	Total/NA	Water	6020A	349167
310-228428-8	MW-304A	Total/NA	Water	6020A	349167
310-228428-9	MW-306A	Total/NA	Water	6020A	349167
310-228428-10	MW-307	Total/NA	Water	6020A	349167
310-228428-11	MW-307A	Total/NA	Water	6020A	349167
310-228428-12	MW-20	Total/NA	Water	6020A	349167
310-228428-13	MW-6	Total/NA	Water	6020A	349167
310-228428-14	Field Blank	Total/NA	Water	6020A	349167
MB 310-349167/1-A	Method Blank	Total/NA	Water	6020A	349167
LCS 310-349167/2-A	Lab Control Sample	Total/NA	Water	6020A	349167
310-228428-10 DU	MW-307	Total/NA	Water	6020A	349167

Analysis Batch: 350694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-349167/2-A	Lab Control Sample	Total/NA	Water	6020A	349167

Metals

Analysis Batch: 351166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	6020A	349167

General Chemistry

Analysis Batch: 348982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	SM 4500 H+ B	
310-228428-2	MW-302	Total/NA	Water	SM 4500 H+ B	
310-228428-3	MW-303	Total/NA	Water	SM 4500 H+ B	
310-228428-4	MW-304	Total/NA	Water	SM 4500 H+ B	
310-228428-5	MW-305	Total/NA	Water	SM 4500 H+ B	
310-228428-6	MW-306	Total/NA	Water	SM 4500 H+ B	
310-228428-7	MW-302A	Total/NA	Water	SM 4500 H+ B	
310-228428-8	MW-304A	Total/NA	Water	SM 4500 H+ B	
310-228428-9	MW-306A	Total/NA	Water	SM 4500 H+ B	
310-228428-10	MW-307	Total/NA	Water	SM 4500 H+ B	
310-228428-11	MW-307A	Total/NA	Water	SM 4500 H+ B	
310-228428-12	MW-20	Total/NA	Water	SM 4500 H+ B	
310-228428-13	MW-6	Total/NA	Water	SM 4500 H+ B	
310-228428-14	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-348982/27	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 310-348982/53	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-228428-1 DU	MW-301	Total/NA	Water	SM 4500 H+ B	
310-228428-10 DU	MW-307	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 349316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	SM 2540C	
310-228428-2	MW-302	Total/NA	Water	SM 2540C	
310-228428-5	MW-305	Total/NA	Water	SM 2540C	
310-228428-6	MW-306	Total/NA	Water	SM 2540C	
310-228428-9	MW-306A	Total/NA	Water	SM 2540C	
MB 310-349316/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-349316/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 349473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-3	MW-303	Total/NA	Water	SM 2540C	
310-228428-4	MW-304	Total/NA	Water	SM 2540C	
310-228428-7	MW-302A	Total/NA	Water	SM 2540C	
310-228428-8	MW-304A	Total/NA	Water	SM 2540C	
310-228428-10	MW-307	Total/NA	Water	SM 2540C	
310-228428-11	MW-307A	Total/NA	Water	SM 2540C	
310-228428-12	MW-20	Total/NA	Water	SM 2540C	
310-228428-14	Field Blank	Total/NA	Water	SM 2540C	
MB 310-349473/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-349473/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 349583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-13	MW-6	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 349583 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-349583/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-349583/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 350766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	Field Sampling	
310-228428-2	MW-302	Total/NA	Water	Field Sampling	
310-228428-3	MW-303	Total/NA	Water	Field Sampling	
310-228428-4	MW-304	Total/NA	Water	Field Sampling	
310-228428-5	MW-305	Total/NA	Water	Field Sampling	
310-228428-6	MW-306	Total/NA	Water	Field Sampling	
310-228428-7	MW-302A	Total/NA	Water	Field Sampling	
310-228428-8	MW-304A	Total/NA	Water	Field Sampling	
310-228428-9	MW-306A	Total/NA	Water	Field Sampling	
310-228428-10	MW-307	Total/NA	Water	Field Sampling	
310-228428-11	MW-307A	Total/NA	Water	Field Sampling	
310-228428-12	MW-20	Total/NA	Water	Field Sampling	
310-228428-13	MW-6	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: SCS Engineers
Job ID: 310-228428-1
Project/Site: Lansing Gen Station 25222070

Client Sample ID: MW-301
Lab Sample ID: 310-228428-1
Date Collected: 04/05/22 10:45
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 22:01	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	351166	04/26/22 16:27	SAP	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:00	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:34	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349316	04/08/22 16:27	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:09	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/05/22 10:45	SLD	TAL CF

Client Sample ID: MW-302
Lab Sample ID: 310-228428-2
Date Collected: 04/05/22 15:55
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 22:17	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:03	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:36	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349316	04/08/22 16:27	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:11	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/05/22 15:55	SLD	TAL CF

Client Sample ID: MW-303
Lab Sample ID: 310-228428-3
Date Collected: 04/05/22 15:10
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 22:32	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:06	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:38	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349473	04/11/22 16:42	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:12	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/05/22 15:10	SLD	TAL CF

Lab Chronicle

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-304
Date Collected: 04/05/22 10:20
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 22:48	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:09	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:40	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349473	04/11/22 16:42	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:14	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/05/22 10:20	SLD	TAL CF

Client Sample ID: MW-305
Date Collected: 04/04/22 15:45
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 23:03	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:26	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:42	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349316	04/08/22 16:27	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:15	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/04/22 15:45	SLD	TAL CF

Client Sample ID: MW-306
Date Collected: 04/04/22 17:05
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 23:19	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:29	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:44	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349316	04/08/22 16:27	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:16	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/04/22 17:05	SLD	TAL CF

Client Sample ID: MW-302A
Date Collected: 04/05/22 17:00
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 23:35	JNR	TAL CF

Lab Chronicle

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-302A
Date Collected: 04/05/22 17:00
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:32	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:46	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349473	04/11/22 16:42	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:17	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/05/22 17:00	SLD	TAL CF

Client Sample ID: MW-304A
Date Collected: 04/05/22 12:30
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 23:50	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:35	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:48	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349473	04/11/22 16:42	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:18	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/05/22 12:30	SLD	TAL CF

Client Sample ID: MW-306A
Date Collected: 04/04/22 17:30
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 00:37	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:39	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:55	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349316	04/08/22 16:27	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:19	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/04/22 17:30	SLD	TAL CF

Client Sample ID: MW-307
Date Collected: 04/05/22 13:15
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 00:53	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:42	SAP	TAL CF

Client Sample ID: MW-307

Lab Sample ID: 310-228428-10

Date Collected: 04/05/22 13:15

Matrix: Water

Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:57	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349473	04/11/22 16:42	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:23	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/05/22 13:15	SLD	TAL CF

Client Sample ID: MW-307A

Lab Sample ID: 310-228428-11

Date Collected: 04/05/22 14:10

Matrix: Water

Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/13/22 01:08	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:48	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 12:59	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349473	04/11/22 16:42	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:25	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/05/22 14:10	SLD	TAL CF

Client Sample ID: MW-20

Lab Sample ID: 310-228428-12

Date Collected: 04/05/22 17:55

Matrix: Water

Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 01:12	JNR	TAL CF
Total/NA	Analysis	9056A		20	349755	04/12/22 09:01	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:52	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 13:01	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349473	04/11/22 16:42	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:26	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/05/22 17:55	SLD	TAL CF

Client Sample ID: MW-6

Lab Sample ID: 310-228428-13

Date Collected: 04/06/22 09:10

Matrix: Water

Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	349755	04/12/22 01:39	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 22:55	SAP	TAL CF

Lab Chronicle

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Client Sample ID: MW-6

Lab Sample ID: 310-228428-13

Date Collected: 04/06/22 09:10

Matrix: Water

Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 13:03	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349583	04/12/22 13:50	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:27	JAJ	TAL CF
Total/NA	Analysis	Field Sampling		1	350766	04/06/22 09:10	SLD	TAL CF

Client Sample ID: Field Blank

Lab Sample ID: 310-228428-14

Date Collected: 04/05/22 17:45

Matrix: Water

Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	349755	04/12/22 01:55	JNR	TAL CF
Total/NA	Prep	3005A			349167	04/08/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	350579	04/20/22 23:11	SAP	TAL CF
Total/NA	Prep	7470A			350233	04/18/22 14:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	350374	04/19/22 13:05	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	349473	04/11/22 16:42	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	348982	04/06/22 15:28	JAJ	TAL CF

Laboratory References:

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

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-228428-1
Project/Site: Lansing Gen Station 25222070

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CF
SM 4500 H+ B	pH	SM	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3005A	Preparation, Total Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL 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:

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

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Paul Grover + Ethan Schaffer	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-69725-16398.1
Client Contact: Mr Tom Karwoski	Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin:	Page: Page 1 of 2
Company: SCS Engineers	PWSID:			Job #:
Address: 2830 Dairy Drive	Due Date Requested:			
City: Madison	TAT Requested (days):			
State, Zip: WI 53718-6751	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25221070			
Email: tkarwoski@scsengineers.com	WO #:			
Project Name: Lansing Gen Station, 25221070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Z other (specify)

Other

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Metals (14)	2540C_Calcd, 9056A_ORGFM_28D, SM4500_H+	Radium 226	Radium 228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	D		
MW-301	4-5-22	10:45	G	Water	N		X	X	X	X		
MW-302	4-5-22	15:55		Water	N							
MW-303	4-5-22	15:10		Water	N							
MW-304	4-5-22	10:20		Water								
MW-305	4-4-22	15:45		Water								
MW-306	4-4-22	17:05		Water								
MW-302A	4-5-22	17 00		Water								
MW-304A	4-5-22	12.30		Water								
MW-306A	4-4-22	17:30		Water								
MW-307	4-5-22	13.15		Water								
MW-307A	4-5-22	14 10	V	Water	V		V	V	V	V		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I II III IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Paul A. Grover	4-6-22 13:53	SCS		4/6/22 1352	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Paul Groos & Ethan Schaefer	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-69725-16398.2
Client Contact: Mr Tom Karwoski	Phone:	E-Mai sandra.fredrick@eurofinset.com	State of Origin:	Page: Page 2 of 2
Company: SCS Engineers	PWSID:			Job #:
Address: 2830 Dairy Drive	Due Date Requested:			
City: Madison	TAT Requested (days):			
State, Zip: WI 53718-6751	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25221070			
Email: tkarwoski@scsengineers.com	WO #:			
Project Name: Lansing Gen Station, 25221070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Metals (14)	2540C_Calcd, 9056A_ORGFM_28D, SM4500_H+	903.0 Radium 226	904.0 Radium 228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	D		
MW-20	4-5-22	17:55	G	Water	N		X	X	X	X		
MW-6	4-6-22	9:10	G	Water	N		X	X	X	X		
Field Blank	4-4-22	17.20	G	Water	N		X	X	X	X		
				Water								

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Z	other (specify)

Other

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I II III, IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Paul A. Groos	4-6-22 13:52	SCS		4/6/22 1352	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

4/27/2022 (Rev. 1)

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310-228428 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By: N

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 # 1 of 4
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: N | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.8 | Corrected Temp (°C): 1.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used		
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

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By

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 # 3 of 4	
Cooler Custody Seals Present? No	☒ Yes ☐ No	*If yes* Cooler custody seals intact?	☒ Yes ☐ No
Sample Custody Seals Present? No	☐ 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: N | Correction Factor (°C): +0.0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.1 | Corrected Temp (°C): 1.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used		
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

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By: M

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 # 3 of 4
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: N | Correction Factor (°C): +0.3

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.5 | Corrected Temp (°C): 3.5

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used		
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

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By: [signature]

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 # 4 of 4
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes* Cooler oustody 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: N | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.6 | Corrected Temp (°C): 0.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used		
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

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-228428-1
SDG Number:

Login Number: 228428
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (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 #25222070.0
April 2022

Sample	Sample Date/Time	Groundwater Elevation (ft AMSL)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity (NTU)
MW-6	4/6/2022 910	667.14	8.9	7.32	8.92	599	197.7	0.00
MW-20	4/5/2022 1755	650.86	7.2	7.71	0.30	1531	202.9	0.00
MW-301	4/5/2022 1045	630.67	8.7	8.30	0.15	554	200.0	0.00
MW-302	4/5/2022 1555	623.29	6.3	6.92	0.13	1151	202.8	3.21
MW-302A	4/5/2022 1700	623.71	10.2	7.34	6.49	630.0	199.7	0.00
MW-303	4/5/2022 1510	641.69	4.6	8.07	1.17	452.4	202.1	0.00
MW-304	4/5/2022 1020	621.72	8.2	7.25	7.20	571.8	201.4	0.00
MW-304A	4/5/2022 1230	619.00	9.4	7.97	0.19	520.9	198.1	42.65
MW-305	4/4/2022 1545	627.17	4.4	6.94	4.06	545.0	198.9	4.57
MW-306	4/4/2022 1705	620.42	12.0	6.86	0.26	1839	196.3	0.00
MW-306A	4/4/2022 1730	620.61	13.0	7.19	1.13	669	192.7	0.00
MW-307	4/5/2022 1315	639.74	6.9	8.34	0.08	460	198.2	0.00
MW-307A	4/5/2022 1410	626.72	10.8	7.48	0.09	563	199.8	0.00

Abbreviations:
AMSL = above mean sea level
µmhos/cm = microSiemens per centimeter
mg/L = milligrams per liter
mV = millivolts
ORP = Oxidation Reduction (REDOX)
NTU = Nephelometric Turbidity Units

Laboratory Notes/Qualifiers:
none

Created by: NDK Date: 4/20/2021
Last revision by: RM Date: 4/20/2022
Checked by: JAO Date: 4/20/2022

C:\Users\fredricks\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\D84274O8\[April 2022_Lansing_CCR_Field.xlsx]Data

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ANALYTICAL REPORT

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-228428-2
Client Project/Site: Lansing Gen Station 25222070

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett

Sandra Fredrick

Authorized for release by:
5/6/2022 12:48:49 PM

Sandie Fredrick, Project Manager II
(920)261-1660
Sandra.Fredrick@et.eurofinsus.com

Table of Contents

Case Narrative

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Job ID: 310-228428-2

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-228428-2

Comments
No additional comments.

Receipt
The samples were received on 4/6/2022 1:52 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.6º C, 1.1º C, 1.8º C and 3.5º C.

RAD
Method 903.0: Radium 226 batch 559306
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

MW-301 (310-228428-1), MW-302 (310-228428-2), MW-303 (310-228428-3), MW-304 (310-228428-4), MW-305 (310-228428-5), MW-306 (310-228428-6), MW-302A (310-228428-7), MW-304A (310-228428-8), MW-306A (310-228428-9), MW-307 (310-228428-10), MW-307A (310-228428-11), MW-20 (310-228428-12), MW-6 (310-228428-13), Field Blank (310-228428-14), (LCS 160-559306/1-A), (LCSD 160-559306/2-A) and (MB 160-559306/17-A)

Method 904.0: Radium 228 batch 559317
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

MW-301 (310-228428-1), MW-302 (310-228428-2), MW-303 (310-228428-3), MW-304 (310-228428-4), MW-305 (310-228428-5), MW-306 (310-228428-6), MW-302A (310-228428-7), MW-304A (310-228428-8), MW-306A (310-228428-9), MW-307 (310-228428-10), MW-307A (310-228428-11), MW-20 (310-228428-12), MW-6 (310-228428-13), Field Blank (310-228428-14), (LCS 160-559317/1-A), (LCSD 160-559317/2-A) and (MB 160-559317/17-A)

Methods PrecSep-21, PrecSep_0: Radium-228 Prep Batch 160-559317:
The following samples were prepared at a reduced aliquot due to Matrix: MW-301 (310-228428-1), MW-302 (310-228428-2), MW-303 (310-228428-3), MW-304 (310-228428-4), MW-305 (310-228428-5), MW-306 (310-228428-6), MW-302A (310-228428-7), MW-304A (310-228428-8), MW-306A (310-228428-9), MW-307 (310-228428-10), MW-307A (310-228428-11), MW-20 (310-228428-12), MW-6 (310-228428-13) and Field Blank (310-228428-14). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

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

Sample Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-228428-1	MW-301	Water	04/05/22 10:45	04/06/22 13:52
310-228428-2	MW-302	Water	04/05/22 15:55	04/06/22 13:52
310-228428-3	MW-303	Water	04/05/22 15:10	04/06/22 13:52
310-228428-4	MW-304	Water	04/05/22 10:20	04/06/22 13:52
310-228428-5	MW-305	Water	04/04/22 15:45	04/06/22 13:52
310-228428-6	MW-306	Water	04/04/22 17:05	04/06/22 13:52
310-228428-7	MW-302A	Water	04/05/22 17:00	04/06/22 13:52
310-228428-8	MW-304A	Water	04/05/22 12:30	04/06/22 13:52
310-228428-9	MW-306A	Water	04/04/22 17:30	04/06/22 13:52
310-228428-10	MW-307	Water	04/05/22 13:15	04/06/22 13:52
310-228428-11	MW-307A	Water	04/05/22 14:10	04/06/22 13:52
310-228428-12	MW-20	Water	04/05/22 17:55	04/06/22 13:52
310-228428-13	MW-6	Water	04/06/22 09:10	04/06/22 13:52
310-228428-14	Field Blank	Water	04/05/22 17:45	04/06/22 13:52

Detection Summary

Client: SCS Engineers
Job ID: 310-228428-2
Project/Site: Lansing Gen Station 25222070

Client Sample ID: MW-301 — Lab Sample ID: 310-228428-1

No Detections.

Client Sample ID: MW-302 — Lab Sample ID: 310-228428-2

No Detections.

Client Sample ID: MW-303 — Lab Sample ID: 310-228428-3

No Detections.

Client Sample ID: MW-304 — Lab Sample ID: 310-228428-4

No Detections.

Client Sample ID: MW-305 — Lab Sample ID: 310-228428-5

No Detections.

Client Sample ID: MW-306 — Lab Sample ID: 310-228428-6

No Detections.

Client Sample ID: MW-302A — Lab Sample ID: 310-228428-7

No Detections.

Client Sample ID: MW-304A — Lab Sample ID: 310-228428-8

No Detections.

Client Sample ID: MW-306A — Lab Sample ID: 310-228428-9

No Detections.

Client Sample ID: MW-307 — Lab Sample ID: 310-228428-10

No Detections.

Client Sample ID: MW-307A — Lab Sample ID: 310-228428-11

No Detections.

Client Sample ID: MW-20 — Lab Sample ID: 310-228428-12

No Detections.

Client Sample ID: MW-6 — Lab Sample ID: 310-228428-13

No Detections.

Client Sample ID: Field Blank — Lab Sample ID: 310-228428-14

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-301

Date Collected: 04/05/22 10:45
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-1

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.103	U	0.142	0.142	1.00	0.239	pCi/L	04/08/22 11:48	05/04/22 15:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.6*		*40 - 110*	*04/08/22 11:48*	*05/04/22 15:47*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	-0.168	U	0.276	0.276	1.00	0.529	pCi/L	04/08/22 13:31	05/02/22 12:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*89.6*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:25*	*1*
Y Carrier	*83.7*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:25*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.103	U	0.310	0.310	5.00	0.529	pCi/L		05/06/22 12:25	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-302

Date Collected: 04/05/22 15:55
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-2

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.604		0.257	0.262	1.00	0.302	pCi/L	04/08/22 11:48	05/04/22 15:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.8*		*40 - 110*	*04/08/22 11:48*	*05/04/22 15:48*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.744		0.325	0.332	1.00	0.446	pCi/L	04/08/22 13:31	05/02/22 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*87.8*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*
Y Carrier	*84.1*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.35		0.414	0.423	5.00	0.446	pCi/L		05/06/22 12:25	1

Client Sample ID: MW-303
Date Collected: 04/05/22 15:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-3
Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	**0.296**		0.195	0.197	1.00	0.270	pCi/L	04/08/22 11:48	05/04/22 16:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.8*		*40 - 110*	*04/08/22 11:48*	*05/04/22 16:20*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.236	U	0.271	0.272	1.00	0.445	pCi/L	04/08/22 13:31	05/02/22 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*94.8*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*
Y Carrier	*86.0*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**0.533**		0.334	0.336	5.00	0.445	pCi/L		05/06/22 12:25	1

Client Sample ID: MW-304
Lab Sample ID: 310-228428-4

Date Collected: 04/05/22 10:20
Matrix: Water

Date Received: 04/06/22 13:52

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.143	U	0.194	0.195	1.00	0.327	pCi/L	04/08/22 11:48	05/04/22 16:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.5*		*40 - 110*	*04/08/22 11:48*	*05/04/22 16:20*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	-0.0479	U	0.279	0.279	1.00	0.512	pCi/L	04/08/22 13:31	05/02/22 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*90.5*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*
Y Carrier	*83.7*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.143	U	0.340	0.340	5.00	0.512	pCi/L		05/06/22 12:25	1

Client Sample ID: MW-305
Lab Sample ID: 310-228428-5

Date Collected: 04/04/22 15:45
Matrix: Water

Date Received: 04/06/22 13:52

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.145	U	0.158	0.158	1.00	0.254	pCi/L	04/08/22 11:48	05/04/22 16:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.5*		*40 - 110*	*04/08/22 11:48*	*05/04/22 16:20*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.104	U	0.270	0.271	1.00	0.469	pCi/L	04/08/22 13:31	05/02/22 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*95.5*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*
Y Carrier	*84.5*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.249	U	0.313	0.314	5.00	0.469	pCi/L		05/06/22 12:25	1

Client Sample ID: MW-306

Date Collected: 04/04/22 17:05
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-6

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	**0.464**		0.255	0.258	1.00	0.352	pCi/L	04/08/22 11:48	05/04/22 16:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*04/08/22 11:48*	*05/04/22 16:21*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.292	U	0.324	0.325	1.00	0.532	pCi/L	04/08/22 13:31	05/02/22 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*95.8*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*
Y Carrier	*83.4*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**0.757**		0.412	0.415	5.00	0.532	pCi/L		05/06/22 12:25	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-302A

Date Collected: 04/05/22 17:00
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-7

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.196	U	0.189	0.190	1.00	0.299	pCi/L	04/08/22 11:48	05/04/22 16:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*04/08/22 11:48*	*05/04/22 16:22*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.206	U	0.309	0.309	1.00	0.519	pCi/L	04/08/22 13:31	05/02/22 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*93.8*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*
Y Carrier	*83.7*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:26*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.402	U	0.362	0.363	5.00	0.519	pCi/L		05/06/22 12:25	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-304A

Date Collected: 04/05/22 12:30
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-8

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	-0.00262	U	0.191	0.191	1.00	0.393	pCi/L	04/08/22 11:48	05/04/22 16:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.8*		*40 - 110*	*04/08/22 11:48*	*05/04/22 16:22*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.510	U	0.458	0.460	1.00	0.733	pCi/L	04/08/22 13:31	05/02/22 12:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*90.8*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*
Y Carrier	*85.6*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.510	U	0.496	0.498	5.00	0.733	pCi/L		05/06/22 12:25	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-306A

Date Collected: 04/04/22 17:30
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-9

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.00526	U	0.152	0.152	1.00	0.300	pCi/L	04/08/22 11:48	05/04/22 16:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.8*		*40 - 110*	*04/08/22 11:48*	*05/04/22 16:22*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.192	U	0.291	0.292	1.00	0.491	pCi/L	04/08/22 13:31	05/02/22 12:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*87.8*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*
Y Carrier	*85.6*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.198	U	0.328	0.329	5.00	0.491	pCi/L		05/06/22 12:25	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-307

Date Collected: 04/05/22 13:15
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-10

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0893	U	0.176	0.176	1.00	0.313	pCi/L	04/08/22 11:48	05/04/22 16:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.1*		*40 - 110*	*04/08/22 11:48*	*05/04/22 16:22*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.0932	U	0.331	0.331	1.00	0.582	pCi/L	04/08/22 13:31	05/02/22 12:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*78.1*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*
Y Carrier	*82.2*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.183	U	0.375	0.375	5.00	0.582	pCi/L		05/06/22 12:25	1

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-307A

Date Collected: 04/05/22 14:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-11

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0954	U	0.121	0.121	1.00	0.200	pCi/L	04/08/22 11:48	05/04/22 16:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.3*		*40 - 110*	*04/08/22 11:48*	*05/04/22 16:22*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	-0.0760	U	0.278	0.278	1.00	0.517	pCi/L	04/08/22 13:31	05/02/22 12:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*91.3*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*
Y Carrier	*82.6*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0954	U	0.303	0.303	5.00	0.517	pCi/L		05/06/22 12:25	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-20

Date Collected: 04/05/22 17:55
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-12

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	**0.328**		0.208	0.210	1.00	0.288	pCi/L	04/08/22 11:48	05/04/22 17:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.8*		*40 - 110*	*04/08/22 11:48*	*05/04/22 17:45*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.276	U	0.334	0.335	1.00	0.551	pCi/L	04/08/22 13:31	05/02/22 12:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*86.8*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*
Y Carrier	*80.7*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**0.604**		0.393	0.395	5.00	0.551	pCi/L		05/06/22 12:25	1

Client Sample Results

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-6

Date Collected: 04/06/22 09:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-13

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0404	U	0.106	0.106	1.00	0.201	pCi/L	04/08/22 11:48	05/04/22 17:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*04/08/22 11:48*	*05/04/22 17:46*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.0419	U	0.272	0.272	1.00	0.484	pCi/L	04/08/22 13:31	05/02/22 12:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*94.0*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*
Y Carrier	*82.2*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:27*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0823	U	0.292	0.292	5.00	0.484	pCi/L		05/06/22 12:25	1

Client Sample ID: Field Blank

Date Collected: 04/05/22 17:45
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-14

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.00184	U	0.134	0.134	1.00	0.275	pCi/L	04/08/22 11:48	05/04/22 17:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.3*		*40 - 110*	*04/08/22 11:48*	*05/04/22 17:46*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	0.225	U	0.383	0.383	1.00	0.646	pCi/L	04/08/22 13:31	05/02/22 12:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*82.3*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:22*	*1*
Y Carrier	*84.5*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:22*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.227	U	0.406	0.406	5.00	0.646	pCi/L		05/06/22 12:25	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

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

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-559306/17-A
Matrix: Water
Analysis Batch: 563515

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 559306

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.01769	U	0.0790	0.0790	1.00	0.158	pCi/L	04/08/22 11:48	05/04/22 17:46	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.0*		*40 - 110*	*04/08/22 11:48*	*05/04/22 17:46*	*1*

Lab Sample ID: LCS 160-559306/1-A
Matrix: Water
Analysis Batch: 563515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559306

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium 226			11.3	9.288		1.08	1.00	0.186	pCi/L	82	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*94.0*		*40 - 110*

Lab Sample ID: LCSD 160-559306/2-A
Matrix: Water
Analysis Batch: 563515

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 559306

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium 226			11.3	10.33		1.19	1.00	0.162	pCi/L	91	75 - 125	0.46	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*92.0*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-559317/17-A
Matrix: Water
Analysis Batch: 563272

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 559317

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 228	-0.02834	U	0.209	0.209	1.00	0.381	pCi/L	04/08/22 13:31	05/02/22 12:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba	*93.0*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:23*	*1*
Y Carrier	*84.5*		*40 - 110*	*04/08/22 13:31*	*05/02/22 12:23*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-559317/1-A
Matrix: Water
Analysis Batch: 563280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559317

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium 228			8.66	8.727		1.03	1.00	0.363	pCi/L	101	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba	*94.0*		*40 - 110*
Y Carrier	*84.5*		*40 - 110*

Lab Sample ID: LCSD 160-559317/2-A
Matrix: Water
Analysis Batch: 563280

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 559317

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium 228			8.66	8.603		1.02	1.00	0.345	pCi/L	99	75 - 125	0.06	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba	*92.0*		*40 - 110*
Y Carrier	*84.9*		*40 - 110*

Rad

Prep Batch: 559306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	PrecSep-21	
310-228428-2	MW-302	Total/NA	Water	PrecSep-21	
310-228428-3	MW-303	Total/NA	Water	PrecSep-21	
310-228428-4	MW-304	Total/NA	Water	PrecSep-21	
310-228428-5	MW-305	Total/NA	Water	PrecSep-21	
310-228428-6	MW-306	Total/NA	Water	PrecSep-21	
310-228428-7	MW-302A	Total/NA	Water	PrecSep-21	
310-228428-8	MW-304A	Total/NA	Water	PrecSep-21	
310-228428-9	MW-306A	Total/NA	Water	PrecSep-21	
310-228428-10	MW-307	Total/NA	Water	PrecSep-21	
310-228428-11	MW-307A	Total/NA	Water	PrecSep-21	
310-228428-12	MW-20	Total/NA	Water	PrecSep-21	
310-228428-13	MW-6	Total/NA	Water	PrecSep-21	
310-228428-14	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-559306/17-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-559306/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-559306/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 559317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-228428-1	MW-301	Total/NA	Water	PrecSep_0	
310-228428-2	MW-302	Total/NA	Water	PrecSep_0	
310-228428-3	MW-303	Total/NA	Water	PrecSep_0	
310-228428-4	MW-304	Total/NA	Water	PrecSep_0	
310-228428-5	MW-305	Total/NA	Water	PrecSep_0	
310-228428-6	MW-306	Total/NA	Water	PrecSep_0	
310-228428-7	MW-302A	Total/NA	Water	PrecSep_0	
310-228428-8	MW-304A	Total/NA	Water	PrecSep_0	
310-228428-9	MW-306A	Total/NA	Water	PrecSep_0	
310-228428-10	MW-307	Total/NA	Water	PrecSep_0	
310-228428-11	MW-307A	Total/NA	Water	PrecSep_0	
310-228428-12	MW-20	Total/NA	Water	PrecSep_0	
310-228428-13	MW-6	Total/NA	Water	PrecSep_0	
310-228428-14	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-559317/17-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-559317/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-559317/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: SCS Engineers
Job ID: 310-228428-2
Project/Site: Lansing Gen Station 25222070

Client Sample ID: MW-301
Lab Sample ID: 310-228428-1
Date Collected: 04/05/22 10:45
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563515	05/04/22 15:47	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:25	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: MW-302
Lab Sample ID: 310-228428-2
Date Collected: 04/05/22 15:55
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563514	05/04/22 15:48	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:26	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: MW-303
Lab Sample ID: 310-228428-3
Date Collected: 04/05/22 15:10
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563516	05/04/22 16:20	JCB	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:26	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: MW-304
Lab Sample ID: 310-228428-4
Date Collected: 04/05/22 10:20
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563516	05/04/22 16:20	JCB	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:26	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Lab Chronicle

Client: SCS Engineers
Job ID: 310-228428-2
Project/Site: Lansing Gen Station 25222070

Client Sample ID: MW-305
Lab Sample ID: 310-228428-5
Date Collected: 04/04/22 15:45
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563516	05/04/22 16:20	JCB	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:26	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: MW-306
Lab Sample ID: 310-228428-6
Date Collected: 04/04/22 17:05
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563516	05/04/22 16:21	JCB	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:26	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: MW-302A
Lab Sample ID: 310-228428-7
Date Collected: 04/05/22 17:00
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563514	05/04/22 16:22	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:26	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: MW-304A
Lab Sample ID: 310-228428-8
Date Collected: 04/05/22 12:30
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563514	05/04/22 16:22	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:27	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Lab Chronicle

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Client Sample ID: MW-306A
Date Collected: 04/04/22 17:30
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563514	05/04/22 16:22	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:27	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: MW-307
Date Collected: 04/05/22 13:15
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563514	05/04/22 16:22	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:27	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: MW-307A
Date Collected: 04/05/22 14:10
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563515	05/04/22 16:22	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:27	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: MW-20
Date Collected: 04/05/22 17:55
Date Received: 04/06/22 13:52

Lab Sample ID: 310-228428-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563515	05/04/22 17:45	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:27	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Lab Chronicle

Client: SCS Engineers
Job ID: 310-228428-2
Project/Site: Lansing Gen Station 25222070

Client Sample ID: MW-6
Lab Sample ID: 310-228428-13
Date Collected: 04/06/22 09:10
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563515	05/04/22 17:46	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563280	05/02/22 12:27	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Client Sample ID: Field Blank
Lab Sample ID: 310-228428-14
Date Collected: 04/05/22 17:45
Matrix: Water
Date Received: 04/06/22 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			559306	04/08/22 11:48	HRT	TAL SL
Total/NA	Analysis	903.0		1	563515	05/04/22 17:46	FLC	TAL SL
Total/NA	Prep	PrecSep_0			559317	04/08/22 13:31	HRT	TAL SL
Total/NA	Analysis	904.0		1	563272	05/02/22 12:22	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	564093	05/06/22 12:25	EMH	TAL SL

Laboratory References:

TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-228428-2
Project/Site: Lansing Gen Station 25222070

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	07-01-22
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Method Summary

Client: SCS Engineers
Project/Site: Lansing Gen Station 25222070

Job ID: 310-228428-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Paul Grover + Ethan Schaffer	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-69725-16398.1
Client Contact: Mr Tom Karwoski	Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin:	Page: Page 1 of 2
Company: SCS Engineers	PWSID:			Job #:
Address: 2830 Dairy Drive	Due Date Requested:			
City: Madison	TAT Requested (days):			
State, Zip: WI 53718-6751	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25221070			
Email: tkarwoski@scsengineers.com	WO #:			
Project Name: Lansing Gen Station, 25221070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Z other (specify)

Other

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Metals (14)	2540C_Calcd, 9056A_ORGFM_28D, SM4500_H+	Radium 226	Radium 228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	D		
MW-301	4-5-22	10:45	G	Water	N		X	X	X	X		
MW-302	4-5-22	15:55		Water	N							
MW-303	4-5-22	15:10		Water	N							
MW-304	4-5-22	10:20		Water								
MW-305	4-4-22	15:45		Water								
MW-306	4-4-22	17:05		Water								
MW-302A	4-5-22	17 00		Water								
MW-304A	4-5-22	12.30		Water								
MW-306A	4-4-22	17:30		Water								
MW-307	4-5-22	13.15		Water								
MW-307A	4-5-22	14 10	V	Water	V		V	V	V	V		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I II III IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Paul A Grover	4-6-22 13:52	SCS		4/6/22 1352	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

5/6/2022

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Paul Groos & Ethan Schaefer	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-69725-16398.2
Client Contact: Mr Tom Karwoski	Phone:	E-Mai sandra.fredrick@eurofinset.com	State of Origin:	Page: Page 2 of 2
Company: SCS Engineers	PWSID:			Job #:
Address: 2830 Dairy Drive	Due Date Requested:			
City: Madison	TAT Requested (days):			
State, Zip: WI 53718-6751	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 25221070			
Email: tkarwoski@scsengineers.com	WO #:			
Project Name: Lansing Gen Station, 25221070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Z other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A Metals (14)	2540C_Calcd, 9056A_ORGFM_28D, SM4500_H+	903.0 Radium 226	904.0 Radium 228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	D		
MW-20	4-5-22	17:55	G	Water	N		X	X	X	X		
MW-6	4-6-22	9:10	G	Water	N		X	X	X	X		
Field Blank	4-4-22	17.20	G	Water	N		X	X	X	X		
				Water								

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I II III, IV Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Paul A. Groos	4-6-22 13:52	SCS		4/6/22 1352	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

eurofins | Environment Testing America

310-228428 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By: N

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 # 1 of 4
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: N | Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.8 | Corrected Temp (°C): 1.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used		
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 | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By:

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 # 3 of 4
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: N | Correction Factor (°C): +0.0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.1 | Corrected Temp (°C): 1.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used		
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 | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By: M

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 # 3 of 4
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: N | Correction Factor (°C): +0.0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.5 | Corrected Temp (°C): 3.5

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used		
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 | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE 4/6/22 | TIME 1352 | Received By: [signature]

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 # 4 of 4
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes* Cooler oustody 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: N | Correction Factor (°C): +0.0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.6 | Corrected Temp (°C): 0.6

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used		
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

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-48379.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Iowa		Job #: 310-228428-2
Address: 13715 Rider Trail North,	Due Date Requested: 5/5/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Lansing Gen Station 25222070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21 Radium-226 (GFPC)	904.0/PrecSep_0 Radium-228 (GFPC)	Ra226_228GFPC_P/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-301 (310-228428-1)	4/5/22	10:45 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-302 (310-228428-2)	4/5/22	15:55 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-303 (310-228428-3)	4/5/22	15:10 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-304 (310-228428-4)	4/5/22	10:20 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-305 (310-228428-5)	4/4/22	15:45 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-306 (310-228428-6)	4/4/22	17:05 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-302A (310-228428-7)	4/5/22	17:00 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-304A (310-228428-8)	4/5/22	12:30 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-306A (310-228428-9)	4/4/22	17:30 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	4/6/22 16:40		FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: APR 07 2022 0900	Company ETAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 310-48379.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin: Iowa	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Iowa		Job #: 310-228428-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/5/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Lansing Gen Station 25222070	Project #: 31011020			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21 Radium-226 (GFPC)	904.0/PrecSep_0 Radium-228 (GFPC)	Ra226_228GFPC_P/ Combined Radium-226 and Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X				X	
MW-307 (310-228428-10)	4/5/22	13:15 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-307A (310-228428-11)	4/5/22	14:10 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-20 (310-228428-12)	4/5/22	17:55 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-6 (310-228428-13)	4/6/22	09:10 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
Field Blank (310-228428-14)	4/5/22	17:45 Central		Water			X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	4/6/22 1640		FED EX		
2	FED EX			[signature] Sierra Worthington	APR 07 2022 0900	ETAS
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-228428-2
SDG Number:

Login Number: 228428
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-228428-2
SDG Number:

Login Number: 228428
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 04/07/22 12:06 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: SCS Engineers
Job ID: 310-228428-2
Project/Site: Lansing Gen Station 25222070

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
310-228428-1	MW-301	89.6
310-228428-2	MW-302	87.8
310-228428-3	MW-303	94.8
310-228428-4	MW-304	90.5
310-228428-5	MW-305	95.5
310-228428-6	MW-306	95.8
310-228428-7	MW-302A	93.8
310-228428-8	MW-304A	90.8
310-228428-9	MW-306A	87.8
310-228428-10	MW-307	78.1
310-228428-11	MW-307A	91.3
310-228428-12	MW-20	86.8
310-228428-13	MW-6	94.0
310-228428-14	Field Blank	82.3
LCS 160-559306/1-A	Lab Control Sample	94.0
LCSD 160-559306/2-A	Lab Control Sample Dup	92.0
MB 160-559306/17-A	Method Blank	93.0

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
310-228428-1	MW-301	89.6	83.7
310-228428-2	MW-302	87.8	84.1
310-228428-3	MW-303	94.8	86.0
310-228428-4	MW-304	90.5	83.7
310-228428-5	MW-305	95.5	84.5
310-228428-6	MW-306	95.8	83.4
310-228428-7	MW-302A	93.8	83.7
310-228428-8	MW-304A	90.8	85.6
310-228428-9	MW-306A	87.8	85.6
310-228428-10	MW-307	78.1	82.2
310-228428-11	MW-307A	91.3	82.6
310-228428-12	MW-20	86.8	80.7
310-228428-13	MW-6	94.0	82.2
310-228428-14	Field Blank	82.3	84.5
LCS 160-559317/1-A	Lab Control Sample	94.0	84.5
LCSD 160-559317/2-A	Lab Control Sample Dup	92.0	84.9
MB 160-559317/17-A	Method Blank	93.0	84.5

Tracer/Carrier Legend

Ba = Ba
Y = Y Carrier

Appendix D

Historical Monitoring Results

Single Location

Name: IPL - Lansing

Location ID: MW-6
Number of Sampling Dates: 21

Parameter Name	Units	12/10/2015	4/29/2016	7/20/2016	10/27/2016	1/18/2017	4/19/2017	6/19/2017	8/15/2017	10/16/2017	4/16/2018	4/26/2018	8/7/2018	10/8/2018	4/15/2019	10/2/2019	5/20/2020	8/19/2020	10/20/2020	4/7/2021	10/26/2021	4/6/2022
Boron	ug/L	25.7	<50	<50	<50	<50	31.9	42.1	40	41.2	--	29.8	42.9	40.2	<110	<110	<73	--	<80	<58	64	<58
Calcium	mg/L	64	72.6	68.9	68.6	68.6	67.8	64.6	68.2	66.9	--	72.7	66.5	69.6	67	70	72	--	69	71	72	71
Chloride	mg/L	7.5	7.6	8.1	6.8	6.5	6.3	6.2	6.5	6.5	--	6.5	7.3	6.6	6.7	6.9	7.7	6.8	5.6	7	6.8	5.3
Fluoride	mg/L	0.094	0.15	0.082	0.12	0.092	<0.1	0.1	0.12	0.14	--	0.084	0.12	<0.19	0.63	<0.23	<0.23	--	<0.23	0.34	<0.28	<0.22
Field pH	Std. Units	7.44	7.64	7.25	7.56	7.62	7.48	7.4	7.48	7.03	--	7.34	7.18	7.06	7.59	7.46	7.34	7.98	7.42	7.39	7.7	7.32
Sulfate	mg/L	23	22.2	22.5	25.2	24.8	25.5	27.4	26.9	25.8	--	26.4	24.8	25.5	26	24	27	25	25	23	25	25
Total Dissolved Solids	mg/L	382	328	352	337	324	350	337	333	318	--	343	351	319	340	280	580	--	300	290	240	280
Antimony	ug/L	0.18	<0.058	<0.058	<0.058	<0.058	<0.026	0.027	0.037	--	--	<0.026	<0.15	<0.078	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69
Arsenic	ug/L	<4.5	0.28	0.26	0.19	0.23	0.28	0.18	0.28	--	--	0.23	0.26	0.24	<0.75	<0.75	<0.88	--	<0.88	<0.75	<0.75	<0.75
Barium	ug/L	45.5	45.6	43.8	44.6	46.5	45.4	41.9	44	--	--	44.1	43.1	43	43	46	46	--	45	49	47	48
Beryllium	ug/L	<0.17	<0.08	<0.08	<0.08	<0.08	<0.012	<0.012	<0.012	--	--	<0.012	<0.12	<0.089	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.56	<0.029	<0.029	<0.029	<0.029	<0.018	<0.018	<0.018	--	--	<0.018	--	<0.033	<0.077	--	<0.039	--	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	<0.96	0.82	0.81	0.81	1.1	0.76	0.68	0.71	--	--	0.66	0.97	0.73	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	<0.1	<0.5	<0.5	<0.5	<0.5	0.034	0.021	<0.014	--	--	<0.014	<0.15	<0.062	<0.091	<0.091	<0.091	--	<0.091	<0.091	<0.19	<0.19
Lead	ug/L	<1.9	<0.19	<0.19	<0.19	<0.19	0.13	<0.033	0.065	--	--	<0.033	<0.12	<0.13	<0.27	<0.27	<0.27	--	<0.11	<0.21	<0.21	<0.24
Lithium	ug/L	<2.5	<4.9	<4.9	<4.9	<4.9	<2.9	<2.9	3	--	--	<4.6	--	<4.6	<2.7	<2.7	<2.3	--	<2.5	<2.5	<2.5	<2.5
Mercury	ug/L	<0.012	<0.039	<0.039	<0.039	<0.039	<0.046	<0.046	<0.046	--	--	<0.09	<0.09	<0.09	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	<1.5	0.25	0.24	0.31	0.21	0.25	0.26	0.31	--	--	0.26	0.28	<0.57	<1.1	<1.1	<1.1	<1.1	<1.1	<1.3	<1.3	<1.2
Selenium	ug/L	<5.8	0.57	0.46	0.54	0.36	0.5	0.36	0.52	--	--	0.47	0.5	0.46	<1	--	<1	--	<1	<0.96	<0.96	<0.96
Thallium	ug/L	0.18	<0.5	<0.5	<0.5	<0.5	0.11	<0.036	0.29	--	--	<0.036	--	<0.099	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	1.51	0.458	0.724	0.6	0.397	0.0972	1.06	0.826	--	1.35	--	0.974	1.37	--	0.495	--	--	0.644	0.359	0.779	0.0823
Radium-226	pCi/L	0.599	0.232	0.0668	0.126	0	-0.07	0.457	0.633	--	0	--	0.547	0.705	--	0.237	--	--	0.0266	0.109	0.232	0.0404
Radium-228	pCi/L	0.913	0.226	0.657	0.474	0.397	0.0972	0.606	0.193	--	1.35	--	0.427	0.668	--	0.259	--	--	0.618	0.249	0.547	0.0419
pH at 25 Degrees C	Std. Units	8	7.7	7.4	7.7	8.1	7.8	7.2	7.5	7.5	--	7.7	7.5	7.4	7.5	7.5	7.5	--	7.4	7.5	7.5	7.6
Field Oxidation Potential	mV	166.8	243.7	45.8	122	163	321	251	142	282	--	34.6	233	119	274	88.9	119.6	113.9	68.5	186.2	136.2	197.7
Field Specific Conductance	umhos/cm	606.4	596.2	582.4	590	589	589	580	588	591	--	569.1	609	587	618	590	597	597	575.5	599	601	599
Field Temperature	deg C	9.6	9.7	9.9	10	8	10.3	11.2	11.4	10.2	--	11.1	10.5	11.5	10	10	10	9.8	9.7	10	9.9	8.9
Groundwater Elevation	feet	662.28	662.08	663.21	670.82	666.28	669.82	670.65	670.61	669.58	--	667.96	668.13	664.71	672.78	675.54	674.47	674.64	673.37	671.08	668.14	667.14
Oxygen, Dissolved	mg/L	9.44	7.7	4.98	8.6	9.8	7.1	3.7	5.8	8.8	--	3.46	7.4	9.1	8.7	10.29	9.2	9.45	8.23	9.06	9.34	8.92
Turbidity	NTU	--	0.41	0.01	2.1	0	1.71	1.35	0	0	--	0.81	1.77	0.01	0.75	0.7	0.01	0	0	0	0	0
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	290	300	310	380	330
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<50	<50	49	<36	<36
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.6	25	5.1	<4.4	14
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	74000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.05	<50	<36	<36	<36
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	37000	36000	35000	35000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.004	<4	<4.4	<4.4	<3.6
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1100	1100	1100	1100
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4500	4600	4500	4500
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	290	300	310	380	330
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<3.8	<4.4	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8	--	--	<0.75	--
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.7	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-301
Number of Sampling Dates: 21

Parameter Name	Units	12/10/2015	4/29/2016	7/20/2016	10/26/2016	1/17/2017	4/19/2017	6/19/2017	8/15/2017	10/16/2017	4/16/2018	6/4/2018	8/7/2018	10/8/2018	4/15/2019	10/2/2019	5/19/2020	8/18/2020	10/19/2020	4/8/2021	10/26/2021	4/5/2022
Boron	ug/L	739	436	417	554	471	405	333	365	436	198	--	279	357	250	360	150	--	260	160	260	220
Calcium	mg/L	41	39.1	45.1	55.5	56.4	61.7	59.5	66.4	65.9	64.5	--	65.1	72.5	73	68	56	--	57	58	68	69
Chloride	mg/L	25.5	18.5	18.2	15.8	16	18.3	18	16.2	17.3	20.2	--	17.7	15.9	17	14	17	15	15	18	17	22
Fluoride	mg/L	0.3	0.32	0.25	0.26	0.21	0.19	0.23	0.26	0.24	0.24	--	0.23	0.27	0.9	0.23	0.56	--	<0.23	0.38	<0.28	<0.22
Field pH	Std. Units	7.96	8.23	7.86	8.1	8.37	8.5	8.25	8.19	7.66	8.39	8.1	8.08	8.16	8.47	8.11	7.85	8.33	8.06	8.04	8.11	8.3
Sulfate	mg/L	62.2	38.8	37.5	45.7	55.6	48.7	44.7	49.4	52.7	49.3	--	53.2	64.4	51	56	34	44	48	27	49	86
Total Dissolved Solids	mg/L	280	176	218	246	271	289	278	285	289	--	300	326	320	350	310	480	--	280	240	210	260
Antimony	ug/L	0.078	0.086	<0.058	<0.058	0.088	<0.026	0.08	0.079	--	0.071	--	0.16	0.085	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69
Arsenic	ug/L	<4.5	2.3	2.8	3.5	3.8	3.1	3	3.8	--	3.9	--	4.4	5.4	5.4	5.6	3.8	--	6	5	7.1	4.9
Barium	ug/L	146	139	182	220	227	182	175	196	--	163	--	156	155	160	180	140	--	150	140	160	130
Beryllium	ug/L	<0.17	<0.08	<0.08	<0.08	<0.08	<0.012	<0.012	<0.012	--	<0.012	--	<0.12	<0.089	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.56	<0.029	<0.029	<0.029	<0.029	0.021	<0.018	<0.018	--	<0.018	--	--	<0.033	<0.077	--	<0.039	--	<0.049	0.06	<0.051	<0.055
Chromium	ug/L	<0.96	<0.34	<0.34	0.35	0.49	0.97	0.21	0.23	--	1.1	--	<0.19	0.09	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.13	<0.5	<0.5	<0.5	<0.5	0.098	0.074	0.07	--	0.086	--	0.16	0.11	0.11	0.11	0.11	--	0.11	0.11	0.23	<0.19
Lead	ug/L	<1.9	<0.19	0.23	<0.19	0.23	0.36	0.041	<0.033	--	0.037	--	<0.12	<0.13	<0.27	<0.27	<0.27	--	<0.11	<0.21	0.37	<0.24
Lithium	ug/L	5	5.3	5	6.4	<4.9	<2.9	4.2	7.3	--	<4.6	--	--	9.1	8.7	8	7	--	7.9	7.1	6.7	7.3
Mercury	ug/L	<0.012	<0.039	<0.039	<0.039	<0.039	<0.046	<0.046	<0.046	--	0.31	--	<0.09	<0.09	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	2.5	5.5	5	8.1	9.3	6.9	5.5	6.8	--	4.4	--	5.6	10.3	11	10	8.1	5.8	7.5	6.8	6.2	7.6
Selenium	ug/L	<5.8	<0.18	<0.18	<0.18	<0.18	0.12	0.1	0.13	--	<0.086	--	0.22	0.18	<1	--	<1	--	<1	<0.96	<0.96	<0.96
Thallium	ug/L	0.064	<0.5	<0.5	<0.5	<0.5	0.14	0.05	0.31	--	<0.036	--	--	<0.099	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.436	0.525	0.126	1.03	0.647	0.752	0.453	1.86	--	0.689	--	1.66	0.556	--	0.488	--	--	0.889	0.244	0.814	0.103
Radium-226	pCi/L	0.349	0.111	0.126	0.236	0.334	0.374	0.0591	1.03	--	0	--	0.692	0.115	--	0.372	--	--	0.339	0.0913	0.259	0.103
Radium-228	pCi/L	0.087	0.414	-0.0306	0.791	0.313	0.378	0.394	0.826	--	0.689	--	0.972	0.441	--	0.116	--	--	0.55	0.153	0.555	-0.168
pH at 25 Degrees C	Std. Units	7.8	8	7.8	7.8	7.8	7.8	7.7	8.1	7.9	8	--	8.1	8	7.9	8.1	8.1	--	8.1	8	8.1	8.2
Field Oxidation Potential	mV	-94.9	-134.2	-166.3	-156	-98	-181	-230	-178	-221	-40	-145.5	-149	-180	-171	-156.8	-77.6	-115.3	-97	-10.1	-159.7	200
Field Specific Conductance	umhos/cm	431.4	355.2	377.4	456	491	471	468	498	497	505	507	524	545	539	501.8	474	476	488.8	461	534	554
Field Temperature	deg C	13.6	8.9	13.3	15.4	12.3	10.6	12.2	14.7	17	9.5	12.2	14.6	17.4	11.3	15.6	11.3	15	14.7	11.5	16.1	8.7
Groundwater Elevation	feet	623.54	622.19	624.76	624.97	624.09	624.7	624.89	624.09	625.7	624.29	624.62	624.51	625.73	629.19	626.54	624.46	625.02	624.42	624.02	627	630.67
Oxygen, Dissolved	mg/L	1.08	0.34	0.16	0	1.6	0.3	0	0	0	1	0.89	0.2	0.3	0.2	0.13	0.75	0.16	0.42	0.27	0.1	0.15
Turbidity	NTU	--	1.9	2	6.79	4.27	3.04	0.2	4.87	0.05	8.31	2.72	5.5	9.19	9.33	1.36	1.39	1.65	0.75	0	0.81	0
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200	160	220	260	200
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	330	110	320	430	280
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	810	530	650	530	570
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	62000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500	740	640	620
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18000	19000	18000	21000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	560	670	530	590
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3600	2600	3700	3000
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11000	13000	13000	16000
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200	160	220	260	200
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<3.8	<4.6	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.5	--	--	6.8	--
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.1	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-302
Number of Sampling Dates: 21

Parameter Name	Units	12/10/2015	4/29/2016	7/20/2016	10/26/2016	1/17/2017	4/19/2017	6/19/2017	8/15/2017	10/16/2017	4/16/2018	6/4/2018	8/7/2018	10/8/2018	4/15/2019	10/2/2019	5/20/2020	8/19/2020	10/19/2020	4/9/2021	10/27/2021	4/5/2022
Boron	ug/L	564	468	579	673	576	527	558	645	708	489	--	648	694	690	690	480	--	640	460	630	540
Calcium	mg/L	95.1	96.5	97.8	110	116	112	110	118	116	120	--	116	122	130	130	120	--	110	120	120	120
Chloride	mg/L	17	14.9	15.1	15.5	15.7	12.9	14.4	15	13.9	13	--	13.9	13.5	13	12	14	12	11	11	14	12
Fluoride	mg/L	0.26	0.28	0.22	0.26	0.21	0.22	0.25	0.25	0.28	0.24	--	0.23	0.27	0.79	0.24	0.25	--	<0.23	0.31	1.3	<0.22
Field pH	Std. Units	7.15	7.41	6.86	7.12	7.25	7.25	7.03	6.96	7.1	7.26	6.97	6.92	6.93	7.66	7.15	6.93	7.18	7.06	7.08	6.89	6.92
Sulfate	mg/L	9.8	0.72	0.29	0.32	<0.15	<0.5	<0.5	<0.5	<0.5	<0.24	--	<0.24	<0.24	<1.8	<1.8	<3.6	<3.6	<3.6	<2.5	<2.5	<2
Total Dissolved Solids	mg/L	503	422	438	499	497	503	512	517	507	--	535	562	518	450	480	710	--	490	470	450	490
Antimony	ug/L	0.091	<0.058	<0.058	<0.058	0.14	<0.026	0.048	0.069	--	0.035	--	<0.15	<0.078	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69
Arsenic	ug/L	33.9	30.4	41	50.2	45	31.7	36.7	47.3	--	30.8	--	47.6	50.4	37	53	33	--	48	33	51	40
Barium	ug/L	483	479	540	648	706	559	597	660	--	789	--	661	603	690	740	610	--	630	630	680	690
Beryllium	ug/L	<0.17	<0.08	<0.08	<0.08	0.1	0.016	<0.012	0.012	--	<0.012	--	<0.12	<0.089	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.56	<0.029	<0.029	<0.029	0.074	<0.018	<0.018	<0.018	--	<0.018	--	--	<0.033	<0.077	--	<0.039	--	<0.049	0.06	0.076	<0.055
Chromium	ug/L	<0.96	0.56	0.39	0.56	3.5	1	0.51	0.44	--	0.35	--	0.49	0.39	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	1.6	1.1	1.2	1.1	3.2	1.1	1.2	1.2	--	1.1	--	1.1	1.1	1.5	1.3	1	--	0.86	1	1.1	1.5
Lead	ug/L	<1.9	<0.19	0.32	<0.19	3.3	0.36	0.14	0.075	--	0.084	--	0.23	<0.13	<0.27	<0.27	<0.27	--	<0.11	<0.21	1	<0.24
Lithium	ug/L	<2.5	<4.9	<4.9	<4.9	<4.9	<2.9	<2.9	<2.9	--	<4.6	--	--	<4.6	<2.7	<2.7	<2.3	--	<2.5	<2.5	<2.5	<2.5
Mercury	ug/L	<0.012	<0.039	<0.039	<0.039	<0.039	<0.046	<0.046	<0.046	--	0.35	--	<0.09	<0.09	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	<1.5	0.81	0.98	1.2	1.1	0.87	0.91	1.2	--	0.91	--	1.2	1.5	<1.1	1.4	<1.1	<1.1	<1.1	1.7	1.4	<1.2
Selenium	ug/L	<5.8	0.2	0.22	0.28	0.36	0.25	0.19	0.31	--	<0.086	--	0.3	0.26	<1	--	<1	--	<1	1.2	<0.96	<0.96
Thallium	ug/L	0.25	<0.5	<0.5	<0.5	<0.5	0.042	<0.036	0.14	--	<0.036	--	--	<0.099	<0.27	--	<0.26	--	--	2.5	0.31	<0.26
Total Radium	pCi/L	1.46	2.14	2.07	1.73	1.49	1.25	2.75	1.68	--	1.96	--	2.09	3.52	--	1.48	--	--	1.41	1.57	1.59	1.35
Radium-226	pCi/L	0.415	0.985	0.969	0.539	0.514	0.672	1.36	0.619	--	0.776	--	1.23	1.67	--	0.807	--	--	0.531	0.747	0.907	0.604
Radium-228	pCi/L	1.04	1.15	1.1	1.19	0.978	0.576	1.39	1.06	--	1.18	--	0.858	1.85	--	0.675	--	--	0.88	0.819	0.68	0.744
pH at 25 Degrees C	Std. Units	7.3	7.2	7	7	6.9	7.2	7.2	7	7	7.3	--	7	6.9	7	7	7	--	7.1	7	7	7
Field Oxidation Potential	mV	-150.3	-163.3	-141.5	-171	-154	-172	-189	-181	-179	-152	-179.3	-164	-43.9	-159	-160	-161.5	-173	-182.5	-171.2	-128.1	202.8
Field Specific Conductance	umhos/cm	918	875	891	1004	1036	971	1017	1053	1045	1098	1068	1095	1039	1089	1049	1070	1039	1074	1043	1075	1151
Field Temperature	deg C	12.7	7.8	14.2	15.6	9.3	7.6	11.4	15.7	16.2	6	10.8	15.3	16.99	7.1	15.9	8.7	16.2	14.4	7.5	15.7	6.3
Groundwater Elevation	feet	627.88	626.93	628.6	628.35	627.32	628.98	627.75	627.28	628.75	628.98	628.27	627.62	628.59	629.99	630.04	627.68	627.53	627.14	627.87	628.86	623.29
Oxygen, Dissolved	mg/L	0.08	0.1	0.03	0	0.2	0	0	0	0	0.8	0.12	0.1	0.48	0.2	0.11	0.19	0.05	0.1	0.03	1.07	0.13
Turbidity	NTU	--	4.98	2.6	11.14	93.1	3.36	4.61	4.28	3.96	5.25	1.46	11.23	5.92	18.39	4.71	4.16	4	2.96	3.15	3.35	3.21
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	530	540	540	550	620
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32000	30000	33000	33000	44000
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2800	2500	2400	2600	3000
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	130000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33000	36000	35000	45000
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	42000	41000	39000	49000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2700	2500	2700	3000
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4300	3200	4300	3900
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17000	16000	18000	21000
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	530	540	540	550	620
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<7.6	<3.8	<4.6	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	46	44	33	48	38
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-302A
Number of Sampling Dates: 7

Parameter Name	Units	5/20/2020	7/6/2020	8/19/2020	10/19/2020	4/9/2021	10/27/2021	4/5/2022
Boron	ug/L	190	250	--	160	170	140	170
Calcium	mg/L	79	78	--	72	75	75	73
Chloride	mg/L	7.8	6.9	7.1	6	6.7	6.9	5.6
Fluoride	mg/L	<0.23	<0.23	--	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	7.27	7.22	7.41	7.33	7.25	7.15	7.34
Sulfate	mg/L	53	47	49	47	45	50	52
Total Dissolved Solids	mg/L	520	350	--	350	330	280	300
Antimony	ug/L	<0.58	<0.51	--	--	<1.1	<1.1	<0.69
Arsenic	ug/L	<0.88	<0.88	--	<0.88	<0.75	<0.75	<0.75
Barium	ug/L	51	47	--	46	51	48	49
Beryllium	ug/L	<0.27	<0.27	--	--	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.039	<0.049	--	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	<1.1	<1.1	--	1.2	<1.1	<1.1	<1.1
Cobalt	ug/L	0.41	0.098	--	<0.091	<0.091	<0.19	0.45
Lead	ug/L	0.48	0.14	--	<0.11	<0.21	0.22	<0.24
Lithium	ug/L	<2.3	<2.5	--	<2.5	<2.5	<2.5	<2.5
Mercury	ug/L	<0.1	<0.1	--	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	<1.1	<1.1	<1.1	<1.1	<1.3	<1.3	<1.2
Selenium	ug/L	1.3	1.1	--	<1	1.2	1	1.3
Thallium	ug/L	<0.26	<0.26	--	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	--	0.0963	--	0.732	0.714	1.01	0.402
Radium-226	pCi/L	--	0.0963	--	0.229	0.076	0.233	0.196
Radium-228	pCi/L	--	-0.00723	--	0.503	0.638	0.778	0.206
pH at 25 Degrees C	Std. Units	7.4	7.6	--	7.4	7.4	7.6	7.4
Field Oxidation Potential	mV	126.9	47	74.1	125.4	104.7	159.1	199.7
Field Specific Conductance	umhos/cm	644	641	638	650.1	597	627	630
Field Temperature	deg C	11.7	11.7	11.8	11.4	11.1	12	10.2
Groundwater Elevation	feet	623.19	624.2	623.52	623.03	623.12	623.1	623.71
Oxygen, Dissolved	mg/L	6.55	6.6	6.23	6.46	7.88	7.27	6.49
Turbidity	NTU	11.9	4.68	0.19	0.58	0.86	0	0
Total Alkalinity as CaCO3	mg/L	--	--	290	300	300	300	330
Iron, dissolved	ug/L	--	--	330	56	440	38	<36
Manganese, dissolved	ug/L	--	--	38	10	59	<4.4	8.3
Calcium, total	ug/L	--	--	--	81000	--	--	--
Iron, total	ug/L	--	--	--	<50	47	41	<36
Magnesium, total	ug/L	--	--	--	38000	37000	35000	37000
Manganese, total	ug/L	--	--	--	<4	4.5	<4.4	<3.6
Potassium, total	ug/L	--	--	--	1000	1000	1000	1100
Sodium, total	ug/L	--	--	--	6700	7000	6300	7400
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	290	300	300	300	330
Carbonate Alkalinity as CaCO3	mg/L	--	--	<3.8	<3.8	<4.2	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	<0.88	--	--	<0.75	--
Molybdenum, dissolved	ug/L	--	--	<1.1	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-303
Number of Sampling Dates: 21

Parameter Name	Units	12/10/2015	4/29/2016	7/20/2016	10/26/2016	1/17/2017	4/19/2017	6/20/2017	8/15/2017	10/16/2017	4/16/2018	6/4/2018	8/7/2018	10/8/2018	4/15/2019	10/2/2019	5/19/2020	8/18/2020	10/19/2020	4/8/2021	10/26/2021	4/5/2022
Boron	ug/L	178	178	405	235	133	177	390	386	592	144	--	675	474	150	520	150	--	370	120	170	110
Calcium	mg/L	38.2	48.6	64.5	67.1	72.5	60.1	62.2	42	84.7	54.6	--	46	35.3	49	46	54	--	34	47	49	48
Chloride	mg/L	18.7	16.8	18.1	17.7	21.9	16.1	17.3	18.4	17.2	24.1	--	14.6	16.3	18	16	15	16	15	21	25	23
Fluoride	mg/L	0.43	0.32	0.37	0.31	0.22	0.24	0.36	0.48	0.25	0.32	--	0.47	0.72	1	0.42	0.38	--	<0.23	0.52	<0.28	0.33
Field pH	Std. Units	8.03	8.07	7.12	7.93	8.16	8.19	7.93	7.78	7.2	8	7.59	7.66	7.91	7.95	7.83	7.67	7.65	7.77	8	7.45	8.07
Sulfate	mg/L	30.8	35.8	56	62.2	67.9	43.7	71.9	43.4	69.9	43.5	--	52.5	29.1	35	39	42	33	20	25	28	54
Total Dissolved Solids	mg/L	240	200	317	340	350	317	346	219	379	--	256	262	181	280	210	450	--	180	210	150	180
Antimony	ug/L	0.22	0.27	0.55	0.25	0.19	0.26	0.34	0.26	--	0.16	--	0.34	0.19	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69
Arsenic	ug/L	<4.5	1.4	1.4	1.8	1.8	2.4	2.5	2.5	--	1.2	--	2.3	2.3	1.4	2.5	1.4	--	3.2	1.5	2.2	1.3
Barium	ug/L	102	122	178	169	174	159	214	147	--	173	--	194	121	160	220	210	--	190	170	240	200
Beryllium	ug/L	<0.17	<0.08	<0.08	<0.08	<0.08	<0.012	<0.012	<0.012	--	0.046	--	<0.12	<0.089	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.56	<0.029	<0.029	<0.029	0.042	0.018	<0.018	<0.018	--	<0.018	--	--	<0.033	<0.077	--	<0.039	--	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	<0.96	0.52	<0.34	<0.34	0.81	0.71	0.36	0.36	--	0.51	--	0.44	0.089	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.14	<0.5	<0.5	<0.5	<0.5	0.09	0.22	0.14	--	0.14	--	0.36	0.21	<0.091	0.12	<0.091	--	0.098	<0.091	<0.19	<0.19
Lead	ug/L	<1.9	<0.19	0.2	<0.19	0.24	0.078	0.085	<0.033	--	<0.033	--	0.24	<0.13	<0.27	<0.27	<0.27	--	<0.11	<0.21	<0.21	<0.24
Lithium	ug/L	5.1	6.2	13.9	10.4	5.9	4.7	10.4	16.1	--	<4.6	--	--	8.1	3.3	9.1	4.2	--	9.5	3.5	11	5.4
Mercury	ug/L	<0.012	<0.039	<0.039	<0.039	<0.039	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.09	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	<1.5	5	16.8	16.1	10.7	7.6	15.9	11.8	--	7.3	--	21.6	12	6.2	9.8	3.1	23	10	4.8	7.1	9.2
Selenium	ug/L	<5.8	1.2	0.9	0.6	1.9	0.63	0.67	0.59	--	3.3	--	0.38	0.39	<1	--	1.4	--	<1	1.1	<0.96	<0.96
Thallium	ug/L	0.14	<0.5	<0.5	<0.5	<0.5	<0.036	<0.036	0.17	--	<0.036	--	--	<0.099	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.926	0.73	0.768	1.24	0.416	0.339	0.639	0.477	--	0.787	--	0.929	1.87	--	0.463	--	--	0.27	0.243	0.359	0.533
Radium-226	pCi/L	-0.132	0.18	0.372	0.653	-0.077	0.339	0.217	0.155	--	0.359	--	0.929	0.664	--	0.444	--	--	0.217	0.125	0.278	0.296
Radium-228	pCi/L	0.926	0.555	0.396	0.582	0.416	-0.167	0.422	0.322	--	0.428	--	-0.073	1.21	--	0.0185	--	--	0.0528	0.118	0.0804	0.236
pH at 25 Degrees C	Std. Units	8	8	7.6	7.8	7.7	8.1	7.7	7.9	7.4	8	--	8	7.9	8	8	7.9	--	7.9	8	7.7	8.1
Field Oxidation Potential	mV	84.2	133.2	-27.2	10	221	81	9	-75	49	53	68	-71	139	-76	156	28.9	25.8	38.4	78.4	125.8	202.1
Field Specific Conductance	umhos/cm	375.2	409	535	776	614	520	567	423	687	552	431	425	328	448	409	464	468	340.3	425	452	452.4
Field Temperature	deg C	8.5	6.7	30.4	22.1	6.3	10.5	24.8	31.7	25.2	4.1	17	31.5	28.5	4.2	25.2	6.3	30.4	23.5	3.7	24.8	4.6
Groundwater Elevation	feet	638.79	638.07	639.33	638.65	638.1	639.2	638.77	637.86	638.79	638.62	638.81	637.85	637.32	638.22	638.03	637.98	638.22	636.96	638.07	638.68	641.69
Oxygen, Dissolved	mg/L	2.38	2.63	0.15	8.1	3	1.4	0	0	1.9	3.5	0.36	0.4	0.4	1.4	0.27	1.29	0.15	0.58	2.03	0.17	1.17
Turbidity	NTU	--	2.13	0.39	3.02	2.53	0	0	0	0	0.4	1.08	4.51	2.62	6.6	0.58	0	1.62	0	0	0.65	0
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	190	120	170	220	210
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<50	<50	320	69	<36
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120	160	66	38	60
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.05	<50	<36	38	<36
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13000	18000	16000	20000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	180	30	39	89
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2200	1500	2800	1900
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12000	13000	15000	16000
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	190	120	170	220	210
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<3.8	<3.8	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1	--	--	2.2	--
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-304
Number of Sampling Dates: 8

Parameter Name	Units	6/20/2019	10/2/2019	5/20/2020	8/19/2020	10/19/2020	4/9/2021	10/26/2021	4/5/2022
Boron	ug/L	<110	<110	<73	--	<80	64	<58	71
Calcium	mg/L	82	72	70	--	66	69	71	70
Chloride	mg/L	5.9	7	6.2	7.7	6.2	6.5	6.9	5.3
Fluoride	mg/L	<0.23	<0.23	<0.23	--	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	7.01	7.16	7.32	7.55	7.16	7.27	7.29	7.25
Sulfate	mg/L	20	17	17	15	16	15	18	20
Total Dissolved Solids	mg/L	350	300	470	--	270	290	200	240
Antimony	ug/L	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69
Arsenic	ug/L	<0.75	<0.75	<0.88	--	<0.88	<0.75	<0.75	<0.75
Barium	ug/L	54	47	42	--	42	43	44	42
Beryllium	ug/L	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.077	--	<0.039	--	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	1.6	1	8.2	--	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	1.1	0.19	0.22	--	<0.091	<0.091	0.22	<0.19
Lead	ug/L	1.2	0.35	<0.27	--	<0.11	<0.21	0.23	<0.24
Lithium	ug/L	<2.7	<2.7	<2.3	--	<2.5	<2.5	<2.5	<2.5
Mercury	ug/L	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	<1.1	<1.1	<1.1	1.2	<1.1	<1.3	<1.3	2.7
Selenium	ug/L	<1	--	<1	--	<1	<0.96	<0.96	<0.96
Thallium	ug/L	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.356	0.9	--	--	0.139	0.497	0.87	0.143
Radium-226	pCi/L	0.217	0.246	--	--	-0.0496	0.0825	0.331	0.143
Radium-228	pCi/L	0.139	0.653	--	--	0.139	0.415	0.539	-0.0479
pH at 25 Degrees C	Std. Units	7.4	7	7.3	--	7.3	7.4	7.4	7.5
Field Oxidation Potential	mV	41	107.3	104.9	109.6	155.6	160.3	171.3	201.4
Field Specific Conductance	umhos/cm	593	578.4	574	583	601.9	520	562.3	571.8
Field Temperature	deg C	10.6	12.4	9	11.8	11.8	8.8	12.1	8.2
Groundwater Elevation	feet	0	623.79	621.57	621.75	621.4	621.46	621.29	621.72
Oxygen, Dissolved	mg/L	6.2	7.51	7.78	6.76	6.84	8.69	8.32	7.2
Turbidity	NTU	104	3.51	3.72	1.06	0.42	0	0	0
Total Alkalinity as CaCO3	mg/L	280	--	--	300	310	300	370	320
Iron, dissolved	ug/L	--	--	--	<50	<50	<36	67	<36
Manganese, dissolved	ug/L	--	--	--	6.9	4.1	10	<4.4	<3.6
Calcium, total	ug/L	--	--	--	--	75000	--	--	--
Iron, total	ug/L	--	--	--	51	<50	37	<36	<36
Magnesium, total	ug/L	--	--	--	--	35000	33000	32000	33000
Manganese, total	ug/L	--	--	--	--	6	5.9	<4.4	<3.6
Potassium, total	ug/L	--	--	--	--	1300	1200	1300	1300
Sodium, total	ug/L	--	--	--	--	6100	4900	4000	5900
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	300	310	300	370	320
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<3.8	<3.8	<4.2	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	--	<0.88	--	--	<0.75	--
Molybdenum, dissolved	ug/L	--	--	--	1.6	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-304A
Number of Sampling Dates: 9

Parameter Name	Units	5/20/2020	7/6/2020	8/19/2020	10/19/2020	2/23/2021	4/9/2021	7/12/2021	10/26/2021	4/5/2022
Boron	ug/L	1800	1700	--	1700	--	1400	--	1300	1500
Calcium	mg/L	54	41	--	35	--	43	--	35	38
Chloride	mg/L	15	13	13	12	--	13	--	15	16
Fluoride	mg/L	0.57	0.42	--	<0.23	--	0.53	--	<0.28	0.32
Field pH	Std. Units	8.04	7.9	8.48	7.89	8.01	7.78	8.09	7.94	7.97
Sulfate	mg/L	83	77	76	76	--	77	--	91	87
Total Dissolved Solids	mg/L	680	330	--	310	--	300	--	240	270
Antimony	ug/L	<0.58	<0.51	--	--	--	<1.1	--	<1.1	<0.69
Arsenic	ug/L	1.3	<0.88	--	<0.88	--	0.78	--	<0.75	<0.75
Barium	ug/L	67	34	--	28	--	36	--	26	30
Beryllium	ug/L	<0.27	<0.27	--	--	--	<0.27	--	<0.27	<0.27
Cadmium	ug/L	0.19	0.098	--	0.073	--	0.096	--	<0.051	0.074
Chromium	ug/L	2.2	1.1	--	<1.1	--	1.6	--	<1.1	<1.1
Cobalt	ug/L	3.2	0.83	--	0.43	--	0.88	--	<0.19	0.48
Lead	ug/L	4.3	1.2	--	0.48	--	1.1	--	0.37	0.81
Lithium	ug/L	2.7	<2.5	--	<2.5	--	<2.5	--	<2.5	<2.5
Mercury	ug/L	<0.1	<0.1	--	--	--	<0.15	--	<0.15	<0.11
Molybdenum	ug/L	110	140	140	130	120	110	100	120	120
Selenium	ug/L	<1	<1	--	<1	--	<0.96	--	<0.96	<0.96
Thallium	ug/L	<0.26	<0.26	--	--	--	<0.26	--	<0.26	<0.26
Total Radium	pCi/L	--	0.573	--	0.157	--	0.468	--	0.698	0.51
Radium-226	pCi/L	--	0.221	--	0.117	--	0.0845	--	0.245	-0.00262
Radium-228	pCi/L	--	0.352	--	0.0402	--	0.384	--	0.454	0.51
pH at 25 Degrees C	Std. Units	8	8	--	8	--	8	--	8.1	8
Field Oxidation Potential	mV	61.8	-15.8	50.5	162.7	44.9	151.6	80.3	157.1	198.1
Field Specific Conductance	umhos/cm	529	541	533	547.4	534	533	543.1	526.8	520.9
Field Temperature	deg C	12.6	19.1	14	10.1	9.1	10.1	13.8	13.4	9.4
Groundwater Elevation	feet	624.88	625.76	0	624.41	625.04	624.31	623.87	623.87	619
Oxygen, Dissolved	mg/L	0.48	0.3	0.27	0.78	0.39	0.41	0.48	2.53	0.19
Turbidity	NTU	585.9	181.9	236.2	90.29	116.6	165.2	36.09	2.78	42.65
Total Alkalinity as CaCO3	mg/L	--	--	190	190	--	180	--	210	210
Iron, dissolved	ug/L	--	--	<50	55	--	<36	--	<36	<36
Manganese, dissolved	ug/L	--	--	16	7.3	--	6.2	--	<4.4	6.8
Calcium, total	ug/L	--	--	--	35000	--	--	--	--	--
Iron, total	ug/L	--	--	--	270	--	580	--	<36	240
Magnesium, total	ug/L	--	--	--	16000	--	18000	--	15000	16000
Manganese, total	ug/L	--	--	--	26	--	54	--	<4.4	25
Potassium, total	ug/L	--	--	--	680	--	710	--	650	740
Sodium, total	ug/L	--	--	--	63000	--	58000	--	55000	58000
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	190	190	--	180	--	210	210
Carbonate Alkalinity as CaCO3	mg/L	--	--	<7.6	<3.8	--	<4.6	--	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	<0.88	--	--	--	--	<0.75	--
Molybdenum, dissolved	ug/L	--	--	160	140	140	120	--	120	130

Single Location

Name: IPL - Lansing

Location ID: MW-305
Number of Sampling Dates: 8

Parameter Name	Units	6/20/2019	10/2/2019	5/19/2020	8/18/2020	10/20/2020	4/9/2021	10/27/2021	4/4/2022
Boron	ug/L	180	190	210	--	220	140	200	110
Calcium	mg/L	92	97	82	--	76	79	79	78
Chloride	mg/L	6.8	3.2	7.5	6.9	6	4.8	6.6	3.5
Fluoride	mg/L	<0.23	<0.23	0.23	--	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	7.19	7.03	6.9	7.23	7.24	7.17	7.29	6.94
Sulfate	mg/L	24	26	<3.6	<3.6	<3.6	29	14	42
Total Dissolved Solids	mg/L	440	380	540	--	320	300	260	270
Antimony	ug/L	<0.53	--	<0.58	--	--	<1.1	<1.1	<0.69
Arsenic	ug/L	2.2	3.4	3.6	--	5.6	1.7	3.9	0.89
Barium	ug/L	170	190	220	--	200	150	200	97
Beryllium	ug/L	<0.27	--	<0.27	--	--	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.077	--	<0.039	--	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	<0.98	<0.98	<1.1	--	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.52	0.27	0.32	--	0.12	0.29	<0.19	<0.19
Lead	ug/L	<0.27	<0.27	<0.27	--	<0.11	<0.21	0.29	<0.24
Lithium	ug/L	3.4	4.6	<2.3	--	<2.5	<2.5	<2.5	2.6
Mercury	ug/L	<0.1	--	<0.1	--	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	1.7	1.6	<1.1	1.8	<1.1	<1.3	<1.3	<1.2
Selenium	ug/L	<1	--	<1	--	<1	1.4	<0.96	1.7
Thallium	ug/L	<0.27	--	<0.26	--	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.553	0.557	--	--	0.377	0.474	1.43	0.249
Radium-226	pCi/L	0.181	0.38	--	--	0.296	0.301	0.55	0.145
Radium-228	pCi/L	0.372	0.178	--	--	0.0809	0.173	0.879	0.104
pH at 25 Degrees C	Std. Units	7.2	7.2	7.2	--	7.2	7.3	7.3	7.4
Field Oxidation Potential	mV	27	-105.6	-138	-162.9	-145.4	-25.8	-128.5	198.9
Field Specific Conductance	umhos/cm	638	635	684	654	634	574	643	545
Field Temperature	deg C	15.5	19	9.8	19	15.6	7.1	16.3	4.4
Groundwater Elevation	feet	0	629.77	627.24	626.98	626.54	627.02	626.41	627.17
Oxygen, Dissolved	mg/L	0.2	0.21	0.48	0.07	0.22	2.1	0.08	4.06
Turbidity	NTU	9.6	8.87	20.44	27.27	3.65	14.88	0.27	4.57
Total Alkalinity as CaCO3	mg/L	290	--	--	340	340	280	330	290
Iron, dissolved	ug/L	--	--	--	11000	10000	3700	6900	830
Manganese, dissolved	ug/L	--	--	--	2000	1800	1100	1400	520
Calcium, total	ug/L	--	--	--	--	87000	--	--	--
Iron, total	ug/L	--	--	--	--	12000	5900	7300	1500
Magnesium, total	ug/L	--	--	--	--	32000	25000	30000	23000
Manganese, total	ug/L	--	--	--	--	1800	1200	1500	560
Potassium, total	ug/L	--	--	--	--	1800	1300	1600	1500
Sodium, total	ug/L	--	--	--	--	7700	5900	6700	5500
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	340	340	280	330	290
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<7.6	<3.8	<4.6	<2.3	<4.6
Arsenic, dissolved	ug/L	--	--	--	6.4	--	--	3.7	--
Molybdenum, dissolved	ug/L	--	--	--	2.8	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-306
Number of Sampling Dates: 12

Parameter Name	Units	6/20/2019	10/2/2019	12/5/2019	2/5/2020	5/19/2020	8/18/2020	10/20/2020	2/23/2021	4/9/2021	7/12/2021	10/27/2021	4/4/2022
Boron	ug/L	860	660	--	--	720	--	720	--	650	--	580	550
Calcium	mg/L	240	260	--	--	340	--	260	--	290	--	210	200
Chloride	mg/L	24	40	--	--	32	28	27	--	33	--	34	41
Fluoride	mg/L	<0.23	<0.23	--	--	<0.23	--	<0.23	--	<0.28	--	<0.28	<0.22
Field pH	Std. Units	6.87	9	6.76	6.95	6.66	7.12	6.88	6.87	6.85	7.51	6.86	6.86
Sulfate	mg/L	280	140	--	--	430	260	220	--	240	--	95	100
Total Dissolved Solids	mg/L	1200	1300	--	--	3400	--	1100	--	1300	--	960	1100
Antimony	ug/L	<0.53	--	--	--	<0.58	--	--	--	<1.1	--	<1.1	<0.69
Arsenic	ug/L	8.6	12	9.3	9.4	8.5	--	10	9	8	8.2	8.6	7.7
Barium	ug/L	280	540	--	--	260	--	250	--	280	--	320	350
Beryllium	ug/L	<0.27	--	--	--	<0.27	--	--	--	<0.27	--	<0.27	<0.27
Cadmium	ug/L	<0.077	--	--	--	<0.039	--	<0.049	--	<0.051	--	<0.051	<0.055
Chromium	ug/L	<0.98	<0.98	--	--	<1.1	--	<1.1	--	1.3	--	<1.1	<1.1
Cobalt	ug/L	1	0.98	--	--	0.53	--	0.24	--	0.35	--	0.3	0.49
Lead	ug/L	0.52	<0.27	--	--	<0.27	--	<0.11	--	<0.21	--	1.1	<0.24
Lithium	ug/L	19	25	--	--	25	--	26	--	24	--	22	23
Mercury	ug/L	<0.1	--	--	--	<0.1	--	--	--	<0.15	--	<0.15	<0.11
Molybdenum	ug/L	<1.1	<1.1	--	--	<1.1	<1.1	<1.1	--	<1.3	--	<1.3	<1.2
Selenium	ug/L	<1	--	--	--	<1	--	<1	--	<0.96	--	<0.96	<0.96
Thallium	ug/L	<0.27	--	--	--	<0.26	--	--	--	<0.26	--	<0.26	<0.26
Total Radium	pCi/L	0.897	1.79	--	--	--	--	1.16	--	1.09	--	2.1	0.757
Radium-226	pCi/L	0.432	0.902	--	--	--	--	0.459	--	0.436	--	0.814	0.464
Radium-228	pCi/L	0.465	0.889	--	--	--	--	0.696	--	0.659	--	1.29	0.292
pH at 25 Degrees C	Std. Units	6.9	7.2	--	--	6.9	--	6.8	--	7.2	--	7	7
Field Oxidation Potential	mV	22	-1205	-127	-127.7	-137	-139.1	-142.3	-127.2	-134.2	-128.3	-126.3	196.3
Field Specific Conductance	umhos/cm	1632	1998	2196	2477	2332	1911	1832	2055	1994	2006	1778	1839
Field Temperature	deg C	13.8	16.33	16.3	13.7	12.7	15	16.2	13.6	12.6	14.4	16.6	12
Groundwater Elevation	feet	0	622.47	620.6	620.83	620.43	620.37	619.92	619.76	620.03	619.83	619.91	620.42
Oxygen, Dissolved	mg/L	1	0.27	0.9	0.23	0.3	0.1	0.26	0.12	0.05	0.37	0.11	0.26
Turbidity	NTU	25.9	3.67	10.26	4.43	2.63	0.16	3.08	3.11	0.09	0.13	2.72	0
Total Alkalinity as CaCO3	mg/L	620	--	--	--	--	850	800	--	880	--	880	940
Iron, dissolved	ug/L	--	--	--	--	--	44000	39000	--	41000	--	33000	32000
Manganese, dissolved	ug/L	--	--	--	--	--	5100	4800	--	5300	--	4100	4500
Calcium, total	ug/L	--	--	--	--	--	--	280000	--	--	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	40000	--	44000	--	33000	33000
Magnesium, total	ug/L	--	--	--	--	--	--	46000	--	50000	--	36000	41000
Manganese, total	ug/L	--	--	--	--	--	--	4800	--	5500	--	4100	4400
Potassium, total	ug/L	--	--	--	--	--	--	7100	--	6100	--	6200	7000
Sodium, total	ug/L	--	--	--	--	--	--	110000	--	98000	--	140000	160000
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	850	800	--	880	--	880	940
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	<7.6	<3.8	--	<4.6	--	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	--	--	--	9.4	--	8.8	7.8	--	8.4	7.8
Molybdenum, dissolved	ug/L	--	--	--	--	--	<1.1	--	--	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-306A
Number of Sampling Dates: 7

Parameter Name	Units	5/19/2020	7/6/2020	8/18/2020	10/20/2020	4/9/2021	10/27/2021	4/4/2022
Boron	ug/L	290	340	--	280	280	240	260
Calcium	mg/L	83	82	--	76	78	80	78
Chloride	mg/L	7.8	7.1	7.4	7.2	7.2	7.7	6.3
Fluoride	mg/L	<0.23	<0.23	--	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	6.99	7.04	7.38	7.18	7.21	7.34	7.19
Sulfate	mg/L	44	40	41	41	39	42	43
Total Dissolved Solids	mg/L	610	360	--	350	350	280	330
Antimony	ug/L	<0.58	<0.51	--	--	<1.1	<1.1	<0.69
Arsenic	ug/L	<0.88	<0.88	--	<0.88	<0.75	<0.75	<0.75
Barium	ug/L	61	58	--	58	62	59	61
Beryllium	ug/L	<0.27	<0.27	--	--	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.039	<0.049	--	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	<1.1	<1.1	--	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.33	0.18	--	0.22	0.17	0.21	0.19
Lead	ug/L	<0.27	<0.11	--	<0.11	<0.21	0.32	<0.24
Lithium	ug/L	<2.3	<2.5	--	<2.5	<2.5	<2.5	<2.5
Mercury	ug/L	<0.1	<0.1	--	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	<1.1	<1.1	<1.1	<1.1	<1.3	<1.3	<1.2
Selenium	ug/L	<1	<1	--	<1	<0.96	0.99	<0.96
Thallium	ug/L	<0.26	<0.26	--	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	--	0.525	--	0.124	0.408	0.682	0.198
Radium-226	pCi/L	--	0.0377	--	-0.201	0.12	0.279	0.00526
Radium-228	pCi/L	--	0.487	--	0.124	0.288	0.403	0.192
pH at 25 Degrees C	Std. Units	7.4	7.5	--	7.4	7.4	7.4	7.4
Field Oxidation Potential	mV	-21.7	-55.8	21.2	-38.5	-8.5	78.8	192.7
Field Specific Conductance	umhos/cm	697	683	654	681	669	663	669
Field Temperature	deg C	14.6	15.3	15.5	14.4	14.2	14.6	13
Groundwater Elevation	feet	620.4	621.66	620.63	620.17	620.14	620.17	620.61
Oxygen, Dissolved	mg/L	1.18	1.24	1.16	1.3	1.68	1.23	1.13
Turbidity	NTU	4.15	1.4	2.71	1.56	0.01	0.59	0
Total Alkalinity as CaCO3	mg/L	--	--	330	320	320	330	350
Iron, dissolved	ug/L	--	--	1900	1600	1600	1500	1500
Manganese, dissolved	ug/L	--	--	1200	1100	1100	1000	1000
Calcium, total	ug/L	--	--	--	85000	--	--	--
Iron, total	ug/L	--	--	--	1900	1800	1800	1700
Magnesium, total	ug/L	--	--	--	37000	35000	33000	36000
Manganese, total	ug/L	--	--	--	1100	1100	1000	1000
Potassium, total	ug/L	--	--	--	1200	1200	1200	1300
Sodium, total	ug/L	--	--	--	11000	10000	9800	10000
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	330	320	320	330	350
Carbonate Alkalinity as CaCO3	mg/L	--	--	<7.6	<1.9	<4.6	<4.6	<4.6
Arsenic, dissolved	ug/L	--	--	<0.88	--	--	<0.75	--
Molybdenum, dissolved	ug/L	--	--	<1.1	--	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-307
Number of Sampling Dates: 4

Parameter Name	Units	7/12/2021	8/13/2021	10/27/2021	4/5/2022
Boron	ug/L	220	250	280	400
Calcium	mg/L	55	47	38	50
Chloride	mg/L	15	16	17	22
Fluoride	mg/L	<0.28	<0.28	<0.28	<0.22
Field pH	Std. Units	8.25	7.86	8.11	8.34
Sulfate	mg/L	44	42	70	76
Total Dissolved Solids	mg/L	210	230	130	210
Antimony	ug/L	<1.1	<1.1	<1.1	<0.69
Arsenic	ug/L	2.1	2.4	2.5	1.8
Barium	ug/L	310	300	240	290
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.051	<0.051	<0.051	<0.055
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.15	0.15	<0.19	<0.19
Lead	ug/L	<0.21	<0.21	<0.21	<0.24
Lithium	ug/L	13	13	12	10
Mercury	ug/L	<0.15	<0.15	<0.15	<0.11
Molybdenum	ug/L	5.5	7.2	12	16
Selenium	ug/L	<0.96	<0.96	<0.96	<0.96
Thallium	ug/L	<0.26	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.499	1.91	0.743	0.183
Radium-226	pCi/L	0.171	0.289	0.421	0.0893
Radium-228	pCi/L	0.328	1.62	0.322	0.0932
pH at 25 Degrees C	Std. Units	8.2	8.1	8.2	8.2
Field Oxidation Potential	mV	-40.6	-17.5	-123.4	198.2
Field Specific Conductance	umhos/cm	449.6	437	361.2	460
Field Temperature	deg C	15.2	17.4	16.4	6.9
Groundwater Elevation	feet	630.95	630.01	634.9	639.74
Oxygen, Dissolved	mg/L	0.47	0.17	0.93	0.08
Turbidity	NTU	0	0	0	0
Total Alkalinity as CaCO3	mg/L	170	--	86	130
Iron, dissolved	ug/L	110	--	110	87
Manganese, dissolved	ug/L	300	--	240	560
Iron, total	ug/L	140	--	95	78
Magnesium, total	ug/L	17000	--	12000	17000
Manganese, total	ug/L	310	--	230	590
Potassium, total	ug/L	3600	--	2600	2400
Sodium, total	ug/L	13000	--	11000	16000
Bicarbonate Alkalinity as CaCO3	mg/L	170	--	86	130
Carbonate Alkalinity as CaCO3	mg/L	<4.1	--	<2.3	<4.6
Arsenic, dissolved	ug/L	2	--	2.6	--
Molybdenum, dissolved	ug/L	5.2	--	--	--

Single Location

Name: IPL - Lansing

Location ID: MW-307A
Number of Sampling Dates: 4

Parameter Name	Units	7/12/2021	8/13/2021	10/27/2021	4/5/2022
Boron	ug/L	370	380	300	430
Calcium	mg/L	67	62	70	58
Chloride	mg/L	6.8	7.2	8.1	13
Fluoride	mg/L	<0.28	<0.28	<0.28	<0.22
Field pH	Std. Units	7.83	7.35	7.29	7.48
Sulfate	mg/L	30	32	33	28
Total Dissolved Solids	mg/L	280	290	230	250
Antimony	ug/L	<1.1	<1.1	<1.1	<0.69
Arsenic	ug/L	<0.75	0.76	1.3	2.1
Barium	ug/L	120	120	130	110
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.051	<0.051	<0.051	<0.055
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.54	0.57	0.77	0.68
Lead	ug/L	<0.21	<0.21	0.21	<0.24
Lithium	ug/L	<2.5	<2.5	<2.5	<2.5
Mercury	ug/L	<0.15	<0.15	<0.15	<0.11
Molybdenum	ug/L	6.8	6.6	6.3	5.7
Selenium	ug/L	<0.96	<0.96	<0.96	<0.96
Thallium	ug/L	<0.26	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.509	0.258	0.957	0.0954
Radium-226	pCi/L	0.265	0.163	0.412	0.0954
Radium-228	pCi/L	0.245	0.0954	0.545	-0.076
pH at 25 Degrees C	Std. Units	7.5	7.6	7.6	8.1
Field Oxidation Potential	mV	73.1	54.3	47.7	199.8
Field Specific Conductance	umhos/cm	615.6	612.3	625.4	563
Field Temperature	deg C	13.2	12.5	12.9	10.8
Groundwater Elevation	feet	625.27	625.48	626.25	626.72
Oxygen, Dissolved	mg/L	0.27	0.17	1.39	0.09
Turbidity	NTU	0	0	0	0
Total Alkalinity as CaCO3	mg/L	310	--	310	330
Iron, dissolved	ug/L	<36	--	170	280
Manganese, dissolved	ug/L	600	--	720	700
Iron, total	ug/L	<36	--	160	370
Magnesium, total	ug/L	33000	--	33000	27000
Manganese, total	ug/L	620	--	720	710
Potassium, total	ug/L	3000	--	2500	2100
Sodium, total	ug/L	16000	--	14000	22000
Bicarbonate Alkalinity as CaCO3	mg/L	310	--	310	330
Carbonate Alkalinity as CaCO3	mg/L	<4.2	--	<4.6	<4.6
Arsenic, dissolved	ug/L	<0.75	--	1.4	--
Molybdenum, dissolved	ug/L	7.3	--	--	--

Appendix E

Statistical Evaluation

E1 – LCL Evaluation – October 2021

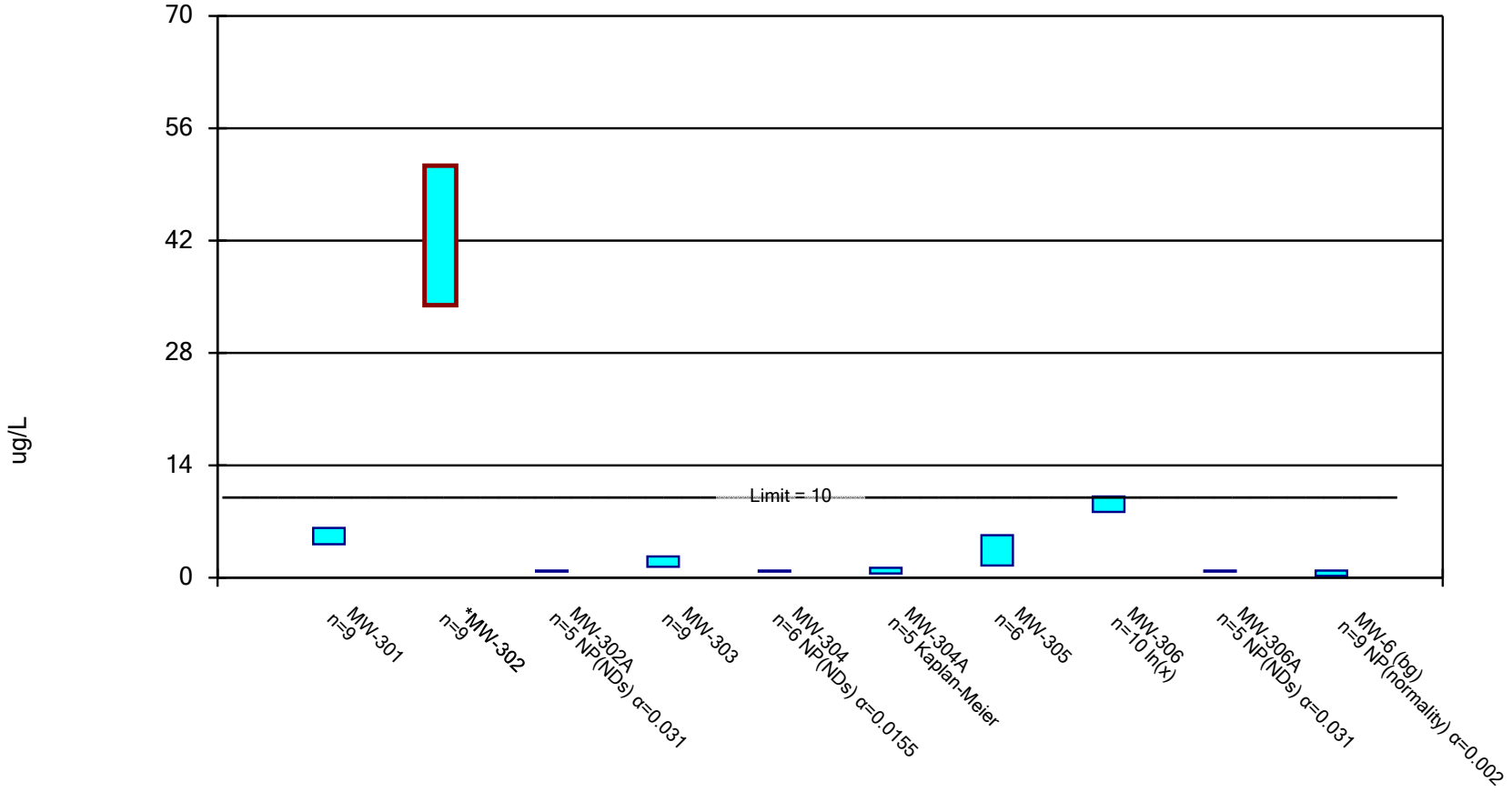
Confidence Interval

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev Printed 12/13/2021, 10:26 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (ug/L)	MW-301	6.191	4.164	10	No	9	0	None	No	0.01	Param.
Arsenic (ug/L)	**MW-302**	**51.34**	**33.95**	**10**	**Yes**	**9**	**0**	**None**	**No**	**0.01**	**Param.**
Arsenic (ug/L)	MW-302A	0.88	0.75	10	No	5	100	None	No	0.031	NP (NDs)
Arsenic (ug/L)	MW-303	2.64	1.36	10	No	9	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-304	0.88	0.75	10	No	6	100	None	No	0.0155	NP (NDs)
Arsenic (ug/L)	MW-304A	1.231	0.5127	10	No	5	60	Kapla...	No	0.01	Param.
Arsenic (ug/L)	MW-305	5.29	1.51	10	No	6	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-306	10.11	8.19	10	No	10	0	None	ln(x)	0.01	Param.
Arsenic (ug/L)	MW-306A	0.88	0.75	10	No	5	100	None	No	0.031	NP (NDs)
Arsenic (ug/L)	MW-6 (bg)	0.88	0.23	10	No	9	66.67	None	No	0.002	NP (normality)
Molybdenum (ug/L)	MW-301	9.965	5.569	100	No	9	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-302	1.438	0.8747	100	No	9	33.33	Kapla...	No	0.01	Param.
Molybdenum (ug/L)	MW-302A	1.3	1.1	100	No	5	100	Kapla...	No	0.031	NP (NDs)
Molybdenum (ug/L)	MW-303	14.35	3.855	100	No	9	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-304	1.3	1.1	100	No	6	100	None	No	0.0155	NP (NDs)
Molybdenum (ug/L)	**MW-304A**	**136.7**	**105.8**	**100**	**Yes**	**8**	**0**	**None**	**No**	**0.01**	**Param.**
Molybdenum (ug/L)	MW-305	1.642	0.925	100	No	6	66.67	Kapla...	No	0.01	Param.
Molybdenum (ug/L)	MW-306	1.3	1.1	100	No	6	100	Kapla...	No	0.0155	NP (NDs)
Molybdenum (ug/L)	MW-306A	1.3	1.1	100	No	5	100	Kapla...	No	0.031	NP (NDs)
Molybdenum (ug/L)	MW-6 (bg)	1.3	0.26	100	No	9	77.78	Kapla...	No	0.002	NP (NDs)
Thallium (ug/L)	MW-301	0.27	0.036	2	No	6	100	None	No	0.0155	NP (NDs)
Thallium (ug/L)	MW-302	0.9713	0.01124	2	No	6	66.67	Kapla...	ln(x)	0.01	Param.
Thallium (ug/L)	MW-302A	0.26	0.26	2	No	4	100	Kapla...	No	0.0625	NP (NDs)
Thallium (ug/L)	MW-303	0.27	0.036	2	No	6	100	Kapla...	No	0.0155	NP (NDs)
Thallium (ug/L)	MW-304	0.27	0.26	2	No	4	100	Kapla...	No	0.0625	NP (NDs)
Thallium (ug/L)	MW-304A	0.26	0.26	2	No	4	100	Kapla...	No	0.0625	NP (NDs)
Thallium (ug/L)	MW-305	0.27	0.26	2	No	4	100	Kapla...	No	0.0625	NP (NDs)
Thallium (ug/L)	MW-306	0.27	0.26	2	No	4	100	Kapla...	No	0.0625	NP (NDs)
Thallium (ug/L)	MW-306A	0.26	0.26	2	No	4	100	Kapla...	No	0.0625	NP (NDs)
Thallium (ug/L)	MW-6 (bg)	0.27	0.036	2	No	6	100	Kapla...	No	0.0155	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.05.



Constituent: Arsenic Analysis Run 12/13/2021 10:25 PM

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Confidence Interval

Constituent: Arsenic (ug/L) Analysis Run 12/13/2021 10:26 PM

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
4/16/2018	3.9	30.8		1.2					
4/26/2018									
8/7/2018	4.4	47.6		2.3					
10/8/2018	5.4	50.4		2.3					
4/15/2019	5.4	37		1.4 (J)					
6/20/2019					<0.75 (U)		2.2	8.6	
10/2/2019	5.6	53		2.5	<0.75 (U)		3.4	12	
12/5/2019								9.3	
2/5/2020								9.4	
5/19/2020	3.8			1.4 (J)			3.6	8.5	<0.88 (U)
5/20/2020		33	<0.88 (U)		<0.88 (U)	1.3 (J)			
7/6/2020			<0.88 (U)			<0.88 (U)			<0.88 (U)
10/19/2020	6	48	<0.88 (U)	3.2	<0.88 (U)	<0.88 (U)			
10/20/2020							5.6	10	<0.88 (U)
2/23/2021								9	
4/7/2021									
4/8/2021	5			1.5 (J)					
4/9/2021		33	<0.75 (U)		<0.75 (U)	0.78 (J)	1.7 (J)	8	<0.75 (U)
7/12/2021								8.2	
10/26/2021	7.1			2.2	<0.75 (U)	<0.75 (U)			
10/27/2021		51	<0.75 (U)				3.9	8.6	<0.75 (U)
Mean	5.178	42.64	0.828	2	0.7933	0.918	3.4	9.16	0.828
Std. Dev.	1.05	9.004	0.0712	0.6633	0.06713	0.2214	1.375	1.164	0.0712
Upper Lim.	6.191	51.34	0.88	2.64	0.88	1.231	5.29	10.11	0.88
Lower Lim.	4.164	33.95	0.75	1.36	0.75	0.5127	1.51	8.19	0.75

Confidence Interval

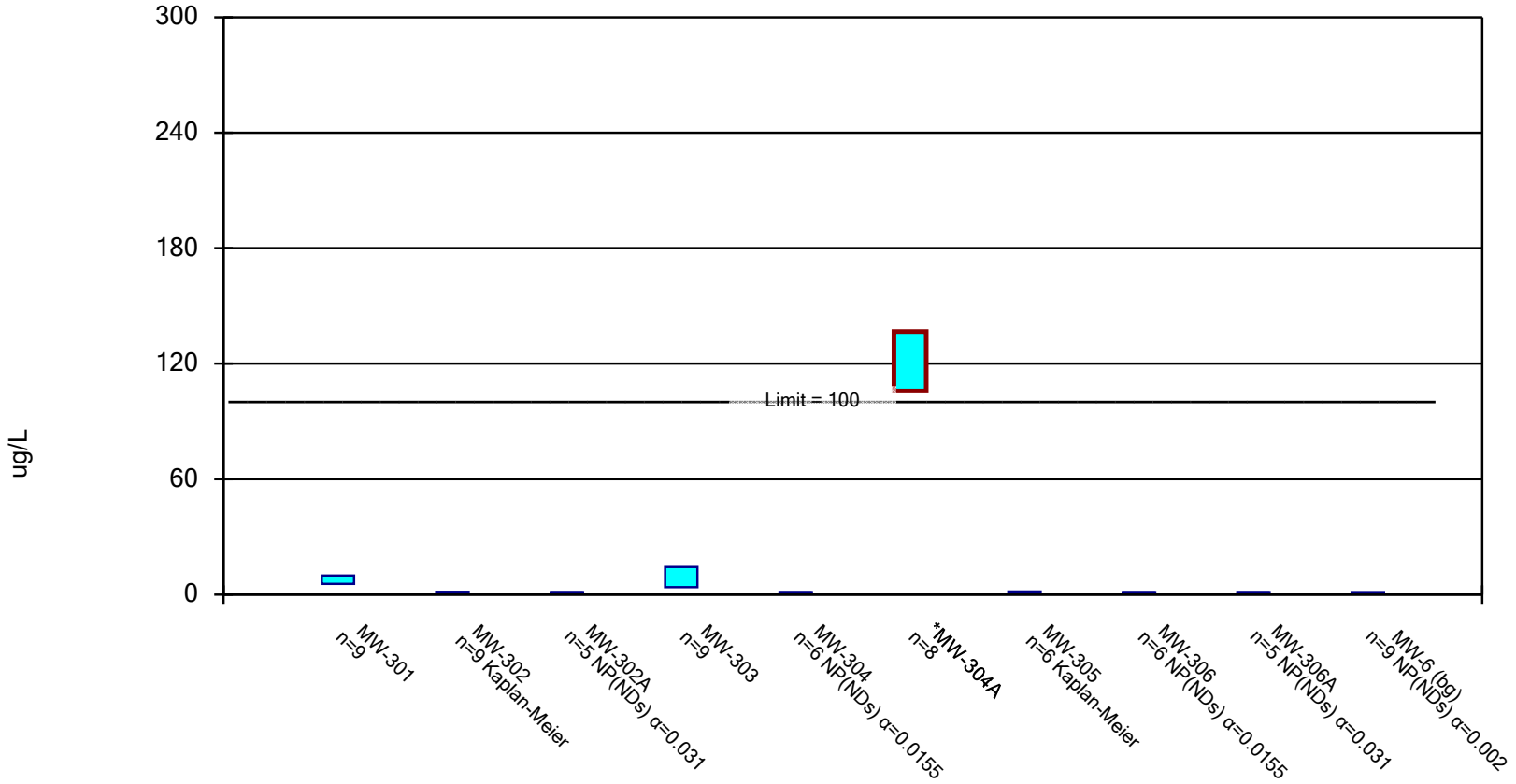
Constituent: Arsenic (ug/L) Analysis Run 12/13/2021 10:26 PM

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
4/16/2018	
4/26/2018	0.23 (J)
8/7/2018	0.26 (J)
10/8/2018	0.24 (J)
4/15/2019	<0.75 (U)
6/20/2019	
10/2/2019	<0.75 (U)
12/5/2019	
2/5/2020	
5/19/2020	
5/20/2020	<0.88 (U)
7/6/2020	
10/19/2020	
10/20/2020	<0.88 (U)
2/23/2021	
4/7/2021	<0.75 (U)
4/8/2021	
4/9/2021	
7/12/2021	
10/26/2021	<0.75 (U)
10/27/2021	
Mean	0.61
Std. Dev.	0.2802
Upper Lim.	0.88
Lower Lim.	0.23

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.05.



Constituent: Molybdenum Analysis Run 12/13/2021 10:25 PM

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Confidence Interval

Constituent: Molybdenum (ug/L) Analysis Run 12/13/2021 10:26 PM

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
4/16/2018	4.4	0.91 (J)		7.3					
4/26/2018									
8/7/2018	5.6	1.2		21.6					
10/8/2018	10.3	1.5		12					
4/15/2019	11	<1.1 (U)		6.2					
6/20/2019					<1.1 (U)		1.7 (J)	<1.1 (U)	
10/2/2019	10	1.4 (J)		9.8	<1.1 (U)		1.6 (J)	<1.1 (U)	
5/19/2020	8.1			3.1			<1.1 (U)	<1.1 (U)	<1.1 (U)
5/20/2020		<1.1 (U)	<1.1 (U)		<1.1 (U)	110			
7/6/2020			<1.1 (U)			140			<1.1 (U)
8/19/2020						140			
10/19/2020	7.5	<1.1 (U)	<1.1 (U)	10	<1.1 (U)	130			
10/20/2020							<1.1 (U)	<1.1 (U)	<1.1 (U)
2/23/2021						120			
4/7/2021									
4/8/2021	6.8			4.8					
4/9/2021		1.7 (J)	<1.3 (U)		<1.3 (U)	110	<1.3 (U)	<1.3 (U)	<1.3 (U)
7/12/2021						100			
10/26/2021	6.2			7.1	<1.3 (U)	120			
10/27/2021		1.4 (J)	<1.3 (U)				<1.3 (U)	<1.3 (U)	<1.3 (U)
Mean	7.767	1.268	1.18	9.1	1.167	121.3	1.35	1.167	1.18
Std. Dev.	2.277	0.2482	0.1095	5.433	0.1033	14.58	0.251	0.1033	0.1095
Upper Lim.	9.965	1.438	1.3	14.35	1.3	136.7	1.642	1.3	1.3
Lower Lim.	5.569	0.8747	1.1	3.855	1.1	105.8	0.925	1.1	1.1

Confidence Interval

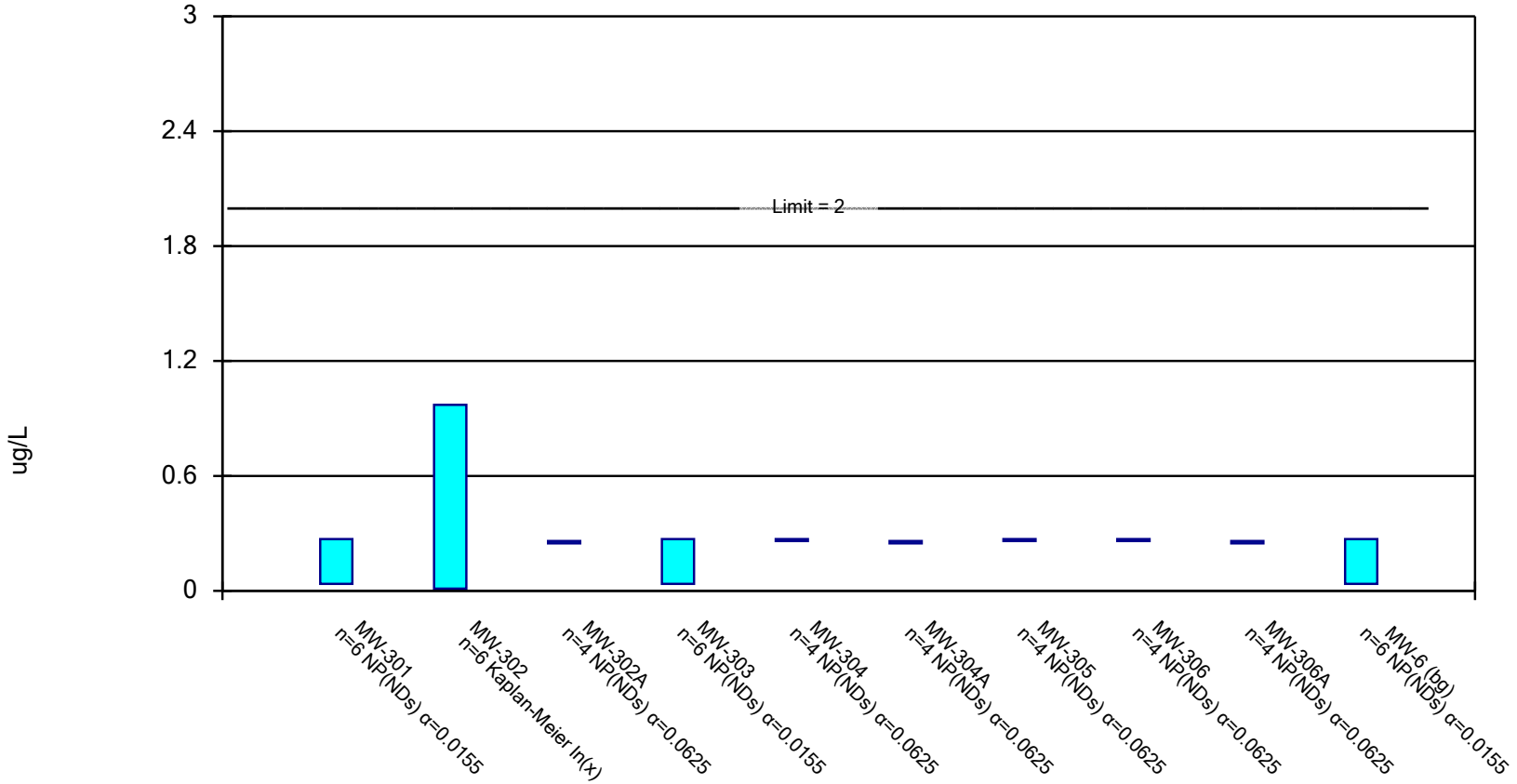
Constituent: Molybdenum (ug/L) Analysis Run 12/13/2021 10:26 PM

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
4/16/2018	
4/26/2018	0.26 (J)
8/7/2018	0.28 (J)
10/8/2018	<0.57 (U)
4/15/2019	<1.1 (U)
6/20/2019	
10/2/2019	<1.1 (U)
5/19/2020	
5/20/2020	<1.1 (U)
7/6/2020	
8/19/2020	
10/19/2020	
10/20/2020	<1.1 (U)
2/23/2021	
4/7/2021	<1.3 (U)
4/8/2021	
4/9/2021	
7/12/2021	
10/26/2021	<1.3 (U)
10/27/2021	
Mean	0.9011
Std. Dev.	0.4158
Upper Lim.	1.3
Lower Lim.	0.26

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.05.



Constituent: Thallium Analysis Run 12/13/2021 10:25 PM

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Confidence Interval

Constituent: Thallium (ug/L) Analysis Run 12/13/2021 10:26 PM

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A	MW-305	MW-306	MW-306A
4/16/2018	<0.036 (U)	<0.036 (U)		<0.036 (U)					
4/26/2018									
10/8/2018	<0.099 (U)	<0.099 (U)		<0.099 (U)					
4/15/2019	<0.27 (U)	<0.27 (U)		<0.27 (U)					
6/20/2019					<0.27 (U)		<0.27 (U)	<0.27 (U)	
5/19/2020	<0.26 (U)			<0.26 (U)			<0.26 (U)	<0.26 (U)	<0.26 (U)
5/20/2020		<0.26 (U)	<0.26 (U)		<0.26 (U)	<0.26 (U)			
7/6/2020			<0.26 (U)			<0.26 (U)			<0.26 (U)
4/7/2021									
4/8/2021	<0.26 (U)			<0.26 (U)					
4/9/2021		2.5 (B)	<0.26 (U)		<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)
10/26/2021	<0.26 (U)			<0.26 (U)	<0.26 (U)	<0.26 (U)			
10/27/2021		0.31 (J)	<0.26 (U)				<0.26 (U)	<0.26 (U)	<0.26 (U)
Mean	0.1975	0.5792	0.26	0.1975	0.2625	0.26	0.2625	0.2625	0.26
Std. Dev.	0.1027	0.9471	0	0.1027	0.005	0	0.005	0.005	0
Upper Lim.	0.27	0.9713	0.26	0.27	0.27	0.26	0.27	0.27	0.26
Lower Lim.	0.036	0.01124	0.26	0.036	0.26	0.26	0.26	0.26	0.26

Confidence Interval

Constituent: Thallium (ug/L) Analysis Run 12/13/2021 10:26 PM

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-6 (bg)
4/16/2018	
4/26/2018	<0.036 (U)
10/8/2018	<0.099 (U)
4/15/2019	<0.27 (U)
6/20/2019	
5/19/2020	
5/20/2020	<0.26 (U)
7/6/2020	
4/7/2021	<0.26 (U)
4/8/2021	
4/9/2021	
10/26/2021	<0.26 (U)
10/27/2021	
Mean	0.1975
Std. Dev.	0.1027
Upper Lim.	0.27
Lower Lim.	0.036

E2 - LCL Evaluation – April 2022

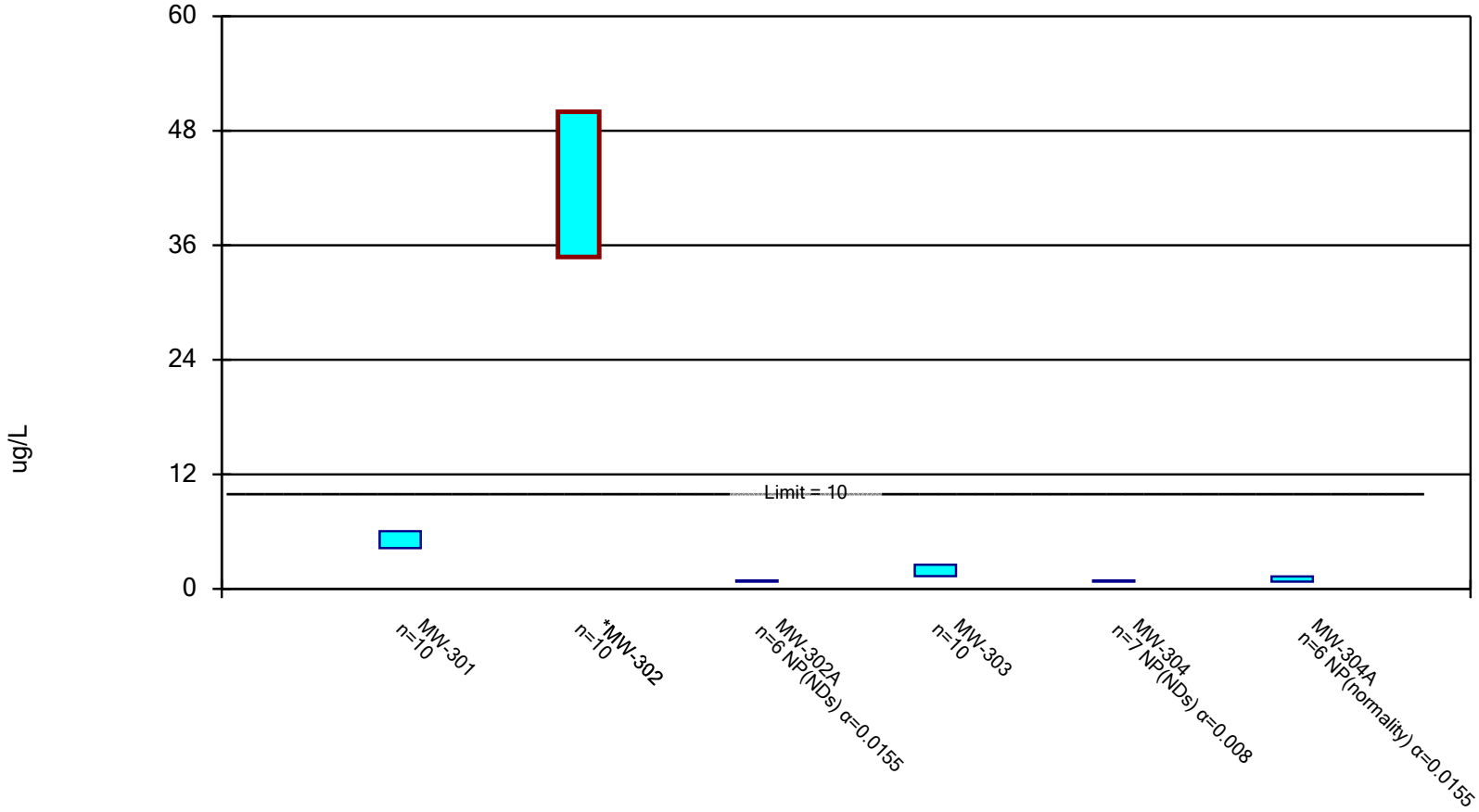
Confidence Interval

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev Printed 7/7/2022, 1:38 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (ug/L)	MW-301	6.037	4.263	10	No	10	0	No	0.01	Param.
Arsenic (ug/L)	**MW-302**	**49.99**	**34.77**	**10**	**Yes**	**10**	**0**	**No**	**0.01**	**Param.**
Arsenic (ug/L)	MW-302A	0.88	0.75	10	No	6	100	No	0.0155	NP (NDs)
Arsenic (ug/L)	MW-303	2.522	1.338	10	No	10	0	No	0.01	Param.
Arsenic (ug/L)	MW-304	0.88	0.75	10	No	7	100	No	0.008	NP (NDs)
Arsenic (ug/L)	MW-304A	1.3	0.75	10	No	6	66.67	No	0.0155	NP (normality)
Arsenic (ug/L)	MW-305	4.911	1.172	10	No	7	0	No	0.01	Param.
Arsenic (ug/L)	MW-306	10.02	8.036	10	No	11	0	No	0.01	Param.
Arsenic (ug/L)	MW-306A	0.88	0.75	10	No	6	100	No	0.0155	NP (NDs)
Arsenic (ug/L)	MW-6 (bg)	0.88	0.24	10	No	10	70	No	0.011	NP (normality)
Arsenic (ug/L)	MW-307	2.918	1.482	10	No	4	0	No	0.01	Param.
Arsenic (ug/L)	MW-307A	2.478	-0.02278	10	No	4	25	No	0.01	Param.
Molybdenum (ug/L)	MW-301	9.666	5.834	100	No	10	0	No	0.01	Param.
Molybdenum (ug/L)	MW-302	1.392	0.8834	100	No	10	40	No	0.01	Param.
Molybdenum (ug/L)	MW-302A	1.3	1.1	100	No	6	100	No	0.0155	NP (NDs)
Molybdenum (ug/L)	MW-303	13.68	4.54	100	No	10	0	No	0.01	Param.
Molybdenum (ug/L)	MW-304	2.7	1.1	100	No	7	85.71	No	0.008	NP (NDs)
Molybdenum (ug/L)	**MW-304A**	**134.3**	**107.9**	**100**	**Yes**	**9**	**0**	**No**	**0.01**	**Param.**
Molybdenum (ug/L)	MW-305	1.554	0.9603	100	No	7	71.43	No	0.01	Param.
Molybdenum (ug/L)	MW-306	1.3	1.1	100	No	7	100	No	0.008	NP (NDs)
Molybdenum (ug/L)	MW-306A	1.3	1.1	100	No	6	100	No	0.0155	NP (NDs)
Molybdenum (ug/L)	MW-6 (bg)	1.3	0.28	100	No	10	80	No	0.011	NP (NDs)
Molybdenum (ug/L)	MW-307	20.98	-0.6314	100	No	4	0	No	0.01	Param.
Molybdenum (ug/L)	MW-307A	7.439	5.261	100	No	4	0	No	0.01	Param.
Thallium (ug/L)	MW-301	0.27	0.036	2	No	7	100	No	0.008	NP (NDs)
Thallium (ug/L)	MW-302	0.5644	0.01427	2	No	7	71.43	ln(x)	0.01	Param.
Thallium (ug/L)	MW-302A	0.26	0.26	2	No	5	100	No	0.031	NP (NDs)
Thallium (ug/L)	MW-303	0.27	0.036	2	No	7	100	No	0.008	NP (NDs)
Thallium (ug/L)	MW-304	0.27	0.26	2	No	5	100	No	0.031	NP (NDs)
Thallium (ug/L)	MW-304A	0.26	0.26	2	No	5	100	No	0.031	NP (NDs)
Thallium (ug/L)	MW-305	0.27	0.26	2	No	5	100	No	0.031	NP (NDs)
Thallium (ug/L)	MW-306	0.27	0.26	2	No	5	100	No	0.031	NP (NDs)
Thallium (ug/L)	MW-306A	0.26	0.26	2	No	5	100	No	0.031	NP (NDs)
Thallium (ug/L)	MW-6 (bg)	0.27	0.036	2	No	7	100	No	0.008	NP (NDs)
Thallium (ug/L)	MW-307	0.26	0.26	2	No	4	100	No	0.0625	NP (NDs)
Thallium (ug/L)	MW-307A	0.26	0.26	2	No	4	100	No	0.0625	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 7/7/2022 1:36 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

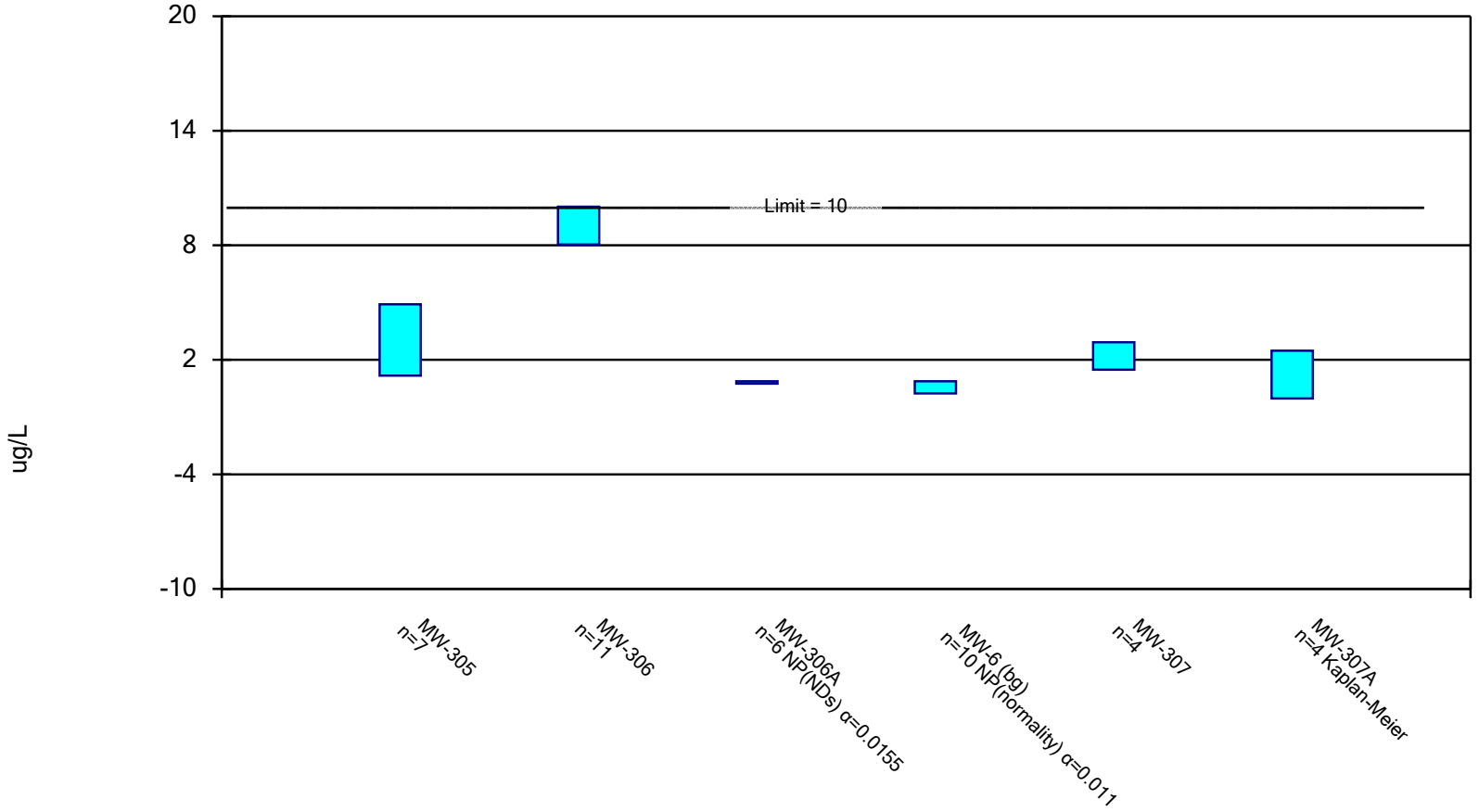
Confidence Interval

Constituent: Arsenic (ug/L) Analysis Run 7/7/2022 1:38 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A
4/16/2018	3.9	30.8		1.2		
8/7/2018	4.4	47.6		2.3		
10/8/2018	5.4	50.4		2.3		
4/15/2019	5.4	37		1.4 (J)		
6/20/2019					<0.75 (U)	
10/2/2019	5.6	53		2.5	<0.75 (U)	
5/19/2020	3.8			1.4 (J)		
5/20/2020		33	<0.88 (U)		<0.88 (U)	1.3 (J)
7/6/2020			<0.88 (U)			<0.88 (U)
10/19/2020	6	48	<0.88 (U)	3.2	<0.88 (U)	<0.88 (U)
4/8/2021	5			1.5 (J)		
4/9/2021		33	<0.75 (U)		<0.75 (U)	0.78 (J)
10/26/2021	7.1			2.2	<0.75 (U)	<0.75 (U)
10/27/2021		51	<0.75 (U)			
4/5/2022	4.9	40	<0.75 (U)	1.3 (J)	<0.75 (U)	<0.75 (U)
Mean	5.15	42.38	0.815	1.93	0.7871	0.89
Std. Dev.	0.9936	8.53	0.0712	0.6634	0.06343	0.2096
Upper Lim.	6.037	49.99	0.88	2.522	0.88	1.3
Lower Lim.	4.263	34.77	0.75	1.338	0.75	0.75

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 7/7/2022 1:36 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

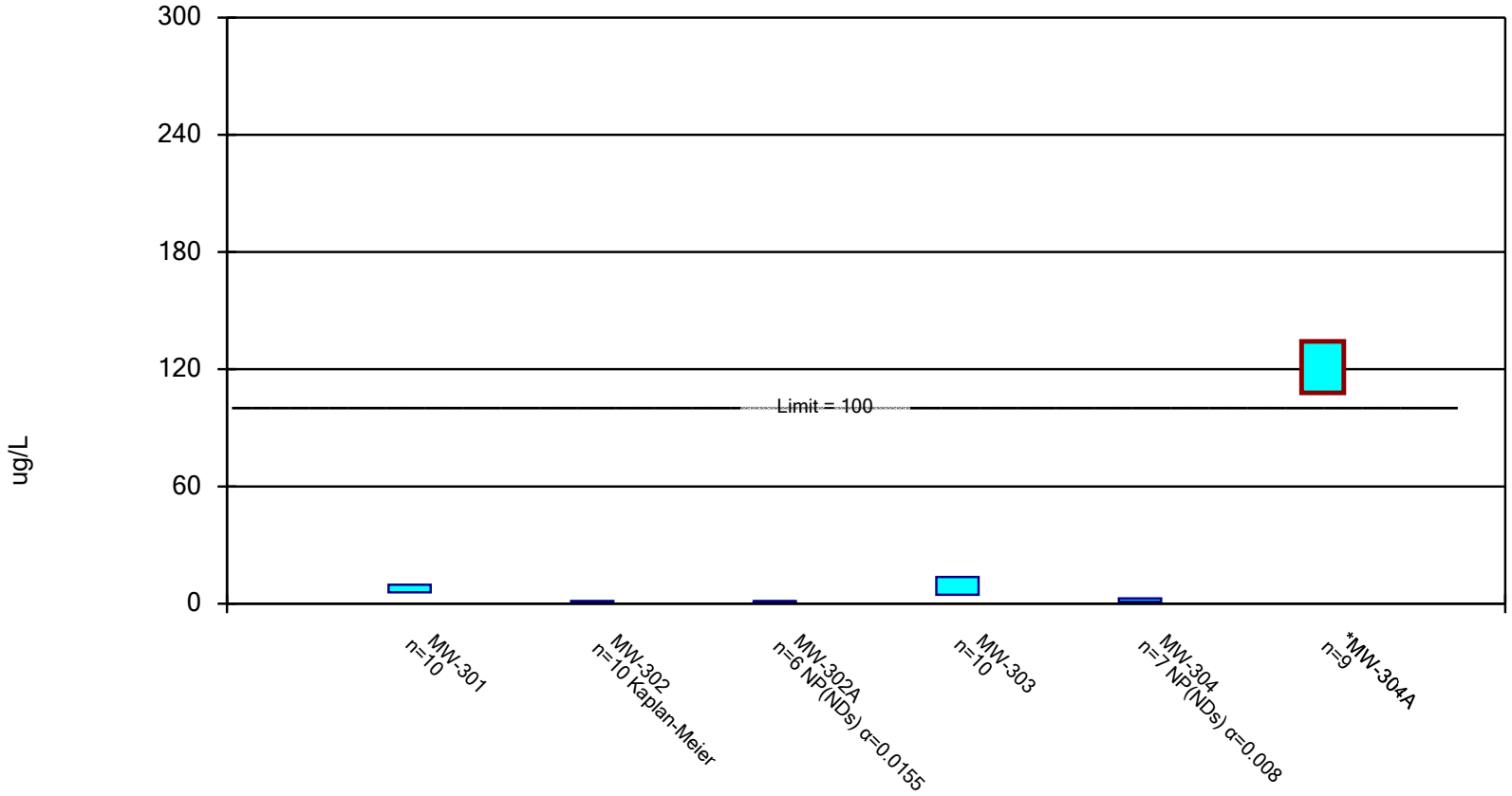
Confidence Interval

Constituent: Arsenic (ug/L) Analysis Run 7/7/2022 1:38 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-305	MW-306	MW-306A	MW-6 (bg)	MW-307	MW-307A
4/26/2018				0.23 (J)		
8/7/2018				0.26 (J)		
10/8/2018				0.24 (J)		
4/15/2019				<0.75 (U)		
6/20/2019	2.2	8.6				
10/2/2019	3.4	12		<0.75 (U)		
12/5/2019		9.3				
2/5/2020		9.4				
5/19/2020	3.6	8.5	<0.88 (U)			
5/20/2020				<0.88 (U)		
7/6/2020			<0.88 (U)			
10/20/2020	5.6	10	<0.88 (U)	<0.88 (U)		
2/23/2021		9				
4/7/2021				<0.75 (U)		
4/9/2021	1.7 (J)	8	<0.75 (U)			
7/12/2021		8.2			2.1	<0.75 (U)
8/13/2021					2.4	0.76 (J)
10/26/2021				<0.75 (U)		
10/27/2021	3.9	8.6	<0.75 (U)		2.5	1.3 (J)
4/4/2022	0.89 (J)	7.7	<0.75 (U)			
4/5/2022					1.8 (J)	2.1
4/6/2022				<0.75 (U)		
Mean	3.041	9.027	0.815	0.624	2.2	1.228
Std. Dev.	1.574	1.189	0.0712	0.2678	0.3162	0.6359
Upper Lim.	4.911	10.02	0.88	0.88	2.918	2.478
Lower Lim.	1.172	8.036	0.75	0.24	1.482	-0.02278

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 7/7/2022 1:36 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

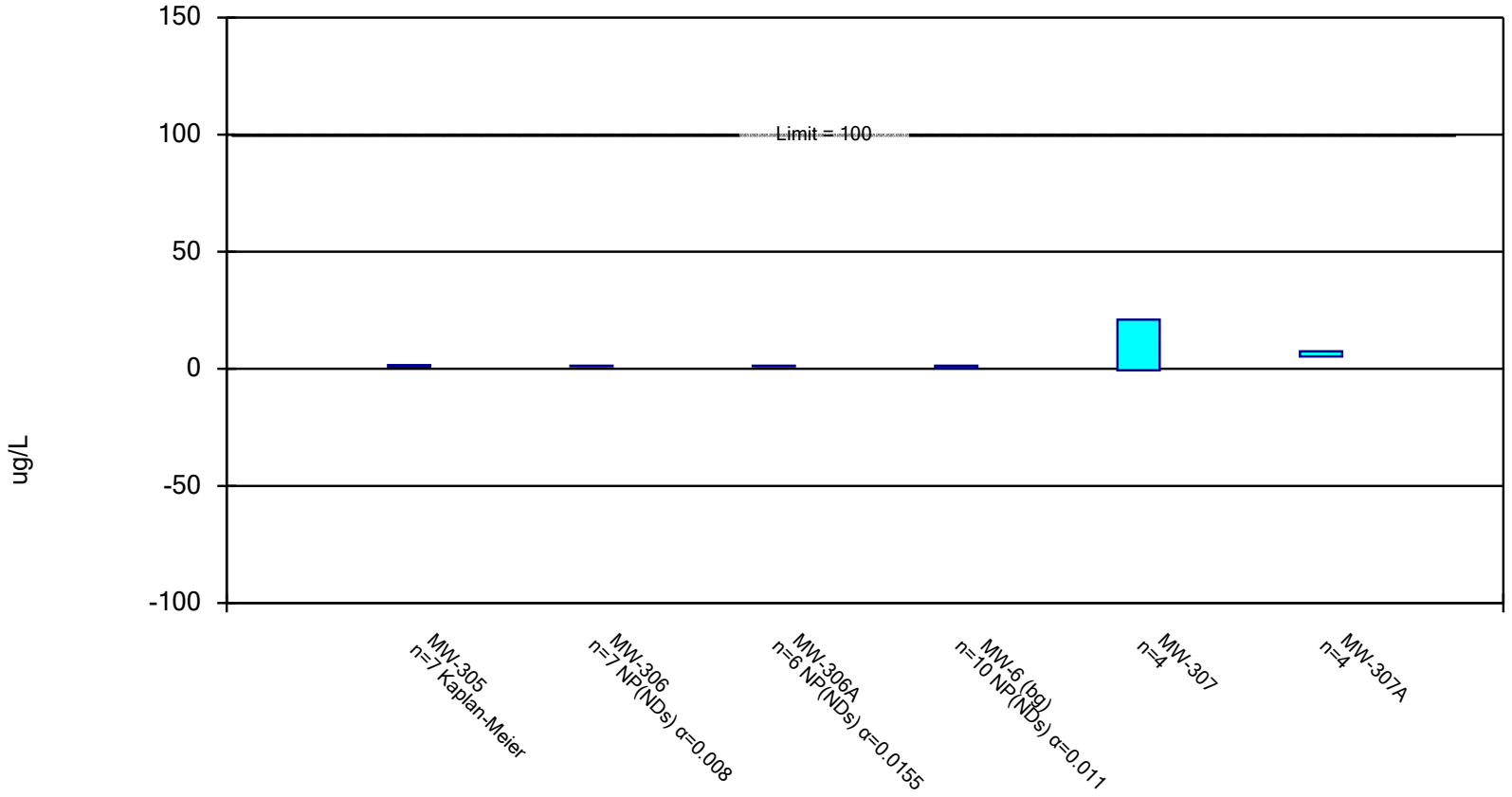
Confidence Interval

Constituent: Molybdenum (ug/L) Analysis Run 7/7/2022 1:38 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A
4/16/2018	4.4	0.91 (J)		7.3		
8/7/2018	5.6	1.2		21.6		
10/8/2018	10.3	1.5		12		
4/15/2019	11	<1.1 (U)		6.2		
6/20/2019					<1.1 (U)	
10/2/2019	10	1.4 (J)		9.8	<1.1 (U)	
5/19/2020	8.1			3.1		
5/20/2020		<1.1 (U)	<1.1 (U)		<1.1 (U)	110
7/6/2020			<1.1 (U)			140
8/19/2020						140
10/19/2020	7.5	<1.1 (U)	<1.1 (U)	10	<1.1 (U)	130
2/23/2021						120
4/8/2021	6.8			4.8		
4/9/2021		1.7 (J)	<1.3 (U)		<1.3 (U)	110
7/12/2021						100
10/26/2021	6.2			7.1	<1.3 (U)	120
10/27/2021		1.4 (J)	<1.3 (U)			
4/5/2022	7.6	<1.2 (U)	<1.2 (U)	9.2	2.7	120
Mean	7.75	1.261	1.183	9.11	1.386	121.1
Std. Dev.	2.147	0.235	0.09832	5.122	0.5872	13.64
Upper Lim.	9.666	1.392	1.3	13.68	2.7	134.3
Lower Lim.	5.834	0.8834	1.1	4.54	1.1	107.9

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 7/7/2022 1:36 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

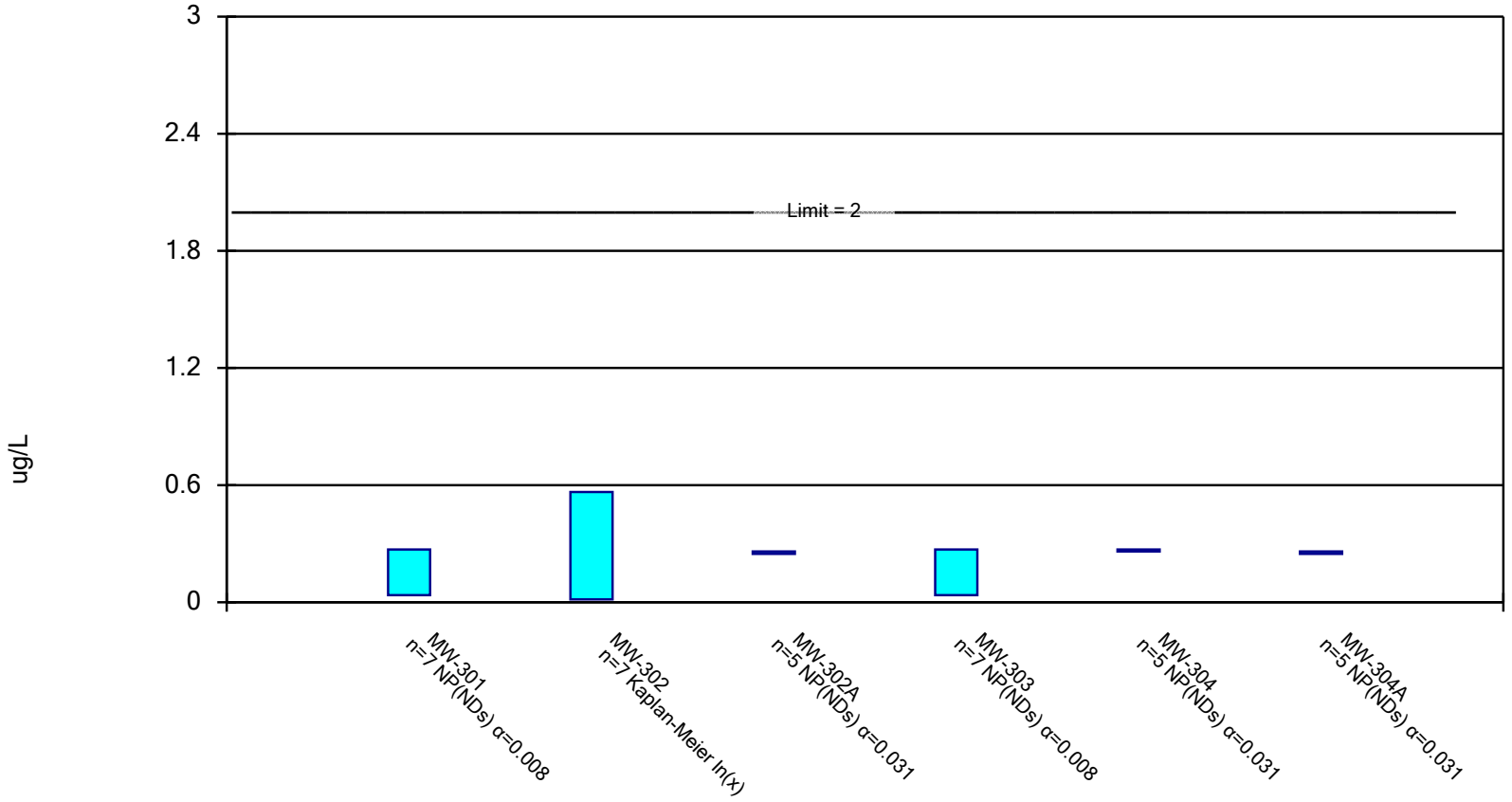
Confidence Interval

Constituent: Molybdenum (ug/L) Analysis Run 7/7/2022 1:38 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-305	MW-306	MW-306A	MW-6 (bg)	MW-307	MW-307A
4/26/2018				0.26 (J)		
8/7/2018				0.28 (J)		
10/8/2018				<0.57 (U)		
4/15/2019				<1.1 (U)		
6/20/2019	1.7 (J)	<1.1 (U)				
10/2/2019	1.6 (J)	<1.1 (U)		<1.1 (U)		
5/19/2020	<1.1 (U)	<1.1 (U)	<1.1 (U)			
5/20/2020				<1.1 (U)		
7/6/2020			<1.1 (U)			
10/20/2020	<1.1 (U)	<1.1 (U)	<1.1 (U)	<1.1 (U)		
4/7/2021				<1.3 (U)		
4/9/2021	<1.3 (U)	<1.3 (U)	<1.3 (U)			
7/12/2021					5.5	6.8
8/13/2021					7.2	6.6
10/26/2021				<1.3 (U)		
10/27/2021	<1.3 (U)	<1.3 (U)	<1.3 (U)		12	6.3
4/4/2022	<1.2 (U)	<1.2 (U)	<1.2 (U)			
4/5/2022					16	5.7
4/6/2022				<1.2 (U)		
Mean	1.329	1.171	1.183	0.931	10.18	6.35
Std. Dev.	0.236	0.09512	0.09832	0.4032	4.76	0.4796
Upper Lim.	1.554	1.3	1.3	1.3	20.98	7.439
Lower Lim.	0.9603	1.1	1.1	0.28	-0.6314	5.261

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Thallium Analysis Run 7/7/2022 1:36 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

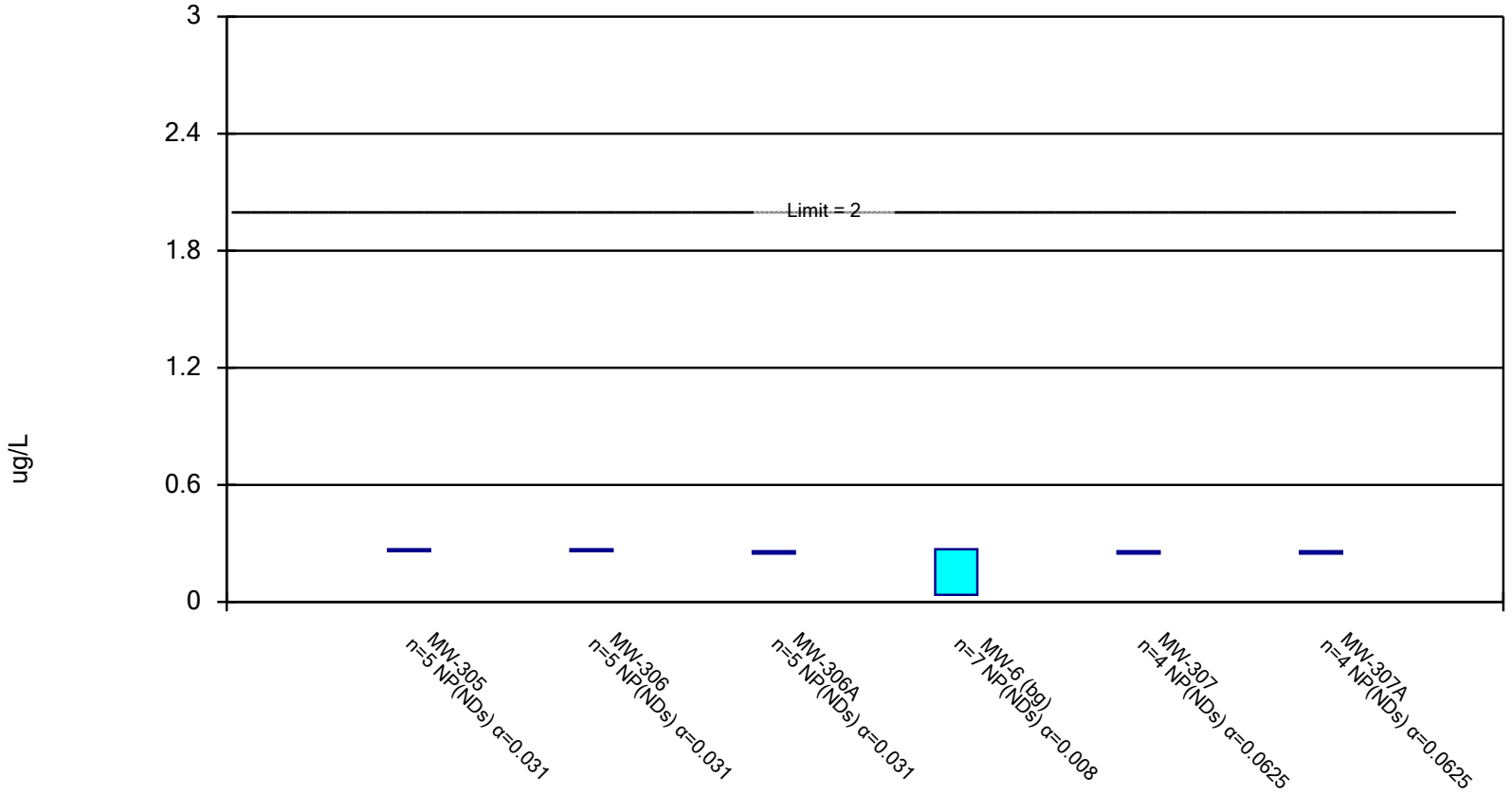
Confidence Interval

Constituent: Thallium (ug/L) Analysis Run 7/7/2022 1:38 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-301	MW-302	MW-302A	MW-303	MW-304	MW-304A
4/16/2018	<0.036 (U)	<0.036 (U)		<0.036 (U)		
10/8/2018	<0.099 (U)	<0.099 (U)		<0.099 (U)		
4/15/2019	<0.27 (U)	<0.27 (U)		<0.27 (U)		
6/20/2019					<0.27 (U)	
5/19/2020	<0.26 (U)			<0.26 (U)		
5/20/2020		<0.26 (U)	<0.26 (U)		<0.26 (U)	<0.26 (U)
7/6/2020			<0.26 (U)			<0.26 (U)
4/8/2021	<0.26 (U)			<0.26 (U)		
4/9/2021		2.5 (B)	<0.26 (U)		<0.26 (U)	<0.26 (U)
10/26/2021	<0.26 (U)			<0.26 (U)	<0.26 (U)	<0.26 (U)
10/27/2021		0.31 (J)	<0.26 (U)			
4/5/2022	<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)	<0.26 (U)
Mean	0.2064	0.5336	0.26	0.2064	0.262	0.26
Std. Dev.	0.0967	0.873	0	0.0967	0.004472	0
Upper Lim.	0.27	0.5644	0.26	0.27	0.27	0.26
Lower Lim.	0.036	0.01427	0.26	0.036	0.26	0.26

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 7/7/2022 1:36 PM View: LAN As Trend

Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

Confidence Interval

Constituent: Thallium (ug/L) Analysis Run 7/7/2022 1:38 PM View: LAN As Trend
Lansing Generating Station Client: SCS Engineers Data: LAN_Export_201121_Rev

	MW-305	MW-306	MW-306A	MW-6 (bg)	MW-307	MW-307A
4/26/2018				<0.036 (U)		
10/8/2018				<0.099 (U)		
4/15/2019				<0.27 (U)		
6/20/2019	<0.27 (U)	<0.27 (U)				
5/19/2020	<0.26 (U)	<0.26 (U)	<0.26 (U)			
5/20/2020				<0.26 (U)		
7/6/2020			<0.26 (U)			
4/7/2021				<0.26 (U)		
4/9/2021	<0.26 (U)	<0.26 (U)	<0.26 (U)			
7/12/2021					<0.26 (U)	<0.26 (U)
8/13/2021					<0.26	<0.26
10/26/2021				<0.26 (U)		
10/27/2021	<0.26 (U)	<0.26 (U)	<0.26 (U)		<0.26 (U)	<0.26 (U)
4/4/2022	<0.26 (U)	<0.26 (U)	<0.26 (U)			
4/5/2022					<0.26 (U)	<0.26 (U)
4/6/2022				<0.26 (U)		
Mean	0.262	0.262	0.26	0.2064	0.26	0.26
Std. Dev.	0.004472	0.004472	0	0.0967	0	0
Upper Lim.	0.27	0.27	0.26	0.27	0.26	0.26
Lower Lim.	0.26	0.26	0.26	0.036	0.26	0.26