

# 2022 Annual Groundwater Monitoring and Corrective Action Report

Prairie Creek Generating Station  
Cedar Rapids, Iowa

Prepared for:

Alliant Energy



**SCS ENGINEERS**

25222074.00 | January 31, 2023

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## OVERVIEW OF CURRENT STATUS

### Prairie Creek Generating Station (PCS) 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 PCS monitors the closure area for 10 former CCR units. Supporting information is provided in the text of the annual report.

Category	Rule Requirement	Site Status
<b>Monitoring Status – Start of Year</b>	(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
<b>Monitoring Status – End of Year</b>	(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
<b>Statistically Significant Increases (SSIs)</b>	(iii) If it was determined that there was a statistically significant increase over background for one or more constituents listed in Appendix III to this part pursuant to §257.94(e):	



Category	Rule Requirement	Site Status
	<p>(A) Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase; and</p>	<p>SSIs initially determined on January 15, 2018, based on October 2017 monitoring results. In 2022, SSIs for semiannual events for compliance wells at the waste boundary included the following; see <b>Table 5</b> for complete results.</p> <p><u>October 2021</u>            Boron: MW-303, MW-304, MW-305, MW-306, MW-307, MW-308            Fluoride: MW-304            Field pH: MW-307, MW-308            Sulfate: MW-303, MW-304, MW-305, MW-306, MW-308            Total Dissolved Solids: MW-305</p> <p><u>February 2022</u>            Field pH: MW-308</p> <p><u>April 2022</u>            Boron: MW-303, MW-304, MW-305, MW-306, MW-307, MW-308            Field pH: MW-307, MW-308            Sulfate: MW-304, MW-305, MW-306, MW-308,            Total Dissolved Solids: MW-304, MW-305</p>
	<p>(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.</p>	<p>July 16, 2018</p>
<p><b>Statistically Significant Levels (SSL) Above Groundwater Protection Standard</b></p>	<p>(iv) If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g) include all of the following:</p> <p>(A) Identify those constituents listed in Appendix IV to this part and the names</p>	<p>Arsenic: Initially determined to be at SSL above GPS on January 14, 2019, at MW-303, MW-304, and MW-305. In 2022,</p>

Category	Rule Requirement	Site Status
	<p>of the monitoring wells associated with such an increase;</p>	<p>concentrations determined to be at SSL above the GPS at compliance wells as follows:</p> <p><u>October 2021</u> MW-303, MW-304, MW-308</p> <p><u>April 2022</u> MW-303, MW-304, MW-308,</p> <p>Molybdenum: Initially determined to be at SSL above GPS on January 14, 2019, at MW-306. In 2022, concentrations determined to be at SSL above the GPS at compliance wells as follows:</p> <p><u>October 2021</u> MW-306</p> <p><u>April 2022</u> MW-306</p>
	(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;	April 15, 2019
	(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and	Selection of remedy in progress. A public meeting date has not been set.
	(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.	<p>September 12, 2019 – Original ACM</p> <p>August 9, 2021 – Addendum No. 1 to ACM</p>
<b>Selection of Remedy</b>	(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	Selection of remedy is in progress
<b>Corrective Action</b>	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Not applicable – Selection of remedy 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 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 Prairie Creek Generating Station (PCS) 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 PCS monitors the closure area for 10 former CCR units. All CCR units at PCS were closed in 2018. CCR was consolidated, capped in accordance with §257.102(d), and closure certification was completed in December 2018.

The monitoring 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 two upgradient background wells, six downgradient compliance monitoring wells at the waste boundary, two supplemental background wells, and five downgradient delineation wells installed to characterize site conditions and evaluate the nature and extent of groundwater impacts (**Figure 2** and **Table 1**). An additional upgradient monitoring well was installed to monitor water level only.

## 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 requirement sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

### 2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

#### 2.1.1 Regional Information

The geologic formation beneath PCS that meets the definition of the “uppermost aquifer,” as defined by section 257.53 of the CCR Rule, is the surficial alluvial aquifer. A summary of regional hydrogeologic units in east-central Iowa is provided in **Appendix A**. The alluvial aquifer comprises Cedar River valley sand, gravel, silt, and clay deposits. This deposit is present along the Cedar River valley and is used for municipal supply by the City of Cedar Rapids approximately 4.5 miles upstream of PCS. A map of the regional surficial aquifers in east-central Iowa is included in **Appendix A**.

The alluvial aquifer is underlain by Devonian and Silurian limestone and dolomite bedrock. A bedrock geology map and cross sections of the area are provided in **Appendix A**. The Devonian and Silurian bedrock are also aquifer units and are likely hydraulically connected to the alluvial aquifer above. The Silurian limestone is several hundred feet thick at the site and is underlain by an Ordovician confining unit.

## 2.1.2 Site Information

Monitoring wells MW-301 through MW-310 were installed to intersect the surficial alluvium aquifer at the site. The unconsolidated materials at these well locations are generally sand and silt with minor clay and gravel. The total boring depths were between 15.5 and 30.5 feet and bedrock was not encountered in any monitoring well boring. Boring logs and well construction forms for MW-301 through MW-310 are included in **Appendix B**.

Assessment piezometers MW-301A, MW-306A, MW-309A, and MW-310A were installed in June and July 2020. Unconsolidated materials were also observed in the deeper piezometer borings and bedrock was not encountered. The boring for upgradient piezometer MW-301A encountered a thick lean clay layer and the well is screened within the clay. The other three piezometers are screened in sandy materials. The total boring depths were between 45 and 60 feet. Boring logs and well construction forms for the four deeper piezometers are included in **Appendix B**.

Sidegradient supplemental background monitoring well MW-312 and groundwater elevation-only well MW-311 were installed in May 2022. The unconsolidated materials at these well locations are generally sand and silt. Wells are screened predominantly in sand. Total boring depths are 16 to 20 feet. Boring logs and well construction forms for MW-311 and MW-312 are included in **Appendix B**.

The sampling event summary and groundwater elevation data for the CCR monitoring wells are included in **Table 2** and **Table 3**. Water table elevations and groundwater flow patterns for the April, May, July, and October 2022 monitoring events are shown on **Figures 3, 4, 5, and 6**, respectively. All four water table maps show groundwater flow moving north toward Prairie Creek, which is a tributary of the Cedar River.

Estimated horizontal gradients and flow velocities are provided in **Table 4A**. Vertical hydraulic gradients for the well nests are provided in **Table 4B**. For the April 2022 event, the vertical gradients indicate upward flow at the MW-306/MW-306A and MW-310/MW-310A nests and downward flow at the MW-301/MW-301A and MW-309/MW-309A nests. For the May, July, and October 2022 events, vertical gradients indicate upward flow at MW-306/MW-306A, MW-309/MW-309A, and MW-310/MW-310A nests and downward flow at the MW-301/MW-301A nest.

## 2.2 CCR RULE MONITORING SYSTEM

The current groundwater monitoring system established in accordance with the CCR Rule consists of two upgradient (background) monitoring wells, one upgradient piezometer, one sidegradient supplemental background monitoring well, six downgradient compliance monitoring wells, and five additional downgradient monitoring wells and piezometers to assist with the assessment monitoring and selection of remedy process. The background wells are MW-301 and MW-302, and the six downgradient wells at the waste boundary include MW-303, MW-304, MW-305, MW-306, MW-307, and MW-308. An additional monitoring well, MW-311, was installed to provide information on water level elevations only and is not part of the compliance monitoring network. Monitoring well MW-312 was installed as a sidegradient, supplemental background well to provide groundwater quality information in the Prairie Creek valley.

The shallow downgradient delineation monitoring wells include MW-309 and MW-310. The deeper downgradient piezometers include MW-306A, MW-309A, and MW-310A. The upgradient piezometer, MW-301A, was also installed to assist with the selection of remedy process.

The CCR Rule wells are installed in the alluvial aquifer, which is the uppermost aquifer unit. Shallow monitoring well depths range from approximately 15 to 32 feet, measured from the top of the well casing. The piezometer depths range from approximately 47 to 62 feet, measured from top of well casing. Upgradient piezometer MW-301A is installed in a clay till unit below the alluvial aquifer. This well is not used in the statistical evaluation of background conditions because it is not installed in the same hydrostratigraphic unit as the downgradient wells.

### **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 showing the site location is provided on **Figure 1**. A map with an aerial image showing the closure area, former CCR units, and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided as **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;*

Monitoring wells MW-311 and MW-312 were installed in September 2022. MW-311 was installed to provide additional information about the water table elevation in the vicinity of the former impoundments. MW-312 was installed to provide additional information about groundwater quality close to Prairie Creek and upstream of MW-309 and MW-310.

#### **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;*



Five groundwater sampling events were completed in 2022. One supplemental monitoring event occurred in February 2022 at compliance well MW-308 to further evaluate the statistical significance of an increase over the Groundwater Protection Standards (GPS) for lithium. A semiannual groundwater monitoring was completed in April 2022. Two additional supplemental monitoring events in May and July 2022 were completed at supplemental background well MW-312 to evaluate arsenic and molybdenum concentrations. The fifth event was the semiannual groundwater sampling event for all wells in October 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 validation and evaluation of the April 2022 monitoring event data was completed and transmitted to IPL on July 28, 2022. The validation and evaluation of the February, May, and July supplemental monitoring event data was also completed and transmitted to IPL in 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.

Groundwater samples collected in the April semiannual event were analyzed for both Appendix III and Appendix IV constituents, as shown in **Table 5**. The supplemental groundwater sample from MW-308 collected during the February 2022 monitoring event was analyzed for field pH and submitted to a laboratory for lithium analysis. The supplemental groundwater sample from MW-312 collected during the May 2022 supplemental monitoring event was analyzed for field pH and submitted to a laboratory for arsenic and molybdenum. Because molybdenum did not exceed the GPS during the May 2022 supplemental sampling event at MW-312, the sample collected during the July 2022 supplemental sampling event was analyzed for only field pH and arsenic. Field parameter results for the February through July 2022 sampling events are provided in **Table 6**. The results of the analytical laboratory analyses are provided in the February, April, May, and July 2022 laboratory reports in **Appendix C**. Historical results for each monitoring well through July 2022 are summarized in **Appendix D**.

Supplemental groundwater quality parameters were included in the monitoring program in 2022 to support the selection of remedy process, including the characterization of aquifer conditions and evaluation of monitored natural attenuation (MNA). The results for the supplemental parameters are also included in **Table 5**, and in the laboratory reports in **Appendix C**.

### **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 PCS 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 PCS CCR units in April 2019 and completed in September 2019. An addendum to the ACM was submitted August 9, 2021. The ACM was initiated in response to the detection of arsenic and molybdenum at statistically significant levels (SSLs) exceeding the GPS. Assessment monitoring continued during the ACM and will continue during the selection of remedy.

The evaluation of the October 2021 assessment monitoring results was completed in January 2022. Evaluation of the February 2022 results was completed in June 2022. Evaluation of the April and May 2022 results was completed in July 2022. Evaluation of July 2022 results was completed in November 2022. Evaluation of October 2022 results will be completed in February 2023.

Appendix IV parameters arsenic and molybdenum were detected at SSLs 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. The evaluation of significance of the GPS exceedances for lithium, arsenic, and molybdenum is discussed below.

In accordance with the Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities (U.S. EPA, 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 each Appendix IV parameter that has been detected at a concentration exceeding the GPS in at least one sample result since assessment monitoring was initiated, which include arsenic, molybdenum, and lithium. The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring began in April 2018. The LCL evaluations completed for the evaluation of the October 2021, and February and April 2022 monitoring events are provided in **Appendix E**.

Based on the LCL evaluations completed following the February and April 2022 events, SSLs above the GPS were identified for the following parameters and wells:

- Arsenic:
  - Compliance wells MW-303, MW-304, MW-308
  - Delineation wells MW-309, and MW-310
- Lithium: None
- Molybdenum:
  - Compliance well MW-306

The SSLs for arsenic at MW-303, MW-304, MW-308, MW-309, and MW-310 and for molybdenum at MW-306 are consistent with previous SSL determinations. Lithium was detected above the GPS in the April 2022 sample from MW-308, but was below the GPS in the February 2022 monitoring event. The LCL for lithium at MW-308 remains below the GPS according to the statistical analyses provided in **Appendix E**.

### **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.

### 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 selection of remedy process, with assessment monitoring continuing.

#### **Summary of Key Actions Completed.**

- Received Iowa Department of Natural Resources approval of joint permit for monitoring well installations within a floodplain (January 2022)
- Completed statistical evaluation for the October 2021 assessment monitoring event and prepared groundwater monitoring results letter (January 18, 2022).
- Prepared City floodplain permit application, City right-of-way permit application, and County monitoring well installation permit applications (February 2022).
- Completed additional monitoring event in February 2022 to collect a supplemental sample at compliance well MW-308 for lithium analysis to support the evaluation of whether lithium is present at this well at a SSL above the GPS.
- Completed two semiannual groundwater sampling and analysis events (April and October 2022).
- Installed water table observation well MW-311 and supplemental background monitoring well MW-312 (May 2022).
- Completed additional monitoring event in May 2022 to sample supplemental background well MW-312 for molybdenum and arsenic analysis to support the evaluation of nature and extent for these parameters.
- Completed additional monitoring event in July 2022 to sample the supplemental background well MW-312 for arsenic analysis to support the evaluation of nature and extent for arsenic.
- Completed statistical evaluation for the February 2022 supplemental monitoring event and prepared groundwater monitoring results letter (June 8, 2022).
- Completed statistical evaluation for the April and May 2022 monitoring events and prepared groundwater monitoring results letter (July 29, 2022).
- Completed Documentation Report for monitoring wells installed in May 2022 (MW-311 and MW-312) (August 2022).
- Installed first of 16 creek bed mini-piezometers in Prairie Creek (August 2022).

- Negotiated access with railroad company to performed proposed shallow soil and groundwater sampling adjacent to Prairie Creek to the west of the closed impoundments (August 2022).
- Performed stepped pumping test at monitoring well MW-306 and collected groundwater samples at multiple intervals throughout the pumping test (September 2022).
- Collected hand boring soil samples, creek sediment samples, and Prairie Creek surface water samples west of the impoundments for analysis and evaluation of background arsenic concentrations in the creek valley soils, sediments, and surface water.
- Prepared semiannual progress reports for the Selection of Remedy process (March and September 2022).
- Completed the installation of the remaining 15 mini-piezometers in the creek bed of Prairie Creek. Performed first round of groundwater sampling from the 16 creek bed mini-piezometers (October 2022).
- Completed evaluation for the July 2022 supplemental monitoring event and prepared groundwater monitoring results letter (November 2, 2022).
- Collected additional soil and creek sediment samples from the Prairie Creek valley west of the impoundments. Also collected second round of groundwater samples from the mini piezometers in the creek bed (November 2022).
- Continued work on the selection of remedy in accordance with § 257.97.

#### **Description of Any Problems Encountered.**

- Review of the water level measurements collected in October 2022 indicated that the water level measurement for MW-301 was likely in error. The reported elevation was approximately 10 feet higher than expected based on historical results and levels at other wells.
- The April 2022 field dissolved oxygen value recorded for MW-301A was determined to be invalid during data review (higher than possible range).

#### **Discussion of Actions to Resolve the Problems.**

- The October 2022 water level measurement was flagged in **Table 3** and on **Figure 6** as a likely invalid result and was not used in development of the October 2022 water table contour map. The water level at MW-301 will be measured again in 2023.
- The April 2022 dissolved oxygen value recorded for MW-301A was not reported because it was not a valid result. Removing this result for this supplemental background well does not affect the determination of compliance or evaluation of site conditions.

#### **Projection of Key Activities for the Upcoming Year (2023):**

- Collect third round of groundwater samples from the 16 creek bed mini-piezometers (January 2023).
- Collect creek sediment cores at 6 locations adjacent to the mini-piezometer nests in Prairie Creek (January 2023).
- Perform laboratory analysis for arsenic and molybdenum in soil, sediment, and groundwater samples. Also perform XRF and XRD total compositional analysis of soil and sediment samples for arsenic and molybdenum (January 2023).
- Evaluate soil, sediment, surface water, and groundwater results. Perform pumping test data evaluation. Update conceptual model of arsenic and molybdenum geochemistry at the site (January and February 2023).
- Complete two semiannual assessment monitoring events (April and October 2023).
- Complete statistical evaluation and determination of any SSLs exceeding the GPS and prepare groundwater monitoring results letters for the October 2022 and April 2023 monitoring events (February and August 2023).
- Continue work on the selection of remedy in accordance with § 257.97.

### **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 PCS closure area is 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 PCS closure area is 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 upper prediction limits (UPLs), and GPSs established for PCS 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 selection of remedy process, including the evaluation of MNA. The results for the supplemental parameters are included in **Table 5** and in the laboratory reports in **Appendix C**.

### **3.5.6 § 257.95(d)(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.*

Not applicable. No alternative source demonstration for assessment monitoring was 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, demonstrating 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.

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

## Tables

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**Table 1. Groundwater Monitoring Well Network  
Prairie Creek Generating Station  
SCS Engineers Project #25222074.00**

<b>Monitoring Well</b>	<b>Location in Monitoring Network</b>	<b>Role in Monitoring Network</b>
MW-301	Upgradient	Background
MW-301A	Upgradient, deeper	Supplemental Background
MW-302	Upgradient	Background
MW-303	Downgradient	Compliance
MW-304	Downgradient	Compliance
MW-305	Downgradient	Compliance
MW-306	Downgradient	Compliance
MW-306A	Downgradient, deeper	Delineation
MW-307	Downgradient	Compliance
MW-308	Downgradient	Compliance
MW-309	Downgradient	Delineation
MW-309A	Downgradient, deeper	Delineation
MW-310	Downgradient	Delineation
MW-310A	Downgradient, deeper	Delineation
MW-311	Upgradient	Water level only
MW-312	Downgradient, sidegradient	Supplemental Background

Created by: RM  
by: NDK  
Checked by: RM

Date: 12/14/2020  
Date: 9/29/2022  
Date: 12/21/2022

**Table 2. CCR Rule Groundwater Samples Summary  
Prairie Creek Generating Station  
SCS Engineers Project #25222074.00**

Sample Dates	Background Well	Supplemental Background Well	Background Well	Compliance Wells				Delineation Well	Compliance Wells		Delineation Wells				Supplemental Background Well
	MW-301	MW-301A	MW-302	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A	MW-310	MW-310A	MW-312
2/22/2022	--	--	--	--	--	--	--	--	--	A-S	--	--	--	--	NI
4/25-29/2022	A	A	A	A	A	A	A	A	A	A	A	A	A	A	NI
5/25/2022	--	--	--	--	--	--	--	--	--	--	--	--	--	--	A-S
7/15/2022	--	--	--	--	--	--	--	--	--	--	--	--	--	--	A-S
10/12-13/2022	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Total Samples	2	2	2	2	2	2	2	2	2	3	2	2	2	2	3

Abbreviations:

A = Assessment Monitoring Program  
A-S = Assessment Monitoring Program Supplemental Sampling Event  
NI = Not Installed  
-- = Not Sampled

Notes:

1. MW-311 was installed in May 2022 and is used as a water level only well

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

Date: 1/4/2018  
Date: 12/20/2022  
Date: 12/23/2022

**Table 3. Groundwater Elevation Summary**  
**IPL - Prairie Creek / SCS Engineers Project #25222074.00**

Ground Water Elevation in feet above mean sea level (amsl)																
Well Number	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309	MW-310	MW-301A	MW-306A	MW-309A	MW-310A	MW-311	MW-312
<b>Top of Casing Elevation (feet amsl)</b>	732.55	722.68	709.46	709.66	709.61	712.54	721.16	719.67	711.80	711.93	732.07	711.50	710.54	710.68	724.36	711.60
<b>Screen Length (ft)</b>	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0		
<b>Total Depth (ft from top of casing)</b>	25.10	17.39	17.01	17.09	17.00	31.91	23.27	23.21	15.00	15.00	56.15	61.85	47.31	47.47		
<b>Top of Well Screen Elevation (ft)</b>	717.45	715.29	702.45	702.57	702.61	685.63	707.89	706.46	703.11	703.09	680.92	654.65	668.23	668.21		
<b>Measurement Date</b>																
December 20, 2016	716.05	715.80	703.36	703.42	703.46	703.32	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
January 23, 2017	716.05	716.18	704.64	704.56	704.59	704.49	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
February 23, 2017	715.87	715.96	704.46	704.65	704.67	704.59	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
March 28, 2017	715.80	715.86	703.81	703.99	704.09	703.99	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 27, 2017	716.70	716.48	705.07	705.08	705.04	704.98	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 25, 2017	717.08	716.68	705.37	705.37	705.29	705.34	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
June 28, 2017	716.10	715.63	703.96	704.16	704.11	703.94	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
August 17, 2017	715.35	714.88	702.83	702.96	702.91	702.74	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 17, 2017	714.36	714.33	702.95	703.17	703.21	703.16	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
May 8, 2018	713.95	713.94	705.36	705.54	705.61	705.51	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
August 6, 2018	714.30	714.24	702.64	702.62	702.56	702.68	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
October 9, 2018	715.74	717.13	707.86	707.81	707.73	707.88	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
March 11, 2019	NM	NM	NM	704.24	704.05	NM	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
April 22-23, 2019	716.44	716.10	703.83	703.93	703.93	704.23	709.86	706.19	NI	NI	NI	NI	NI	NI	NI	NI
October 28-29, 2019	715.86	715.68	704.10	704.15	704.17	704.40	708.57	706.31	703.84	703.71	NI	NI	NI	NI	NI	NI
January 9, 2020	NM	NM	NM	NM	NM	NM	NM	NM	703.10	702.81	NI	NI	NI	NI	NI	NI
April 27, 2020	715.80	715.58	703.10	702.84	703.02	703.35	NM	NM	702.84	702.53	NI	NI	NI	NI	NI	NI
May 27, 2020	NM	NM	NM	NM	NM	NM	708.14	705.64	NM	NM	NI	NI	NI	NI	NI	NI
September 14, 2020	715.30	715.57	703.70	703.74	703.74	703.84	708.75	706.13	703.28	702.83	694.12	704.03	703.63	703.43	NI	NI
October 19-21, 2020	714.77	714.16	702.16	702.13	702.02	702.26	706.56	703.87	701.97	701.78	704.32	702.43	702.17	702.00	NI	NI
April 26-27, 2021	715.84	715.36	702.75	702.80	702.66	702.75	706.38	705.05	702.68	702.11	716.76	703.63	702.92	702.69	NI	NI
July 14, 2021	NM	NM	NM	NM	NM	NM	NM	703.38	NM	NM	NM	NM	NM	NM	NI	NI
October 20-22, 2021	713.44	713.09	701.84	701.80	701.75	702.02	706.29	703.21	701.70	701.48	707.07	702.31	701.60	701.76	NI	NI
February 22, 2022	NM	NM	NM	NM	NM	NM	NM	702.84	NM	NM	NM	NM	NM	NM	NI	NI
April 25-27, 2022	714.50	715.27	703.85	703.82	703.76	704.02	708.27	705.45	703.56	703.33	707.77	704.16	702.93	703.68	NI	NI
May 25, 2022	714.57	714.12	702.96	702.95	702.88	703.23	707.55	704.83	702.86	702.60	703.71	703.47	703.08	702.92	709.86	703.52
July 15, 2022	714.26	713.81	703.17	703.27	703.23	703.53	709.27	705.26	703.04	702.82	707.97	703.72	703.30	703.19	710.01	703.80
October 10-12, 2022	722.08*	712.56	701.93	701.86	701.73	701.97	705.32	702.60	702.08	701.73	706.76	702.18	702.12	701.92	707.83	702.85
<b>Bottom of Well Elevation (ft)</b>	707.45	705.29	692.45	692.57	692.61	680.63	697.89	696.46	693.11	693.09	675.92	649.65	663.23	663.21		

**Note:**  
 \* = Water level measurement for MW-301 appears to be in error (10 feet high), but this could not be confirmed. Not used in contouring.

Created by: <u>MDB</u>	Date: <u>5/1/2017</u>
Last rev. by: <u>NAS</u>	Date: <u>10/19/2022</u>
Checked by: <u>MDB</u>	Date: <u>10/21/2022</u>

**Table 4A. Horizontal Gradients and Flow Velocities  
Prairie Creek Generating Station  
SCS Engineers Project #25222074.00**

Flow Path A - Northwest					
Sampling Dates	h1 (ft)	h2 (ft)	Δl (ft)	Δh/Δl (ft/ft)	V (ft/d)
April 25-27, 2022	710.00	703.33	830.79	0.008	1.5
May 25, 2022	710.00	702.60	740.19	0.010	1.9
July 15, 2022	710.00	702.82	725.29	0.010	1.9
October 10-12, 2022	708.00	701.73	723.13	0.009	1.7

Wells	K Value (cm/sec)	K Value (ft/d)	Assumed Porosity, n
MW-301	N/A	N/A	
MW-301A	N/A	N/A	
MW-302	N/A	N/A	
MW-303	1.2E-02	34	
MW-304	1.3E-02	36	
MW-305	1.6E-01	439	
MW-306	5.0E-02	141	
MW-306A	1.2E-02	35	
MW-307	1.8E-02	50	
MW-308	5.3E-03	15	
MW-309	5.0E-02	142	
MW-309A	1.1E-01	303	
MW-310	1.7E-02	47	
MW-310A	5.1E-02	145	
Geometric Mean	2.7E-02	77	

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

Notes:

1. Geometric mean calculation does not include upgradient wells MW-301, MW-301A, or MW-302.
2. See Figures 3, 4, 5, and 6 for velocity calculation flow path locations.

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

Created by: NDK  
Last revision by: JJK  
Checked by: BLR

Date: 9/29/2022  
Date: 12/1/2022  
Date: 1/5/2023

**Table 4B. Vertical Gradients  
Prairie Creek Generating Station / SCS Engineers Project #25222074.00  
2022**

Vertical Hydraulic Gradients	MW-301/MW-301A		MW-306/MW-306A		MW-309/MW-309A		MW-310/MW-310A	
	Shallow Well Screen midpoint <sup>(2)</sup> (feet amsl)	MW-301 712.45		MW-306 683.13		MW-309 698.11		MW-310 698.09
Deep Well Screen midpoint (feet amsl)	MW-301A 678.42		MW-306A 652.15		MW-309A 665.73		MW-310A 665.71	
Measurement Date	Distance Between Midpoints <sup>(2)</sup> (ft)	Vertical Gradient (ft/ft)	Distance Between Midpoints (ft)	Vertical Gradient (ft/ft)	Distance Between Midpoints <sup>(2)</sup> (ft)	Vertical Gradient (ft/ft)	Distance Between Midpoints <sup>(2)</sup> (ft)	Vertical Gradient (ft/ft)
April 25-27, 2022	32.6	-0.207	31.0	0.005	32.4	-0.019	32.4	0.011
May 25, 2022	32.6	-0.333	31.0	0.008	32.3	0.007	32.1	0.010
July 15, 2022	32.4	-0.194	31.0	0.006	32.3	0.008	32.2	0.011
October 10-12, 2022	34.0	--	31.0	0.007	31.9	0.001	31.7	0.006

-- = The October 10-12, 2022 water level measurement for MW-301 appears to be in error (10 feet high), but this could not be confirmed. Therefore, the gradient was not calculated.

**Notes:**

- 1: A positive vertical gradient indicates upward groundwater flow. A negative gradient indicates downward flow.
- 2: The well screens at MW-309 and MW-310 were not fully submerged during the May, July, and October 2022 sampling events, and at MW-301 during the April, May, and July 2022 sampling events. In these cases, the effective screen midpoint is calculated at the midpoint between the water table elevation and screen bottom elevation, and this value is used to calculate Distance Between Midpoints.

Created by: RM  
 Last rev. by: RM  
 Checked by: MDB  
 Proj Mgr QA/QC: TK

Date: 1/18/2021  
 Date: 1/5/2023  
 Date: 1/16/2023  
 Date: 1/19/2023

**Table 5. Groundwater Analytical Summary - 2022**  
**Prairie Creek Generating Station, Cedar Rapids, IA / SCS Engineers Project #25222074.00**

Parameter Name	UPL Method	UPL	GPS	Background Well	Supplemental Background Well	Background Well	Compliance Wells				Delineation Well	Compliance Wells			Delineation Wells				Supplemental Background Well	
				MW-301	MW-301A	MW-302	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307	MW-308		MW-309	MW-309A	MW-310	MW-310A	MW-312	
				4/25/2022	4/29/2022	4/25/2022	4/26/2022	4/26/2022	4/26/2022	4/26/2022	4/26/2022	4/26/2022	4/25/2022	2/22/2022	4/25/2022	4/27/2022	4/26/2022	4/27/2022	4/27/2022	5/25/2022
<b>Appendix III</b>																				
Boron, ug/L	P	67		<58	74 J	100	850	740	890	2,100	2,200	650	--	4,300	970	830	860	250	--	--
Calcium, mg/L	NP	148		180	68	65	110	140	140	55	150	27	--	76	130	120	120	140	--	--
Chloride, mg/L	P	36.7		85	<2.3	7.2	11	10	13	17	62	31	--	8.3	14	25	22	43	--	--
Fluoride, mg/L	P*	0.23		<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	--	--
Field pH, Std. Units	NP	8.00		6.92	6.94	5.35	7.07	7.00	7.10	7.55	7.21	9.47	8.99	9.22	7.24	7.18	7.30	7.25	6.90	6.97
Sulfate, mg/L	NP	108		89	4.8 J	140	100	160	280	110	320	36	--	170	95	120	140	140	--	--
Total Dissolved Solids, mg/L	NP	642		680	230	340	490	660	740	330	780	100	--	400	530	490	530	570	--	--
<b>Appendix IV</b>																				
Antimony, ug/L	P*	0.48	6	<0.69	<0.69	<0.69	<0.69	1.4 J	1.2 J	<0.69	<0.69	0.72 J	--	0.84 J	<0.69	<0.69	<0.69	<0.69	--	--
Arsenic, ug/L	P	3.57	10	0.80 J	3.3	1.2 J	36	14	7.3	<0.75	<0.75	4.2	--	44	39	0.79 J	20	<0.75	10	13
Barium, ug/L	P	332	2,000	280	150	110	96	120	120	54	130	52	--	54	100	180	160	160	--	--
Beryllium, ug/L	P*	0.16	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	<0.27	<0.27	--	--
Cadmium, ug/L	P*	0.12	5	0.072 J	<0.055	0.38	<0.055	<0.055	<0.055	<0.055	<0.055	<0.055	--	<0.055	<0.055	<0.055	<0.055	<0.055	--	--
Chromium, ug/L	P	13.5	100	5.3	<1.1	<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	4.7	6	<0.19	0.91	31	0.42 J	0.73	0.29 J	<0.19	<0.19	<0.19	--	<0.19	0.20 J	0.34 J	<0.19	1.8	--	--
Fluoride, mg/L	P*	0.23	4	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22	<0.22	<0.22	<0.22	--	--
Lead, ug/L	P*	0.56	15	<0.24	<0.24	0.26 J	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	--	<0.24	<0.24	<0.24	<0.24	<0.24	--	--
Lithium, ug/L	P	19.6	40	17	<2.5	5.0 J	18	16	19	3.3 J	7.8 J	12	37	50	16	8.4 J	18	6.6	--	--
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	<0.11	<0.11	--	--
Molybdenum, ug/L	P*	0.73	100	<1.2	2.5	<1.2	11	24	47	220	17	8.4	--	73	18	11	45	19	7.0	--
Selenium, ug/L	P	1.47	50	2.9 J	<0.96	3.7 J	1.3 J	1.0 J	1.8 J	<0.96	<0.96	2.5 J	--	5.90	1.1 J	<0.96	<0.96	<0.96	--	--
Thallium, ug/L	P*	0.47	2	0.27 J	<0.26	0.37 J	<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	2.37	5	0.845	0.698	0.489	0.276	0.439	0.478	1.210	0.859	0.331	--	0.299	0.739	0.981	0.576	0.663	--	--
<b>Additional Parameters Monitored for Selection of Remedy</b>																				
Arsenic - dissolved, ug/L				--	--	--	32	13	7.0	--	--	--		43	36	--	19	--	--	11
Calcium, ug/L				--	66	--	--	--	--	--	--	--		--	--	--	--	--	--	100
Cobalt - dissolved, # ug/L				--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	<0.19
Lithium - dissolved, # ug/L				--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	3.9 J
Iron, dissolved, # ug/L				<36	2,300	140	3,000	2,900	<36	1,400	1,600	<36		<36	1,300	8,800	4,000	5,600	--	4,700
Iron, ug/L				<36	2,500	810	3,500	3,600	<36	1,700	1,900	<36		<36	1,700	9,700	4,900	6,500	--	5,600
Magnesium ug/L				52,000	19,000	13,000	35,000	47,000	42,000	13,000	49,000	2,300		8,100	37,000	32,000	35,000	39,000	--	22,000
Manganese, dissolved, # ug/L				<3.6	380	3,800	1,400	1,500	660	93	350	<3.6		79	1,400	740	1,100	310	--	1,300
Manganese, ug/L				<3.6	380	4,400	1,600	1,800	750	100	390	<3.6		92	1,600	800	1,300	350	--	1,600
Molybdenum dissolved, ug/L				--	--	--	--	--	--	230	--	--		--	--	--	--	--	--	9.8
Potassium, ug/L				930	1,300	3,900	4,100	5,300	4,000	900	1,700	1,700		8,600	4,600	2,100	5,800	970	--	2,200
Sodium, ug/L				17,000	11,000	18,000	34,000	49,000	64,000	55,000	40,000	10,000		53,000	36,000	22,000	48,000	16,000	--	30,000
Bicarbonate Alkalinity, mg/L				430	290	88	360	430	230	130	230	39.0		49	440	290	350	320	--	280
Carbonate Alkalinity, mg/L				<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6		98	<4.6	<4.6	<4.6	<4.6	--	<4.6
Total Alkalinity, mg/L				430	290	88	360	430	230	130	230	39		150	440	290	350	320	--	280

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 Grayscale indicates Additional Parameters sampled for selection of remedy and evaluation of Monitored Natural Attenuation.

**Table 5. Groundwater Analytical Summary - 2022**  
**Prairie Creek Generating Station, Cedar Rapids, IA / SCS Engineers Project #25222074.00**

**Abbreviations:**

UPL = Upper Prediction Limit  
-- = Not Analyzed  
µg/L = micrograms per liter  
mg/L = milligrams per liter

GPS = Groundwater Protection Standard  
LOD = Limit of Detection  
LOQ = Limit of Quantitation

DQ= Double Quantification  
P = Parametric UPL with 1-of-2 retesting  
NP = Nonparametric UPL with 1-of-2 retesting

**Notes:**

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 Statistically Significant Increases above background.

1. An individual result above the UPL or GPS does not constitute an SSI above background or statistically significant level above the GPS. See the accompanying letter text for identification of statistically significant results.
2. GPS is the United States Environmental Protection Agency (USEPA) Maximum Contamination Level (MCLs), if established; otherwise, the values from 40 CFR 257.95(h)(2).
3. Interwell UPLs calculated based on results from background wells MW-301 and MW-302.

Created by: NDK  
Last revision by: RM  
Checked by: BR  
Proj Mgr QA/QC: TK

Date: 4/22/2021  
Date: 1/5/2023  
Date: 1/5/2023  
Date: 1/19/2023

**Table 6. 2022 Groundwater Field Data Summary  
Prairie Creek Generating Station / SCS Engineers Project #25222074.00**

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	4/25/2022	714.50	10.4	6.92	4.14	1155	120.0	20.60
MW-301A	4/29/2022	707.77	12.9	6.94	NM	583.3	116.0	20.30
MW-302	4/25/2022	715.27	6.8	5.35	0.25	534.2	160.1	24.20
MW-303	4/26/2022	703.85	8.7	7.07	0.10	756.0	-70.1	9.97
MW-304	4/26/2022	703.82	8.3	7.00	0.10	954.0	-54.0	21.80
MW-305	4/26/2022	703.76	7.6	7.06	0.92	1004	32.4	21.70
MW-306	4/26/2022	704.02	12.3	7.55	0.16	513.8	-119.8	18.90
MW-306A	4/26/2022	704.16	12.1	7.21	0.14	1036	-77.6	21.50
MW-307	4/25/2022	708.27	10.2	9.47	0.09	235.3	8.0	14.80
MW-308	2/22/2022	702.84	12.2	8.99	0.14	486.0	210.7	0.00
	4/25/2022	705.45	11.1	9.22	0.06	616.7	-113.8	16.60
MW-309	4/27/2022	703.56	11.7	7.24	0.10	948.0	-3.2	11.40
MW-309A	4/26/2022	702.93	14.4	7.18	0.20	770.0	-135.7	8.18
MW-310	4/27/2022	703.33	11.8	7.30	0.08	972.0	-125.3	10.20
MW-310A	4/27/2022	703.68	14.6	7.25	0.09	982.0	-152.1	8.94
MW-312	5/25/2022	703.52	17.8	6.90	0.10	843.0	201.1	3.84
	7/15/2022	703.80	21.5	6.97	0.14	793.0	-46.1	0.00

Abbreviations:

NM = Not Measured

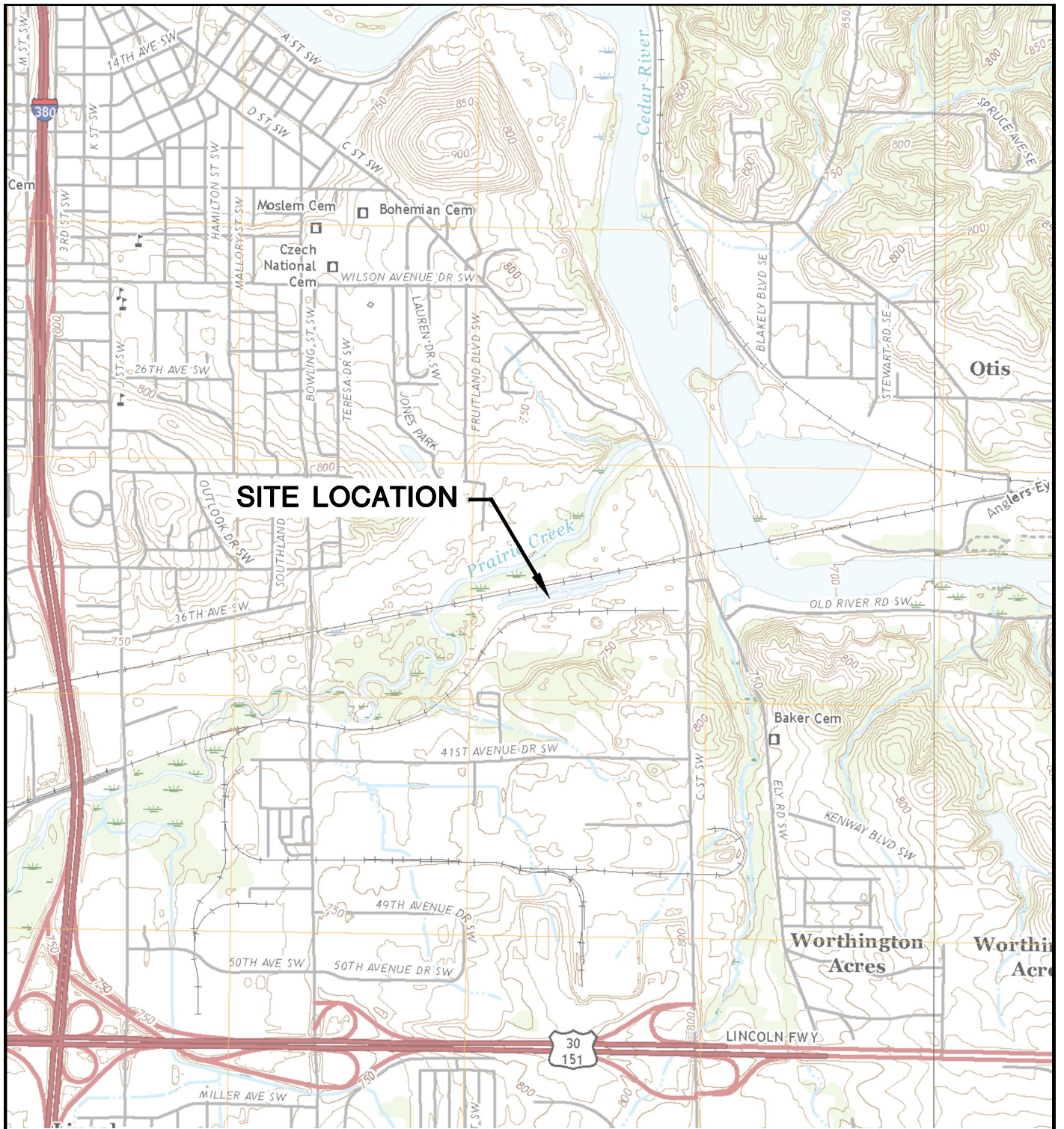
Created by: NDK  
 Last revision by: RM  
 Checked by: BR  
 PM QA/QC: TK

Date: 4/22/2021  
 Date: 12/20/2022  
 Date: 1/5/2023  
 Date: 1/19/2023

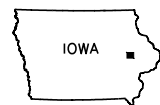


## Figures

- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations
- 3 Water Table Map – April 2022
- 4 Water Table Map – May 2022
- 5 Water Table Map – July 2022
- 6 Water Table Map – October 2022

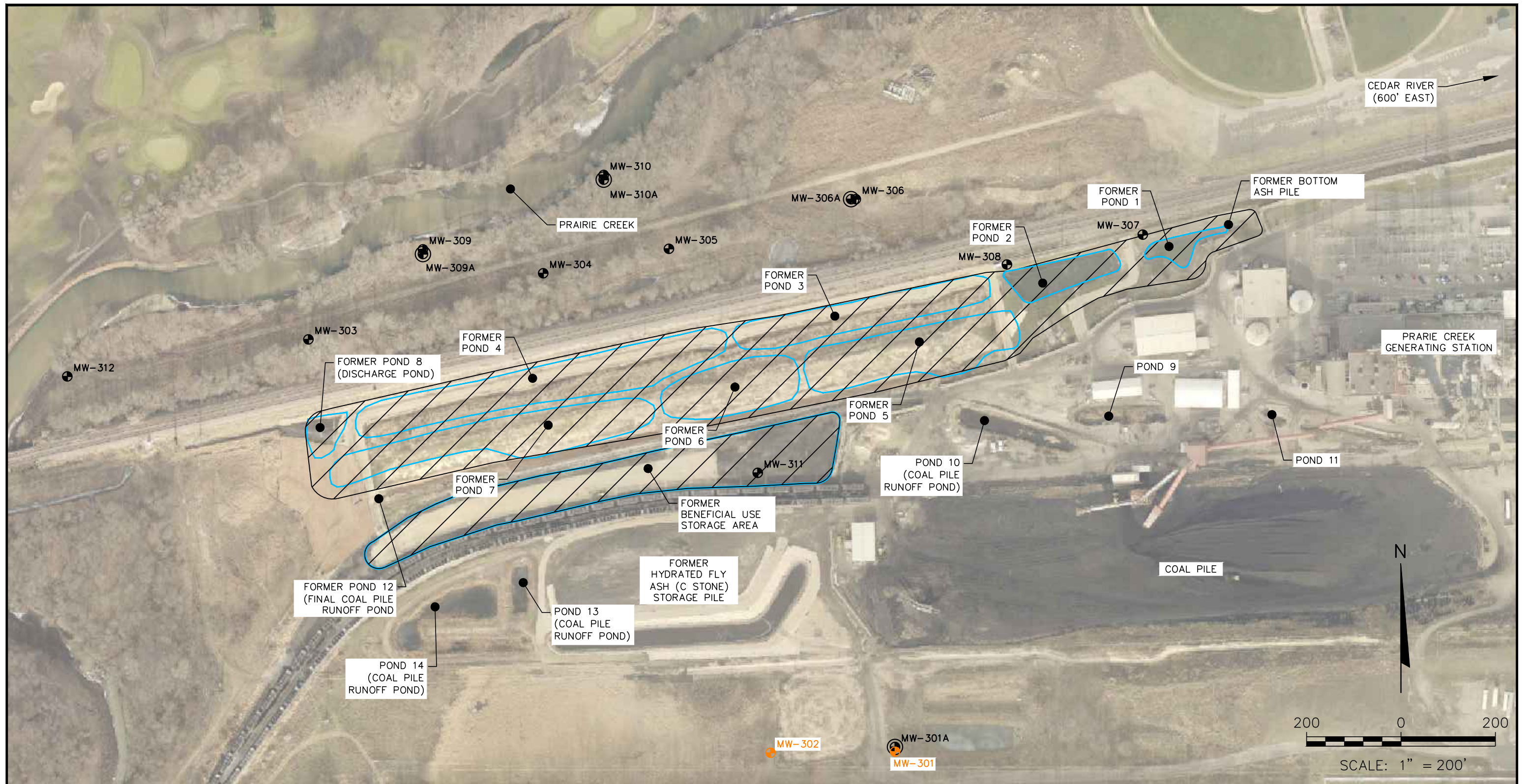


CEDAR RAPIDS SOUTH QUADRANGLE  
 IOWA-LINN CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 2018  
 SCALE: 1" = 2,000'








CLIENT	ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718		SITE	ALLIANT ENERGY PRAIRIE CREEK GENERATING STATION CEDAR RAPIDS, IA		ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE	1
	PROJECT NO.	25219074.00		DRAWN BY:	BSS				
	DRAWN:	11/18/2019	CHECKED BY:	MDB					
	REVISED:	01/14/2020							





**LEGEND**

-  MONITORING WELL
-  BACKGROUND MONITORING WELL
-  PIEZOMETER
-  FORMER CCR UNITS
-  APPROXIMATE CLOSURE AREA (SEE NOTE 1)

**NOTES:**

1. PCS PONDS 1-8, THE BOTTOM ASH PILE, AND THE BENEFICIAL USE STORAGE AREA WERE CLOSED IN DECEMBER 2018. LIMITS ARE APPROXIMATE.
2. AERIAL PHOTO IMPORTED FROM THE ARCMAP BASEMAP (CEDAR RAPIDS, IOWA GIS - DECEMBER 22, 2018).
3. MONITORING WELLS MW-301 THROUGH MW-306 INSTALLED BY CASCADE DRILLING BETWEEN OCTOBER 31 AND DECEMBER 6, 2016.
4. MONITORING WELLS MW-307 AND MW-308 INSTALLED BY CASCADE DRILLING ON NOVEMBER 27, 2018.
5. MONITORING WELLS MW-309 AND MW-310 INSTALLED BY ROBERTS ENVIRONMENTAL DRILLING ON AUGUST 5-6, 2019.
6. MONITORING WELLS MW-301A AND MW-306A INSTALLED BY CASCADE DRILLING ON JUNE 22-24, 2020.
7. MONITORING WELLS MW-309A AND MW-310A WERE INSTALLED BY CASCADE DRILLING ON JULY 23, 2020.
8. THE BACKGROUND MONITORING WELLS FOR THE PRAIRIE CREEK GENERATING STATION ARE: MW-301 AND MW-302.

PROJECT NO.	25222074.00	DRAWN BY:	BSS/KP
DRAWN:	11/18/2019	CHECKED BY:	RM
REVISED:	01/234/2023	APPROVED BY:	TK, 1/31/2023

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

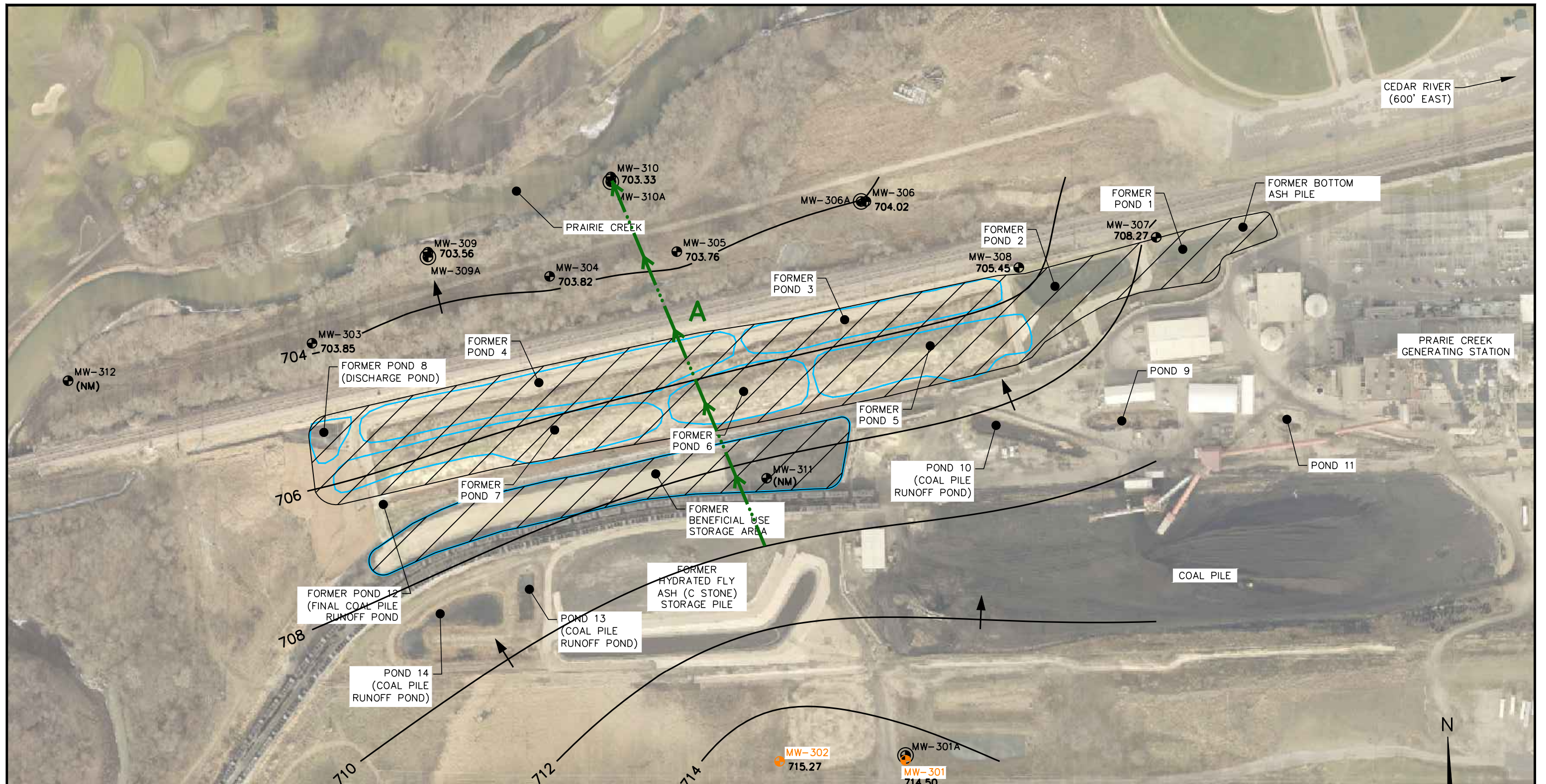
CLIENT: INTERSTATE POWER AND LIGHT  
 4902 N. BILTMORE LANE, #1000  
 MADISON, WI 53718

SITE: ALLIANT ENERGY  
 PRAIRIE CREEK GENERATING STATION  
 CEDAR RAPIDS, IA

SITE PLAN AND  
 MONITORING WELL LOCATIONS

FIGURE  
 2



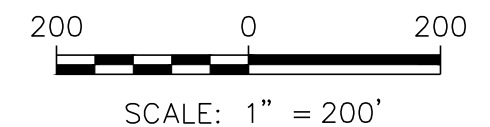


LEGEND

- MONITORING WELL
- BACKGROUND MONITORING WELL
- PIEZOMETER
- CCR UNITS
- APPROXIMATE CLOSURE AREA
- 713.44** WATER TABLE ELEVATION (OCTOBER 10-12, 2022)
- (NM)** NOT MEASURED
- WATER TABLE CONTOUR
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

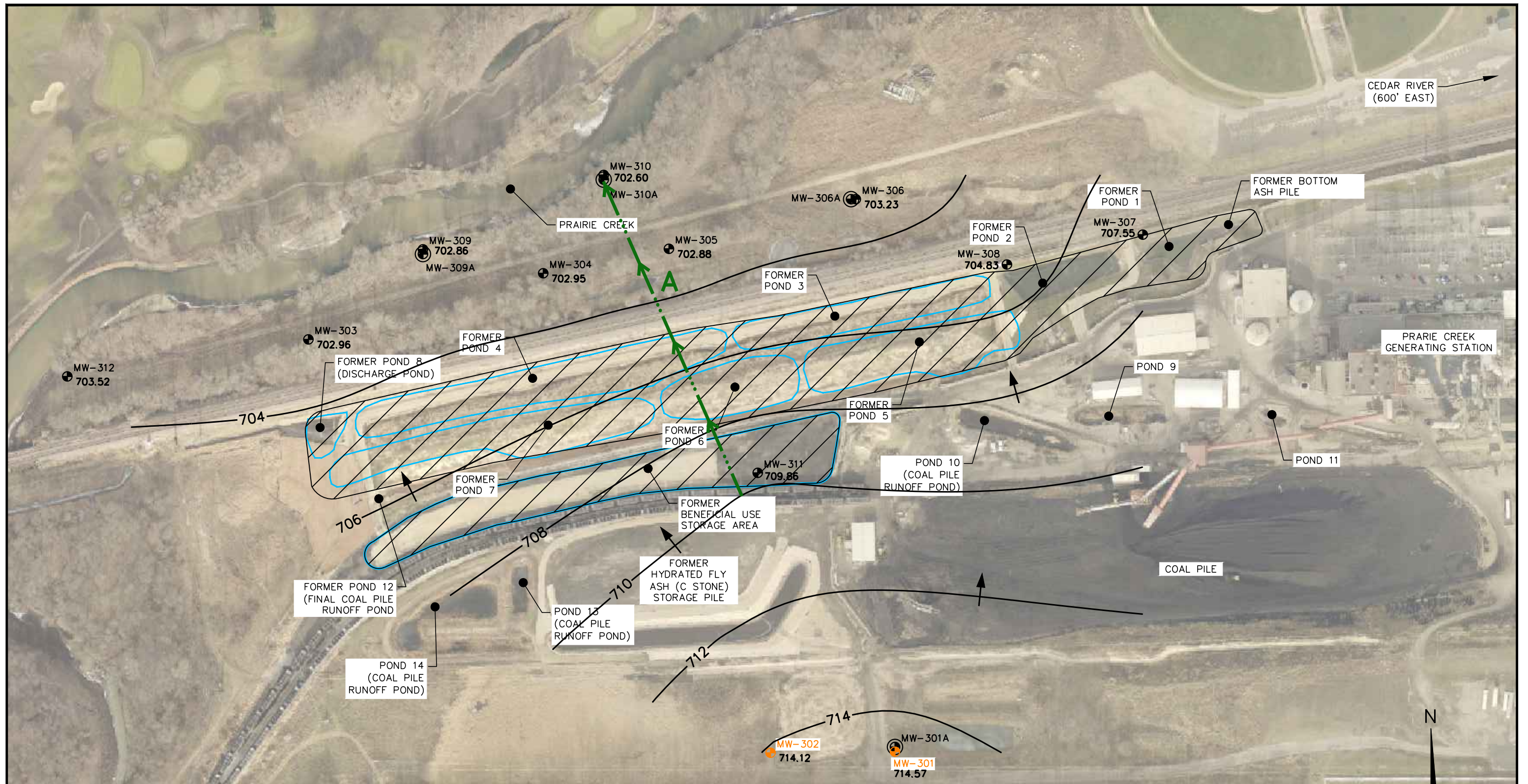
NOTES:

1. SEE FIGURE 2 FOR BASE MAP NOTES.
2. MONITORING WELLS MW-311 AND MW-312 WERE INSTALLED IN MAY 2022.



PROJECT NO.	25222074.00	DRAWN BY:	KP	<b>ENGINEER</b> 	<b>CLIENT</b> ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	<b>SITE</b> ALLIANT ENERGY PRAIRIE CREEK GENERATING STATION CEDAR RAPIDS, IA	<b>FIGURE</b> WATER TABLE MAP APRIL 2022	<b>FIGURE</b> 3
DRAWN:	10/21/2022	CHECKED BY:	RM					
REVISED:	01/20/2023	APPROVED BY:	TK, 1/31/2023					





CEDAR RIVER  
(600' EAST)

PRAIRIE CREEK  
GENERATING STATION

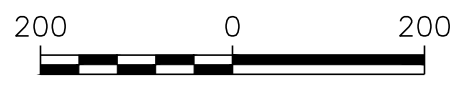


LEGEND

- MONITORING WELL
- BACKGROUND MONITORING WELL
- PIEZOMETER
- CCR UNITS
- APPROXIMATE CLOSURE AREA
- 713.44 WATER TABLE ELEVATION (OCTOBER 10-12, 2022)
- WATER TABLE CONTOUR
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. SEE FIGURE 2 FOR BASE MAP NOTES.

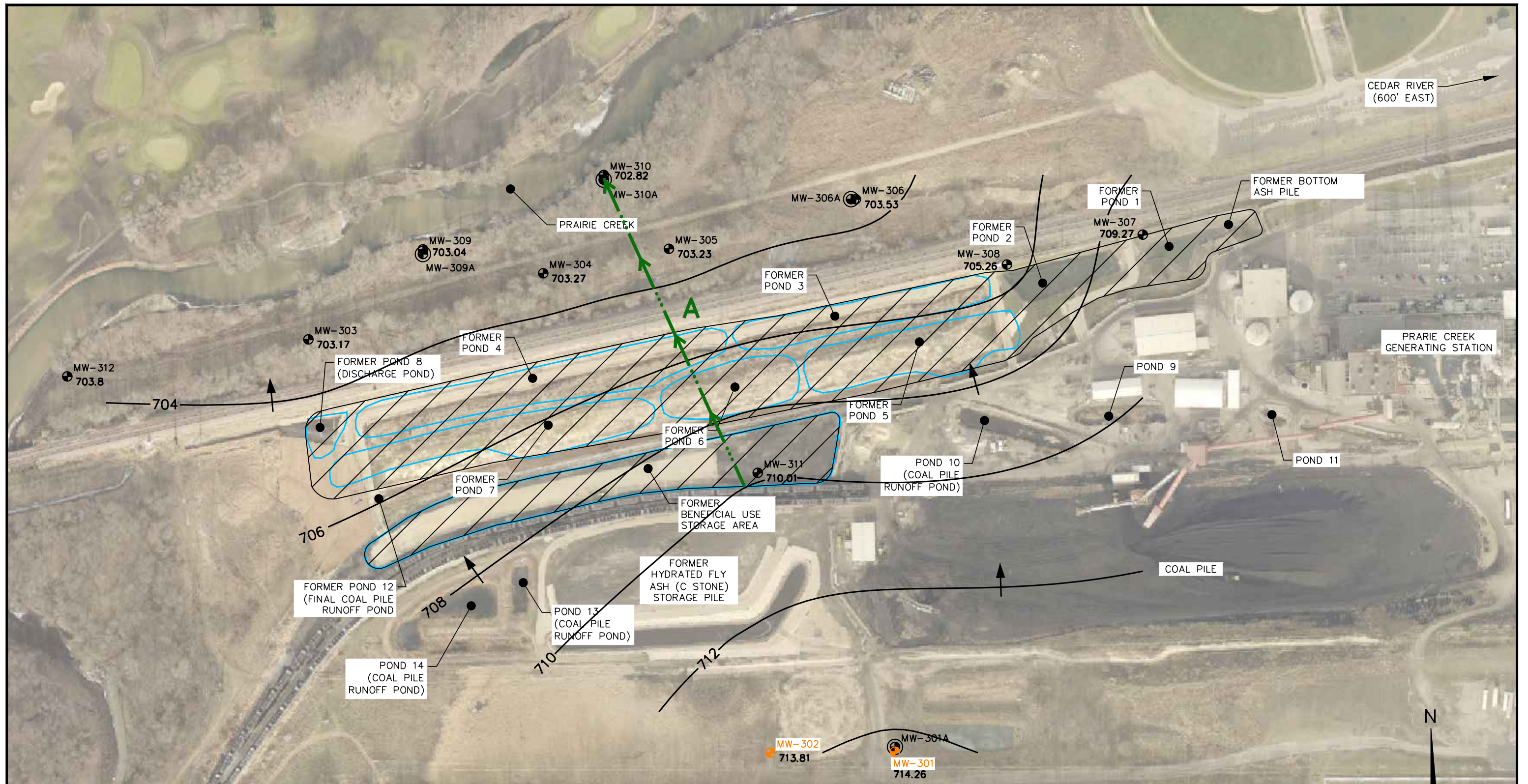


SCALE: 1" = 200'

PROJECT NO.	25222074.00	DRAWN BY:	KP	<b>ENGINEER</b>	<b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	<b>CLIENT</b>	ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	<b>SITE</b>	ALLIANT ENERGY PRAIRIE CREEK GENERATING STATION CEDAR RAPIDS, IA	WATER TABLE MAP MAY 2022	FIGURE 4
DRAWN:	07/15/2022	CHECKED BY:	RM								
REVISED:	01/24/2023	APPROVED BY:	TK, 1/31/2023								

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CEDAR RIVER  
(600' EAST)

PRAIRIE CREEK  
GENERATING STATION

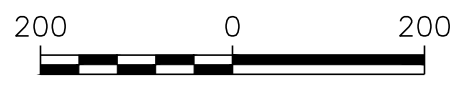


LEGEND

- MONITORING WELL
- BACKGROUND MONITORING WELL
- PIEZOMETER
- CCR UNITS
- APPROXIMATE CLOSURE AREA
- WATER TABLE ELEVATION (OCTOBER 10-12, 2022)
- WATER TABLE CONTOUR
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. SEE FIGURE 2 FOR BASE MAP NOTES.



SCALE: 1" = 200'

PROJECT NO.	25222074.00	DRAWN BY:	KP
DRAWN:	07/18/2022	CHECKED BY:	RM
REVISED:	01/24/2023	APPROVED BY:	TK, 1/31/2023

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

CLIENT: ALLIANT ENERGY  
4902 N. BILTMORE LANE, #1000  
MADISON, WI 53718

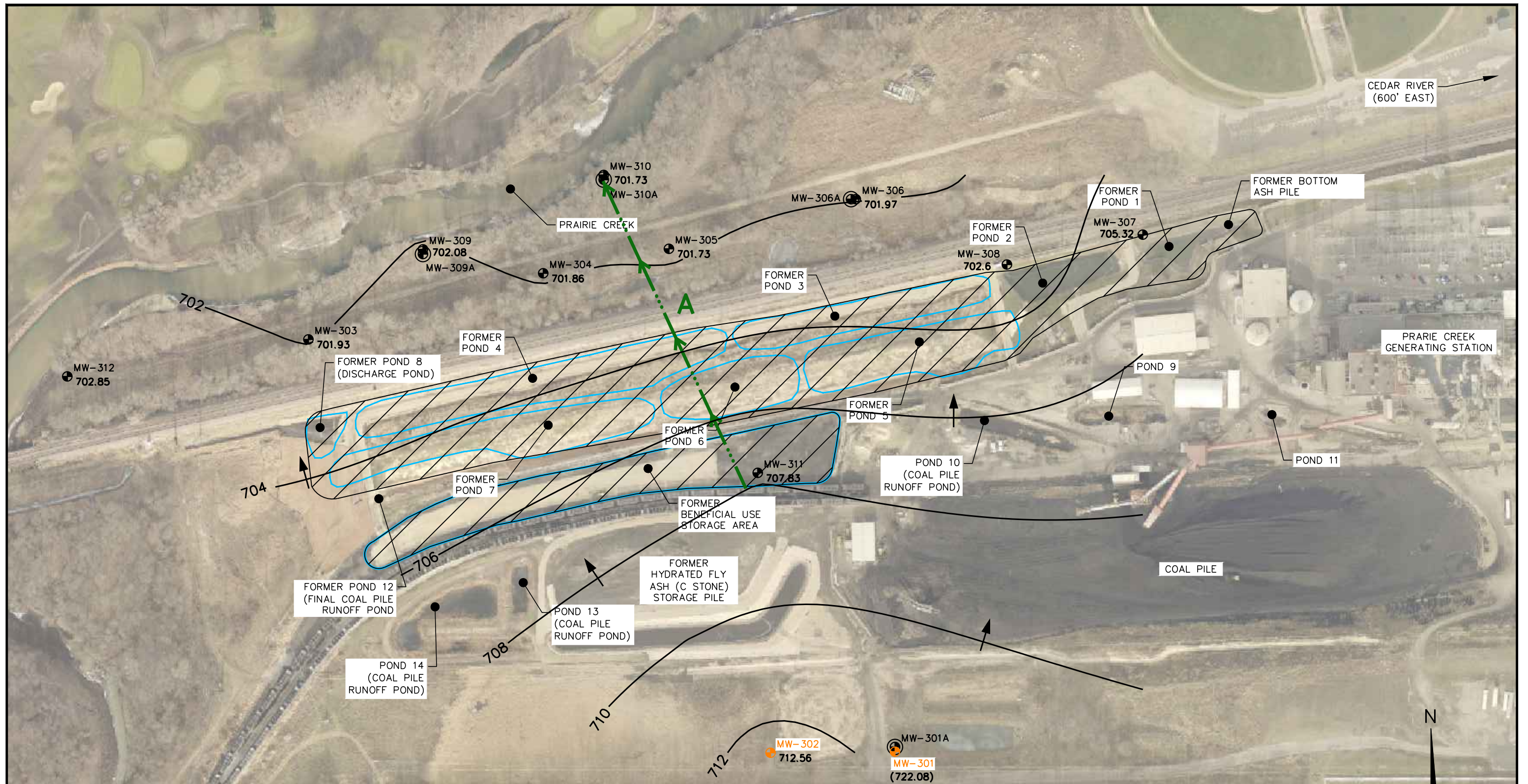
SITE: ALLIANT ENERGY  
PRAIRIE CREEK GENERATING STATION  
CEDAR RAPIDS, IA

WATER TABLE MAP  
JULY 2022

FIGURE  
5

I:\25222074.00\Drawings\Wtbl.dwg, 1/24/2023 8:05:22 AM



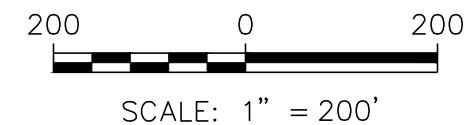


LEGEND


- MONITORING WELL
- BACKGROUND MONITORING WELL
- PIEZOMETER
- CCR UNITS
- APPROXIMATE CLOSURE AREA
- 713.44** WATER TABLE ELEVATION (OCTOBER 10-12, 2022)
- WATER TABLE CONTOUR
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4A)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. SEE FIGURE 2 FOR BASE MAP NOTES.
2. WATER LEVEL MEASUREMENT FOR MW-301 APPEARS TO BE IN ERROR (10 FEET HIGH), BUT THIS COULD NOT BE CONFIRMED. NOT USED IN CONTOURING.



PROJECT NO.	25222074.00	DRAWN BY:	KP	<b>ENGINEER</b>	<b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	<b>CLIENT</b>	ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	<b>SITE</b>	ALLIANT ENERGY PRAIRIE CREEK GENERATING STATION CEDAR RAPIDS, IA	WATER TABLE MAP OCTOBER 2022	FIGURE 6
DRAWN:	10/28/2022	CHECKED BY:	RM								
REVISED:	01/24/2023	APPROVED BY:	TK, 1/31/2023								



Appendix A  
Regional Hydrogeologic Information



**Table PC-2. Regional Hydrogeologic Stratigraphy  
Prairie Creek Generating Station / SCS Engineers Project #25215053.01**

Age of Rocks	Hydrogeologic Unit	General Thickness (feet)	Name of Rock Unit*	Type of Rock
Quaternary (0-1 million years old)	Surficial Aquifers • Alluvial • Buried-Channel • Drift	0 to 400	Undifferentiated	<ul style="list-style-type: none"> <li>• Sand, gravel, silt, and clay</li> <li>• Sand, gravel, silt, and clay</li> <li>• Till (sandy, pebbly clay), sand, and silt</li> </ul>
Pennsylvanian (280 to 310 million years old)	Aquiclude, locally contains waterbearing sandstone	0 to 70	Undifferentiated	<ul style="list-style-type: none"> <li>• Shale, sandstone, limestone, and coal</li> </ul>
Mississippian (310 to 345 million years old)	Mississippian Aquifer	0 to 220	Meramecian Series Osagean Series Kinderhookian Series	<ul style="list-style-type: none"> <li>• Limestone and sandstone</li> <li>• Dolomite, limestone, and shale</li> <li>• Limestone, dolomite, and siltstone</li> </ul>
Devonian (345 to 400 million years old)	Devonian Aquiclude	0 to 350	Yellow Spring Group Lime Creek Group	<ul style="list-style-type: none"> <li>• Shale, dolomite, and siltstone</li> <li>• Dolomite and shale</li> </ul>
	Devonian Aquifer	0 to 400	Cedar Valley Limestone Wapsipinicon Limestone	<ul style="list-style-type: none"> <li>• Limestone and dolomite</li> <li>• Dolomite, limestone, and shale</li> </ul>
Silurian (400 to 425 million years old)	Silurian Aquifer	0 to 450	Gower Dolomite Hopkinton Dolomite Kankakee Limestone Edgewood Dolomite	<ul style="list-style-type: none"> <li>• Dolomite, with some chert and limestone</li> </ul>
Ordovician (425 to 500 million years old)	Aquiclude	300 to 600	Maquoketa Shale Galena Dolomite Decorah Formation Platteville Formation	<ul style="list-style-type: none"> <li>• Dolomite and shale</li> <li>• Dolomite and chert</li> <li>• Limestone and shale</li> <li>• Limestone and shale</li> </ul>
	Cambrian-Ordovician aquifer	400 to 650	St. Peter sandstone Prairie du Chien Formation Jordan Sandstone St. Lawrence Dolomite	<ul style="list-style-type: none"> <li>• Sandstone</li> <li>• Dolomite, sandstone, and shale</li> <li>• Sandstone</li> <li>• Dolomite</li> </ul>
Cambrian (500 to 600 million years old)	Cambrian confining beds	90 to 290	Franconia Sandstone	<ul style="list-style-type: none"> <li>• Shale, siltstone, and sandstone</li> </ul>
	Dresbach Aquifer	157 to 1644	Dresbach Group Galesville Sandstone Eau Claire Sandstone Mt. Simon Sandstone	<ul style="list-style-type: none"> <li>• Sandstone</li> <li>• Sandstone, shale, and dolomite</li> <li>• Sandstone</li> </ul>
Precambrian (600 million to more than 2 billion years old)	Precambrian rocks	Unknown	Crystalline rocks, undifferentiated	<ul style="list-style-type: none"> <li>• Sandstone, igneous and metamorphic rocks</li> </ul>

\*This nomenclature and classification of rock units in this report are those of the Iowa Geological Survey and do not necessarily coincide with those accepted by the U.S. Geological Survey.

Source: "Water Resources of East-Central Iowa," Iowa Geologic Survey Water Atlas No. 6.

I:\25215053\Reports\Report 8 - OGS\Tables\Regional\_Hydrogeologic\_Stratigraphy.doc

GO

Things to See & Do Resident Resources Doing Business City Council Government City News CR Talks

Resident Resources

Parks & Recreation

Utilities

- Energy Management
- Garbage & Recycling
- Utility Bills

Water

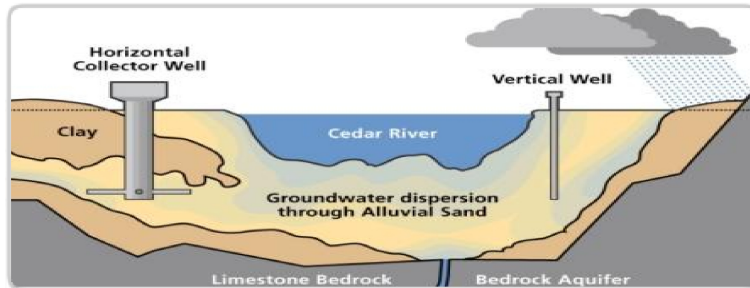
- About Us
- Backflow Prevention
- Outages/Main Breaks
- Our Treatment Process

Water Quality

Our Watershed

- Water Quality Report
- Best Tasting Water
- Water Engineering
- In the Home
- Drought
- Water Conservation
- Utility Bills
- 5 in 1 Dam
- Sewer Maintenance
- Water Pollution Control
- Sewer
- Storm Water
- City Buses
- Rental Services
- Neighborhood Services
- Streets Services
- Housing Services
- CleanUpCR
- iGreenCR
- Library
- Public Safety
- City Services
- Get Involved
- Americans with Disabilities Act

# Our Watershed



SHARE

## Where Does Our Water Come From?

The City of Cedar Rapids obtains its drinking water supplies from shallow vertical and collector wells constructed in the sand and gravel deposits along the Cedar River. Those deposits form an underground water-bearing layer called an alluvial aquifer. Because of continuous pumping of the City's wells, most of the water in the aquifer is pulled from the river. The rest of the water is supplied as water percolates up from a deeper bedrock aquifer or down from the top of the ground.

Our drinking water from those wells benefits from natural filtration through the riverbank. This natural sand filtration has proven beneficial, pre-treating the water before it ever reaches the City's two treatment plants (both conventional lime-softening facilities).

## Watershed Monitoring

In order to most effectively manage our water resources, the Cedar Rapids Water Division has worked with state and federal agencies to complete a source water assessment, identifying potential contamination sources in the Cedar River watershed. The results of that assessment, paired with a continuous monitoring program, help us better understand our watershed. We have confirmed that some contaminants, including nitrate, herbicides and bacteria, enter the Cedar River watershed upstream from our wells. The watershed of the Cedar River upstream from Cedar Rapids is over 6,500 square miles and extends into southern Minnesota. Monitoring of these contaminants will continue to ensure a strong watershed protection program.

If you are interested in reviewing our source water assessment or any monitoring results, please contact the CRWD at 319-286-5910.

- How do I...?
- Contact Us
- Subscribe
- Bid Opportunities & Results

- Building Permit Viewer
- City Buses
- City Departments
- Report a Problem

- Flood Recovery Progress
- Garbage Pickup
- Licenses, Permits & Taxes
- Maps

- Parks & Recreation
- Public Safety
- Utility Bills
- FAQ

Select Language ▼



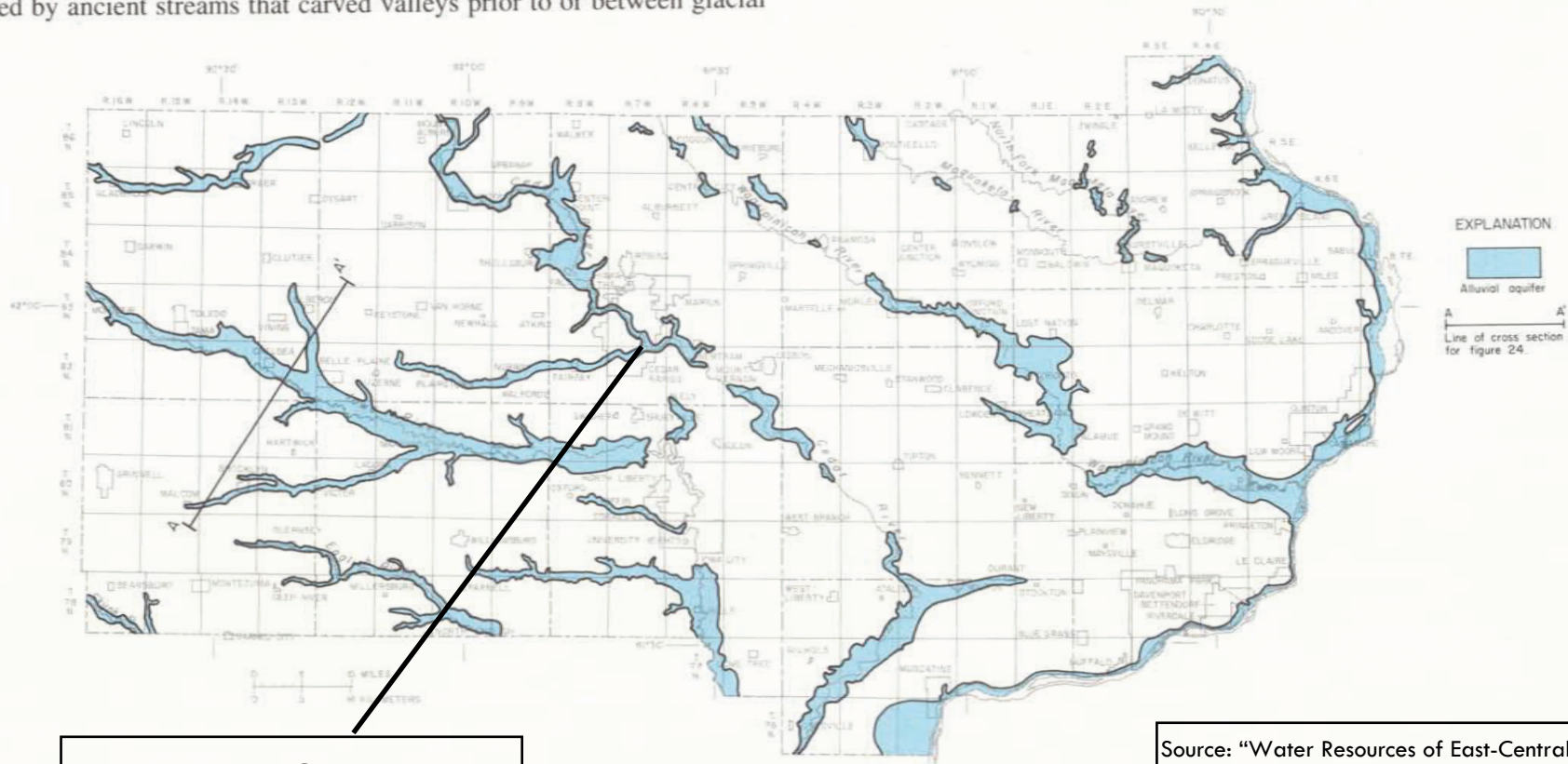
## Surficial Aquifers

The surficial aquifers are located within the unconsolidated materials above the bedrock surface. They are subdivided into alluvial, buried-channel, and drift aquifers.

The alluvial aquifers are deposits located along present-day watercourses. They consist of sands and gravels interbedded with less-permeable silts and clays and lie beneath the flood plains of larger rivers and creeks. In the eastern half of the report area, the Iowa, Cedar, Wapsipinicon, and Maquoketa Rivers as well as Buffalo Creek alternately flow through narrow bedrock gorges and wide flood plains (fig. 22). Thus the alluvial aquifers occur irregularly in the valleys of these rivers.

The buried-channel aquifers (fig. 23) are the unconsolidated material deposited by ancient streams that carved valleys prior to or between glacial

advances. Many of these ancient valleys were scoured deeply into the bedrock and are much wider than the valleys of present streams (fig. 24). Buried channels may be easily recognized on the bedrock topography map (fig. 25), but are only poorly expressed in the modern landscape. While they are not generally expressed as primary features of present topography, they exert noticeable influences on modern drainage. Prairie Creek near Cedar Rapids, Deep Creek near Preston, and the lower stretches of the Cedar, Wapsipinicon, and Maquoketa Rivers follow the courses of buried channels. See figures 22 and 23. In addition, most of the irregularly occurring alluvial aquifers in the eastern half of the report area are located where modern stream valleys intersect buried bedrock channels.



Approximate Site Location

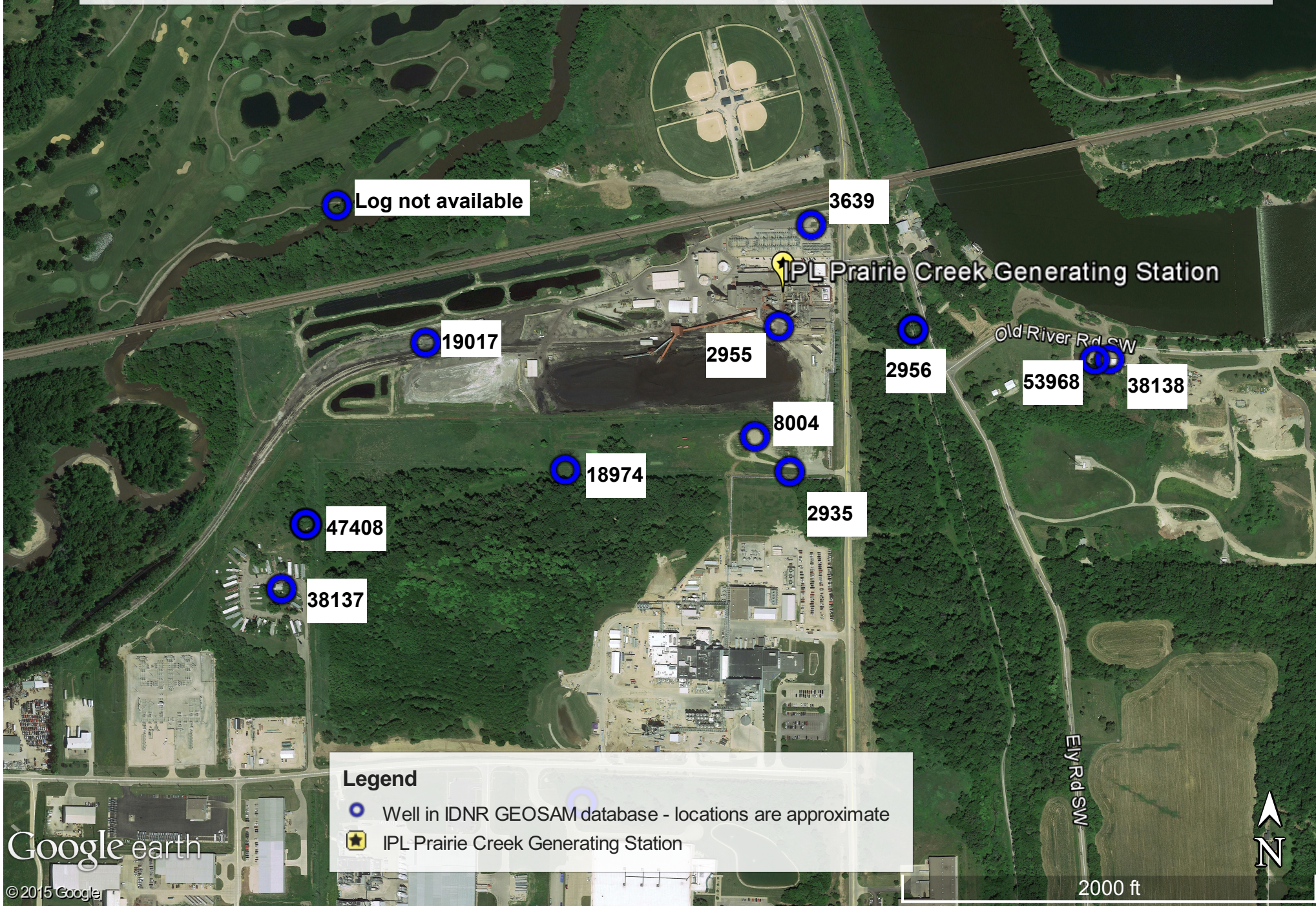
Source: "Water Resources of East-Central Iowa," Iowa Geologic Survey Water Atlas No. 6.

Figure 22.—Areal distribution of alluvial aquifers in east-central Iowa





# Historical Well Logs Near Prairie Creek Generating Station

Labeled well locations are included in IDNR's GEOSAM database. Logs are not available for all well borings. Well locations are approximate.



## Legend

-  Well in IDNR GEOSAM database - locations are approximate
-  IPL Prairie Creek Generating Station

Google earth

© 2015 Google

2000 ft





FORM NO. 79 -- In stock and for sale by Mid-West Prtg. Co., Tulsa W-2935

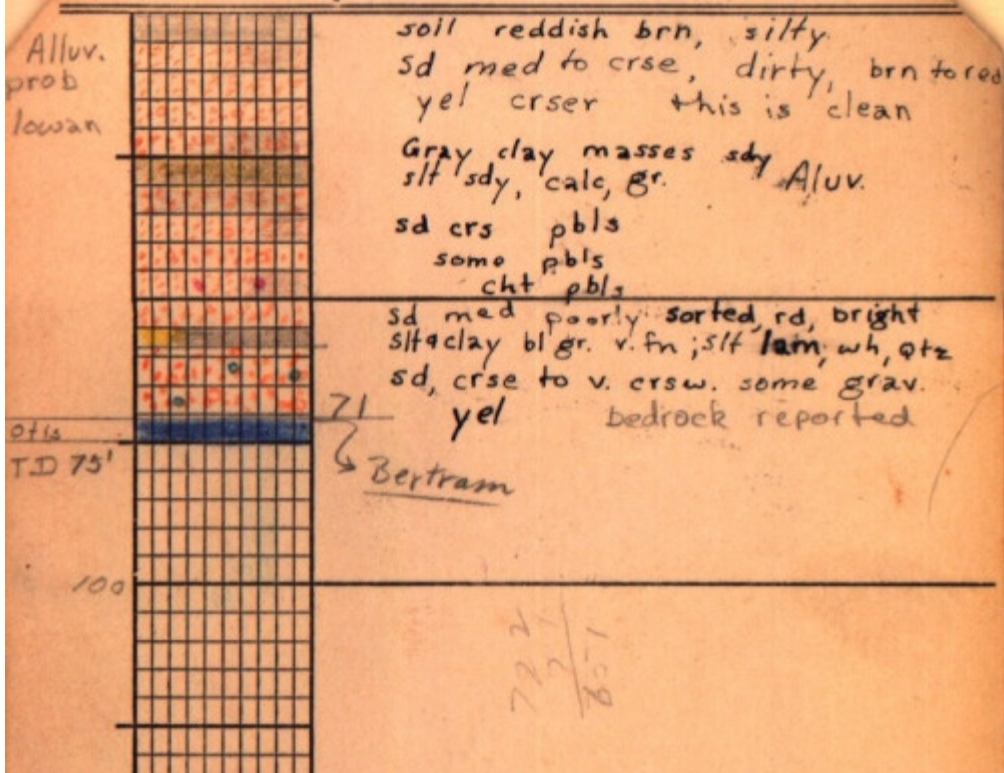
STATE IOWA CEDAR RAPIDS (LINN)  
 NE/SE NE CENTRAL IOWA POWER CO-OP  
 SEC. 3 Test hole No. 1  
 TWP. 82N RGE. 7W COMMENCED COMPLETED



Art Bruinekool  
 CASING RECORD  
 LOGGED BY  
 Aug 11, 1947 S.E.T. + G.

REMARKS  
 Elev. 722 ± S.W.L. 19.6' below L.S. - 8-11-47  
 T.D. 75'

CB7-3



General	Construction	Logs	Stratigraphy	Water	Storage
---------	--------------	------	--------------	-------	---------

**Identification**

**Date Received**  
**Owner Name** Hide-A-Way Manor  
**Alt Name**  
**WNumber** 38137  
**PWTS ID**  
**Storet ID**  
**SDWIS ID** 2411834  
**USGS ID**  
**Project** SOURCE WATER PROTECTION  
**Operator** Unknown

**Location**

**State** Iowa  
**County** Linn  
**Quadrangle** Cedar Rapids South, Iowa  
**Township** T82N  
**Range** R7W  
**Section** 3  
**Quarter** SW NE NE  
**Latitude** 41.9401300000  
**Longitude** -91.6478370000  
**Accuracy** GPS +/- 20 m.  
**UTM X** 612089  
**UTM Y** 4644013

**Site**

**Site Type** Drilled hole  
**Well Status** Active  
**Field Located**  
**Elevation** 741 ft  
**Elevation Accuracy** Digital Elevation Model  
 Accurate to 5 ft  
**Landscape Position** Valley

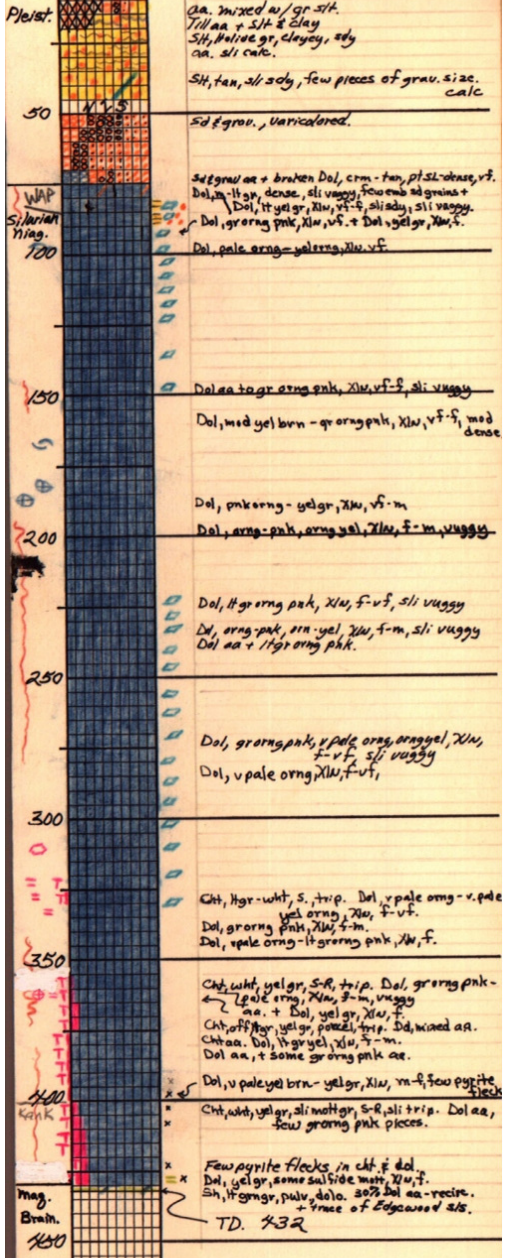
**Drilling**

**Drilling Company** Unknown  
**Drilling Date**  
**Drill Method** Unknown  
**Bedrock Depth**  
**Well Depth** 142 ft  
**Total Depth** 142 ft  
**Well Types** Public Access  
**Aquifers** Silurian

STATE Iowa Cedar Rapids (Linna)  
 SW NW SW NE Iowa Elec. L & P #5  
 SEC. 3  
 TWP. R2 RGE. TW COMMENCED \_\_\_\_\_ COMPLETED 10/66  
 THORPE  
 CASING RECORD

LOGGED July 1974 BY Gilmore  
 REMARKS

El. 715' Top.  
 TD. 432'



715  
 32  
 640

430  
 75  
 355



STATE Iowa Cedar Rapids (Linn)

SENE SWNE Central Iowa Power #4

SEC. 3

TWP. 82 RGE. 7W COMMENCED 8-22-66 COMPLETED 9-17-66

Thorpe well co.

CASING RECORD  
42" csg 0-5', 32" csg +1'-23', 24" csg

+17'-69'7", 16" csg +2'10"-90'

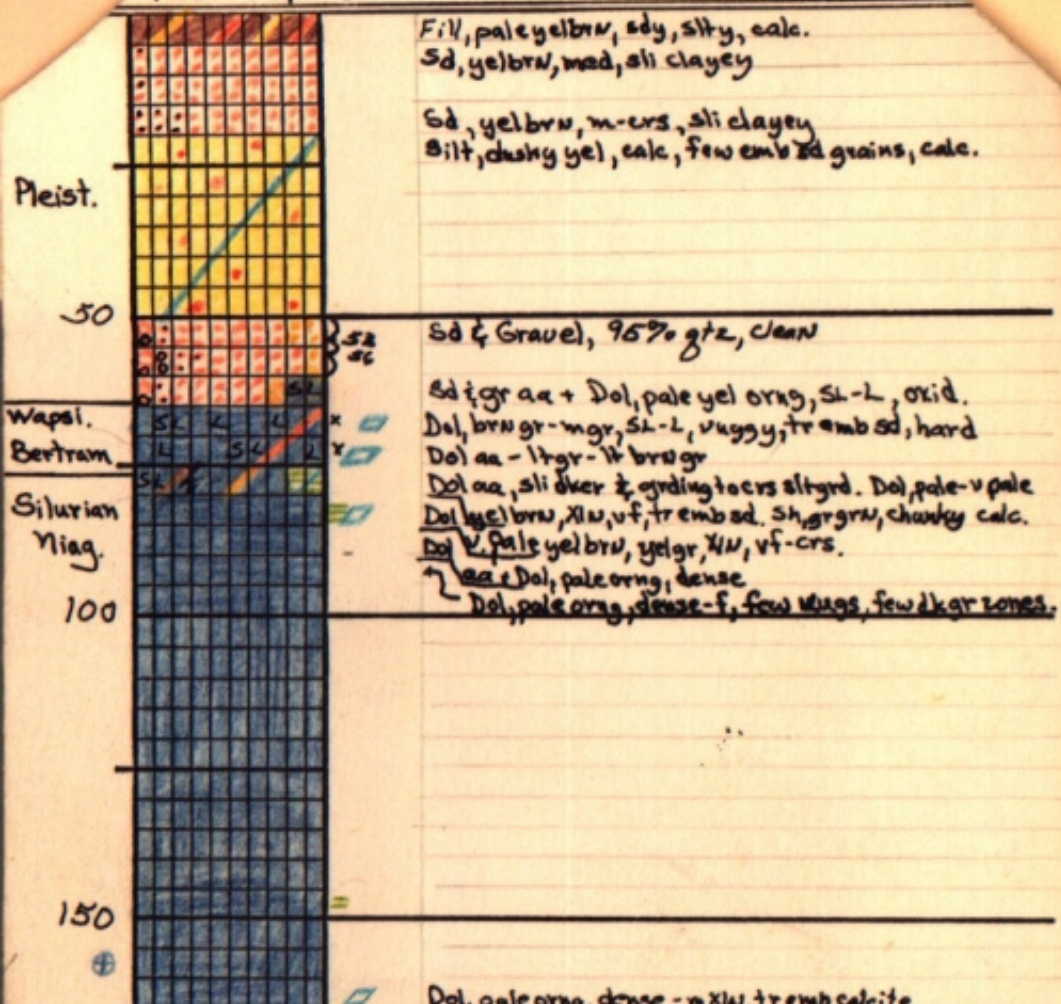
LOGGED 10-22-71 BY Gilmore

REMARKS  
Cable tools

EL. 722' TD. 439' SWL-40-58', PL-113.9'

Yield-600 gpm

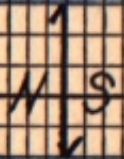
PL6-717





200

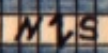
Dol aa, more XW, some pin point por.  
Dol, pale org - pink org, XW, f, pt dense, few gr zones



Dol, org pink - pale org, XW, v.f., pin point por.

250

Dol, mod org pink - pale org, XW, v.f., pt dense, sh por, vuggy, calcite - clear - yel.



Dol, gro org, org pink, dense, f, emb calcite

300

Dol aa few gr zones  
Dol, v. pale org, dense - f, emb calcite - yel - clear  
Dol aa + some org pink

Dol, pale org, tr pink, XW, f, emb calcite, pin point por  
cht, yel gr, wht, trip. Dol aa.  
cht aa foss.

cht, lt gr, wht, trip, foss. Dol, v. pale org, XW, f,  
sli vuggy - por, trace org pink,  
cht aa. Dol, v. pale org, trace org pink, XW, f - v.f.  
Dol, pale org, gro org pink, dense, f, sli vuggy & por.

cht, v. lt gr, wht, slt trip. S. Dol, pale - v. pale org, XW, f-m.  
Dol aa, sli vuggy

cht aa. Dol, v. pale org, XW, f - v.f.  
cht, lt gr, wht, slt trip. Dol, v. pale yel brn, pale org, XW, f - m.  
cht, lt - v. lt gr, S. Dol aa.  
cht, lt gr, wht, pale yel brn, S, slt trip. Dol aa sli vuggy  
cht aa. Dol, pale gro org, XW, f - m.  
cht, lt - v. lt gr, S, sli mett. Dol aa.

cht, off wht, lt gr, S-R, slt trip. Dol aa, some dissem. pyrite.  
cht aa. Dol, v. pale yel brn, XW, f - m.  
cht, off wht, yel brn, lt gr, S-R, slt trip. Dol aa w/ dk gr mett.,  
pt sli row f ang.

Sh, gr gr, chunky, dolo.

TD. 439'

Kank.

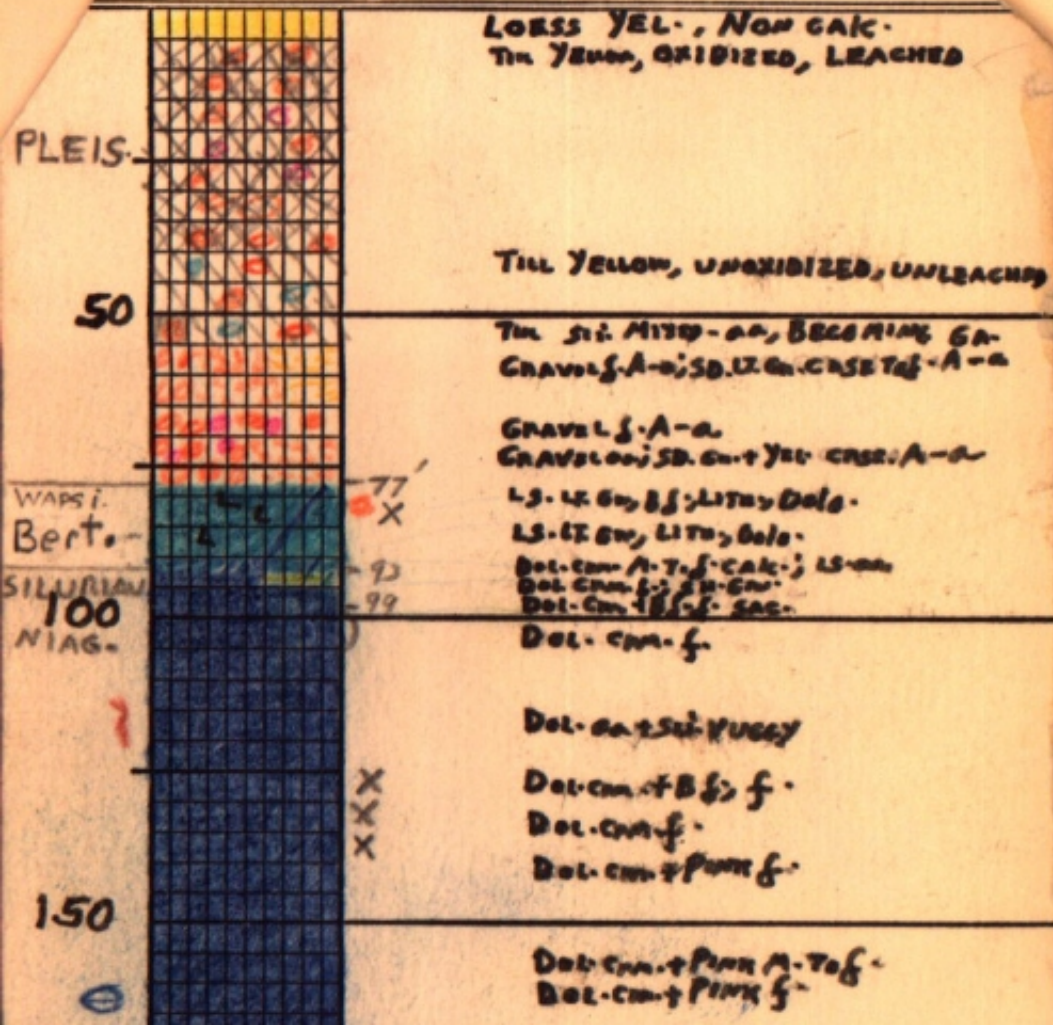
Mag.  
450

$$\begin{array}{r} 720 \\ 60 \\ \hline 660 \end{array}$$

$$\begin{array}{r} 722 \\ 436 \\ \hline 286 \end{array}$$



STATE		IOWA		CEDAR RAPIDS (LINN)													
NW NE SE NE		APP. C NE SE		CENTRAL IOWA POWER COOP #3													
SEC. 3		DAWN SE NE		(REA)													
TWP.	RGE.	COMMENCED	COMPLETED														
82N	7W	AUG. 21 - SEPT. 14, 1956															
<table border="1"> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table>														HORG & AMES			
CASING RECORD																	
77' OF 20" CASING																	
99' OF 12" CASING (CEMENT)																	
LOGGED		FEB. 25, 1957		BY NORTHROP													
REMARKS		EL 722'															
TD		SWL 38.67'															
EKS-1		PL 144.9' @															
3/59		SWL 39.12'															
		SWL 145' @ 476 gpm															





Dol. Bl. + P. f.

Dol. Bl. f.; sil. porous - some P. f.

Dol. con + P. f. + porous  
Dol. P. f., VUGGY  
Dol. con + P. f., VUGGY  
Dol. con + P. f., sil. porous

Dol. con f.

Dol. con + P. f.  
Dol. MASTY con. f. - some P. f.  
Dol. con f., sil. VUGGY

Dol. con + P. f. > sil. porous

CHZ. W. - Room, Tap; Dol. con + P. f.  
sil. porous  
CHZ. con; Dol. MASTY con. f. sil. porous  
Dol. con + P. f. some P. f.

CHZ. W. - Room, Tap; Dol. con - A. T. f.  
CHZ. W. - Room, Tap, P. f.; Dol. con  
CHZ. W. - Room + S. M. f.; Dol. con - A. T. f.  
CHZ. W. - Room, Tap; Dol. con - A. T. f.  
CHZ. W. - Room, S. M. f.; Dol. con

CHZ. con + Room, Tap; Dol. con - A. T. f.

X Dol. con - A. T. f.

CHZ. W. - Room, Tap + S. M. f.; Dol. con - A. T. f.  
CHZ. con; Dol. con f.

CHZ. con; Dol. con + sil. SILTY, GUMMY  
Dol. con - A. T. f.; sil. GRAYED con, Dol. LUMPY

Vertical blue scribbles on the left margin.

200

250

300

350

400

450

500

722 722  
95 77  
627 645

Note: The location of this

well should be checked. The map provided by the Company indicates the plant is in the

NE 1/4 sec. 3-82-7W

Elev. should be checked also.

A set of geophysical logs was run 3-23-76. Caliper and radiation logs gave indications of major cavities from 200-220' and 300-320'. These

logs are on file with the Carbonate Hydrology Project data.

3-24-76

Bunker.

LB

722  
+30  

---

292



STATE  
**IOWA**

**Cedar Rapids Polk (Linw) #1**

SESE-NE-NE  
SEC. **3**

TWP. **82N** RGE. **7W**

COMENCED **May 5, 1999** R.E.A. COMPLETED **June 1, 1999**

**Hoes & Ames - Ed Martin**

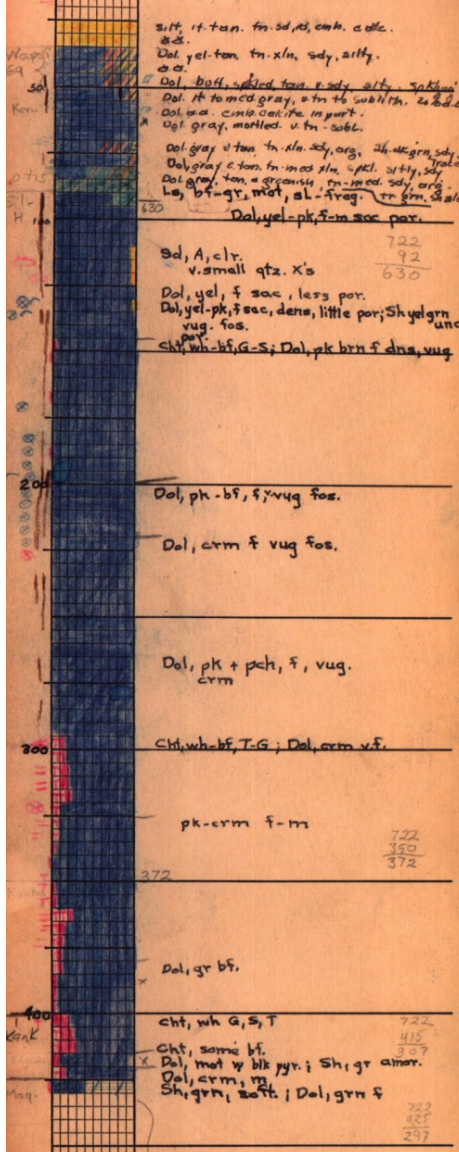
CASING RECORD  
110' of 12" casing cemented in

20" hole - (open 12" well balance)

LOGGED BY **M. Parker**

REMARKS  
Pump setting 290'  
2nd Prod. Test after 1st acid.  
SWL. 24.50'

CE10-6  
for 1/2 hrs. when rate  
was increased to 250 gpm  
well started pumping air



Driller reports shale  
at 432' - TD 439'  
when measured hole  
was found to be  
5' deeper than  
shown on samples.

722  
425  
297

STATE  
Iowa CEDAR RAPIDS (LINN)

NW-SW-NW  
SEC. Central Iowa Power Co-op #3(47)  
2

TWP. RGE. COMMENCED COMPLETED  
82N 7W August 13, 1947

	2		

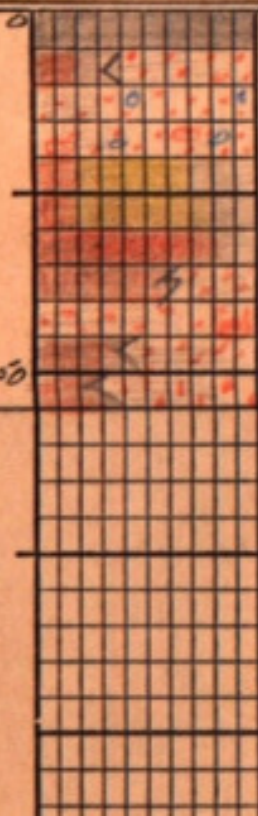
Pella Tank & Pipe Co. Brown & Keel  
CASING RECORD  
cased with 5 3/16" casing (retained)

LOGGED BY  
Aug. 25, 1947 M. Parker

REMARKS  
El. 715.4 No water level data

T.O. 55' Test hole abandoned

CB8-1



Top soil dk. brn. silty sdy.  
sd. fn-med. r.-a dirty clay tan v. sdy.  
so med-crse r.-a. dirty.  
sd. a.a. some gravel  
clay H. gray silty sdy v. silty calc  
a.a.  
Clay H. gray-tan v. sdy.  
clay a.a. r' sd. fn-med a.-r.  
sd. med-crse a.-r. dirty some gravel

715  
55  
---  
660



FORM NO. 79 - In stock and for sale by Mid-West Prtg. Co., Tulsa W-2955

STATE <i>Iowa</i>	<i>CEDAR RAPIDS (LIVAK)</i>
NE-SE-NE SEC. <i>3</i>	<i>Central Iowa Power Coop. Test hole #</i>
TWP. RGE. <i>82N 7W</i>	COMMENCED COMPLETED

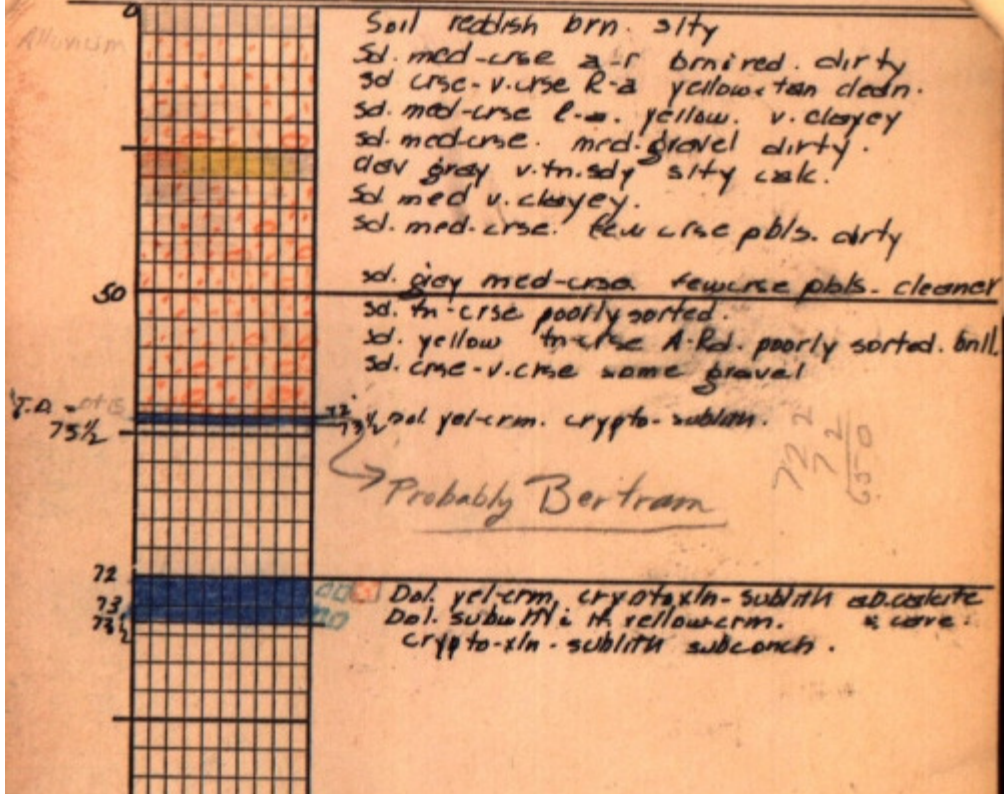
	<i>3</i>		

*Art Bruinekool*  
CASING RECORD  
*5 3/4" casing taken rock*

LOGGED BY  
*Aug 13, 1947 M Parker*

*EL. 722<sup>±</sup>*  
*T.D. 73 1/2*

*CB7-9*



General	Construction	Logs	Stratigraphy	Water	Storage
---------	--------------	------	--------------	-------	---------

Identification		Location	
Date Received		State	Iowa
Owner Name	New Shack Tavern, The	County	Linn
Alt Name		Quadrangle	Cedar Rapids South, Iowa
WNumber	38138	Township	T82N
PWTS ID		Range	R7W
Storet ID		Section	2
SDWIS ID	2409013	Quarter	NW SW NE
USGS ID		Latitude	41.9431790000
Project	SOURCE WATER PROTECTION	Longitude	-91.6330300000
Operator	Unknown	Accuracy	GPS
		UTM X	613311
		UTM Y	4644371

Site		Drilling	
Site Type	Drilled hole	Drilling Company	Unknown
Well Status	Not Used	Drilling Date	
Field Located		Drill Method	Unknown
Elevation	728 ft	Bedrock Depth	
Elevation Accuracy	Digital Elevation Model Accurate to 5 ft	Well Depth	120 ft
Landscape Position	Valley	Total Depth	120 ft
		Well Types	Public Access
		Aquifers	Silurian

**Identification**

**Date Received**  
**Owner Name** New Shack Tavern, The  
**Alt Name**  
**WNumber** 53968  
**PWTS ID**  
**Storet ID**  
**SDWIS ID** 2413414  
**USGS ID**  
**Project** SOURCE WATER PROTECTION  
**Operator** Unknown

**Site**

**Site Type** Drilled hole  
**Well Status** Not Used  
**Field Located**  
**Elevation** 731 ft  
**Elevation Accuracy** Digital Elevation Model  
 Accurate to 5 ft  
**Landscape Position** Valley

**Location**

**State** Iowa  
**County** Linn  
**Quadrangle** Cedar Rapids South, Iowa  
**Township** T82N  
**Range** R7W  
**Section** 2  
**Quarter** NW SW NE  
**Latitude** 41.9431730000  
**Longitude** -91.6332960000  
**Accuracy** GPS +/- 20 m.  
**UTM X** 613289  
**UTM Y** 4644370

**Drilling**

**Drilling Company** Unknown  
**Drilling Date**  
**Drill Method** Unknown  
**Bedrock Depth**  
**Well Depth** 40 ft  
**Total Depth** 40 ft  
**Well Types** Public Access  
**Aquifers** Alluvium



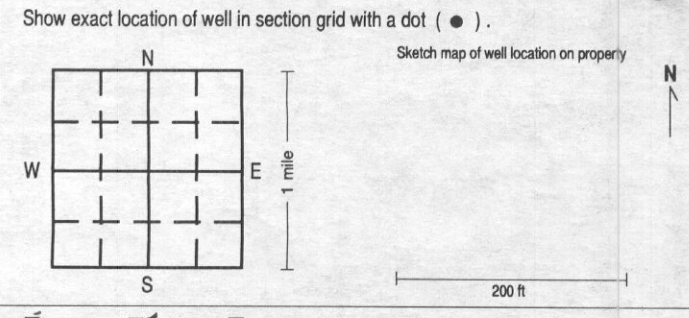
**Site identification**  
 Property Owner Kloubec Aquaculture Well Number \_\_\_\_\_  
 Address 3800 cst SW C.R.  
 Tenant \_\_\_\_\_  
 Well Depth 335 ft Date Completed 7 / 25 / 96

**Drill method**  rotary  auger  cable other \_\_\_\_\_  
**Hole size**  
 18 inch from 0 ft to 20 ft hole size continued  
 6 inch from 100 ft to 335 ft  
 8 inch from 20 ft to 100 ft \_\_\_\_\_ inch from \_\_\_\_\_ ft to \_\_\_\_\_ ft

Record all depth measurements from ground level (GL). Use (+) for above GL measurements.

**Location** County Linn  
 \_\_\_\_\_ mi. N and \_\_\_\_\_ mi. E of intersection of \_\_\_\_\_ and \_\_\_\_\_  
 \_\_\_\_\_ mi. S and \_\_\_\_\_ mi. W  
 1/4 of the \_\_\_\_\_ 1/4 of the \_\_\_\_\_ 1/4 of Sec 3 TWP 82 RNG 7 W

**Casing** Drive shoe  (yes/no) Pitless adaptor  (yes/no)  
 Size (ID/OD) Type / Wt Depth top Depth bottom Amount (length)  
6 SDR 21 PVC +1 100 101  
~~5 1/2 SDR 21 PVC~~  
4 1/2 SCH 40 PVC 95 215 120



**Perforated or slotted casing?**  (yes/no)  
 Perforated / slotted from 175 ft to 215 ft  
 Perforated / slotted from \_\_\_\_\_ ft to \_\_\_\_\_ ft

upland  hillside  valley Elevation (if known) \_\_\_\_\_

**Casing grouted?**  (yes/no)  
 Type Depth Top Depth Bottom Amount  
Benscol 0 20 25ACKS  
Bentonite + Dellenite 20 100

**Formation log**

From	To	Color	Hardness	Formation description
0	38	Yellow		Clay
38	78			Limestone
78	170			Devonian
170	335			Silurian

**Well screen?** (yes/no)   
 Diameter Slot size Depth Top Depth Bottom Length Material  
 \_\_\_\_\_  
 Bottom capped (yes/no)  with \_\_\_\_\_  
 Seals / Packers (yes/no)  kind \_\_\_\_\_ depth \_\_\_\_\_ ft  
 Gravel packed (yes/no)  from \_\_\_\_\_ ft to \_\_\_\_\_ ft  
 type \_\_\_\_\_ amount \_\_\_\_\_

**Well developed?**  (yes/no)  
 Explain A.R.

**Pump installed?**  (yes/no) Date \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 Installer's name SAVE  
 Type of pump sub Depth to intake 200 ft  
 Pump diameter 4 Rated capacity 70 GPM

**Water information** Aquifer:  sand/gravel  limestone  sandstone  
 Main water-supply zone from 175 ft to 335 ft  
 Final water level (static water level) 110 ft  below / above GL.  
 Pumping water level 170 ft below GL;  tape  airline  E-line EST  
 At yield of 100 GPM;  orifice  volumetric  estimate Date 7/25

**Remarks** (including depth of lost drilling fluids, materials, or tools)

**Water quality test?** (yes/no) Date tested \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 Tested by \_\_\_\_\_  
 Test results \_\_\_\_\_

**Well use**  
 Domestic  Municipal  Industrial  
 Livestock  Public Supply  Monitoring  
 Test Well  Irrigation  Other \_\_\_\_\_ (explain)

Contractor Gingerich Well & Pump  
 Address 13210 Locust Ave, Kalona  
 Driller Kit Gingerich Certification no. 40046

## Bedrock Aquifers

The bedrock hydrogeologic map (fig. 26) shows the aquifers and confining beds that make up the bedrock surface in east-central Iowa. Pennsylvanian confining beds are the bedrock in the extreme southwest corner of the area, in southeast Muscatine County and southwest Scott County, and in other small outlying localities. The Mississippian aquifer is found beneath the surficial deposits in most of the southwest part of the region. The Devonian confining beds comprise the bedrock surface in an area about 25 miles wide extending from the northwest corner to the south-central part of the report area. They have been partly or completely removed in parts of the Belle Plaine and Poweshiek buried bedrock channels.

The Devonian aquifer is the bedrock in a broad belt that parallels the northeast side of the Devonian confining beds. This belt is from 12 to 25 miles wide and extends from northern Benton and Linn Counties to the southern border of Muscatine County. The Devonian and Silurian aquifers are separated by an irregular zone of relatively thin shale occurring near the base of the Devonian and represented by a single line on figure 26.

The Silurian aquifer comprises the bedrock surface over most of the eastern half of the area. In the extreme northeastern border area the Ordovician confining beds are found at the bedrock surface. They also appear in several buried bedrock channels where the Silurian aquifer has been removed locally by erosion.

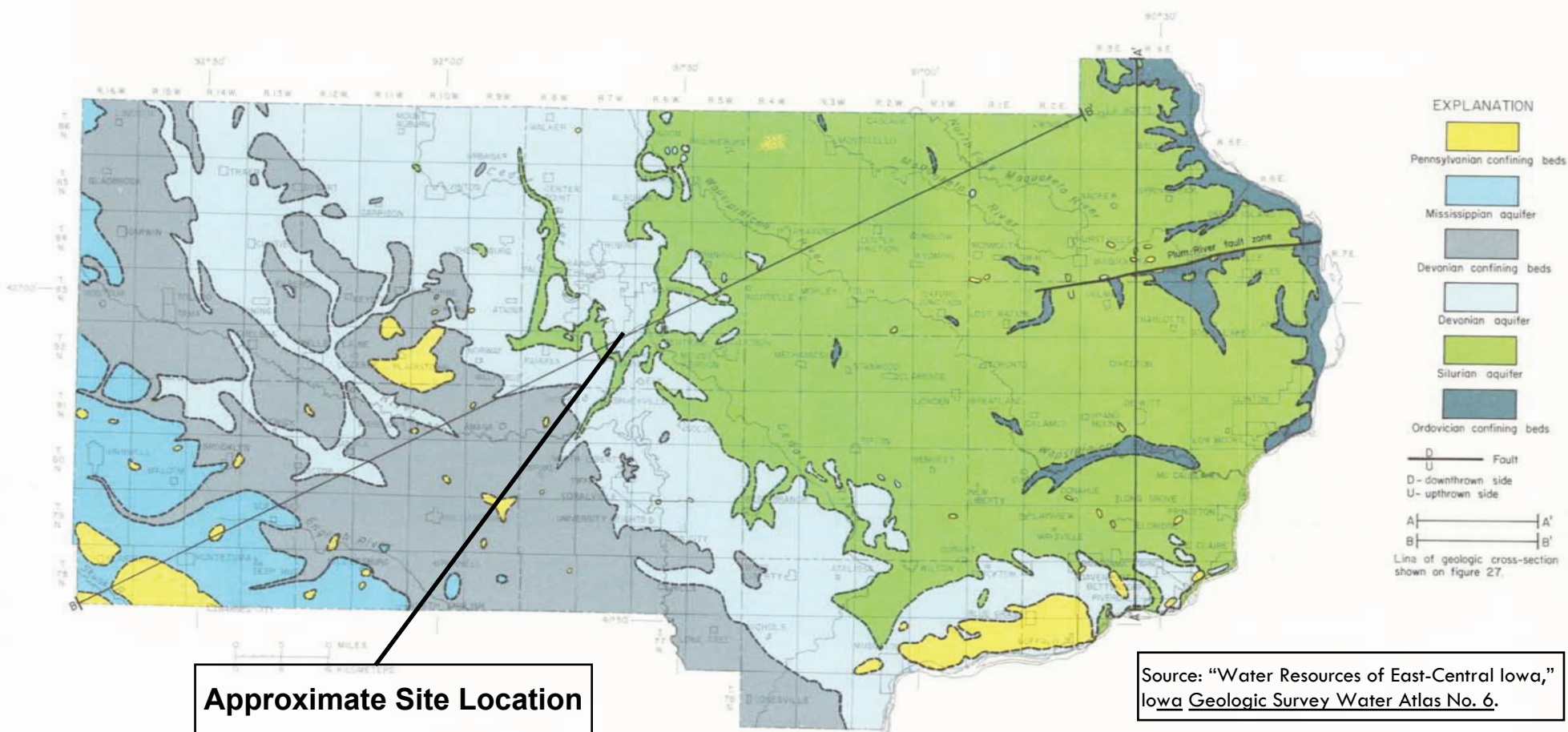


Figure 26.—Bedrock hydrogeologic map



The Cambrian-Ordovician aquifer and the underlying Dresbach aquifer are not at the bedrock surface in east-central Iowa. These aquifers are shallowest in the northeastern part of the area; they slope southwest and become progressively deeper in the subsurface. Figure 27 shows that all the rock units are approximately parallel to each other and dip (slope) toward the southwest.

A major structural feature, the Plum River fault zone, extends approximately 30 miles through southern Jackson County and northwest Clinton County. This structure continues eastward approximately 40 miles into northwest Illinois, where it was originally recognized and mapped (Kolata and Buschbach, 1976). As much as 400 feet of vertical displacement has been inferred by the Illinois State Geological Survey in the vicinity of Savannah, Illinois, and similar displacements may occur in Iowa between Preston and Maquoketa. In the vicinity of Preston, an uplifted area south of the fault zone

is indicated by the anomalous presence of the Ordovician confining beds at the land surface. Preliminary results from an ongoing research drilling program in the Devonian and Silurian aquifers have indicated a possible extension of the structure as far west as southern Linn County, Iowa. The Plum River fault zone is probably quiescent, as no evidence of geologically recent movement along the fault has been found.

The fault zone has cut the various bedrock aquifers and confining beds, and faulting has placed them adjacent to rock units of dissimilar hydrologic characteristics (fig. 27). Depending on the local displacement or associated fracturing, the fault may serve either as a barrier to or a conduit for ground water movement. Where an aquifer is placed against a confining bed the fault may serve as an impediment to ground-water movement. Where two different aquifers are placed against one another by the fault there may be continuity between the two aquifers.

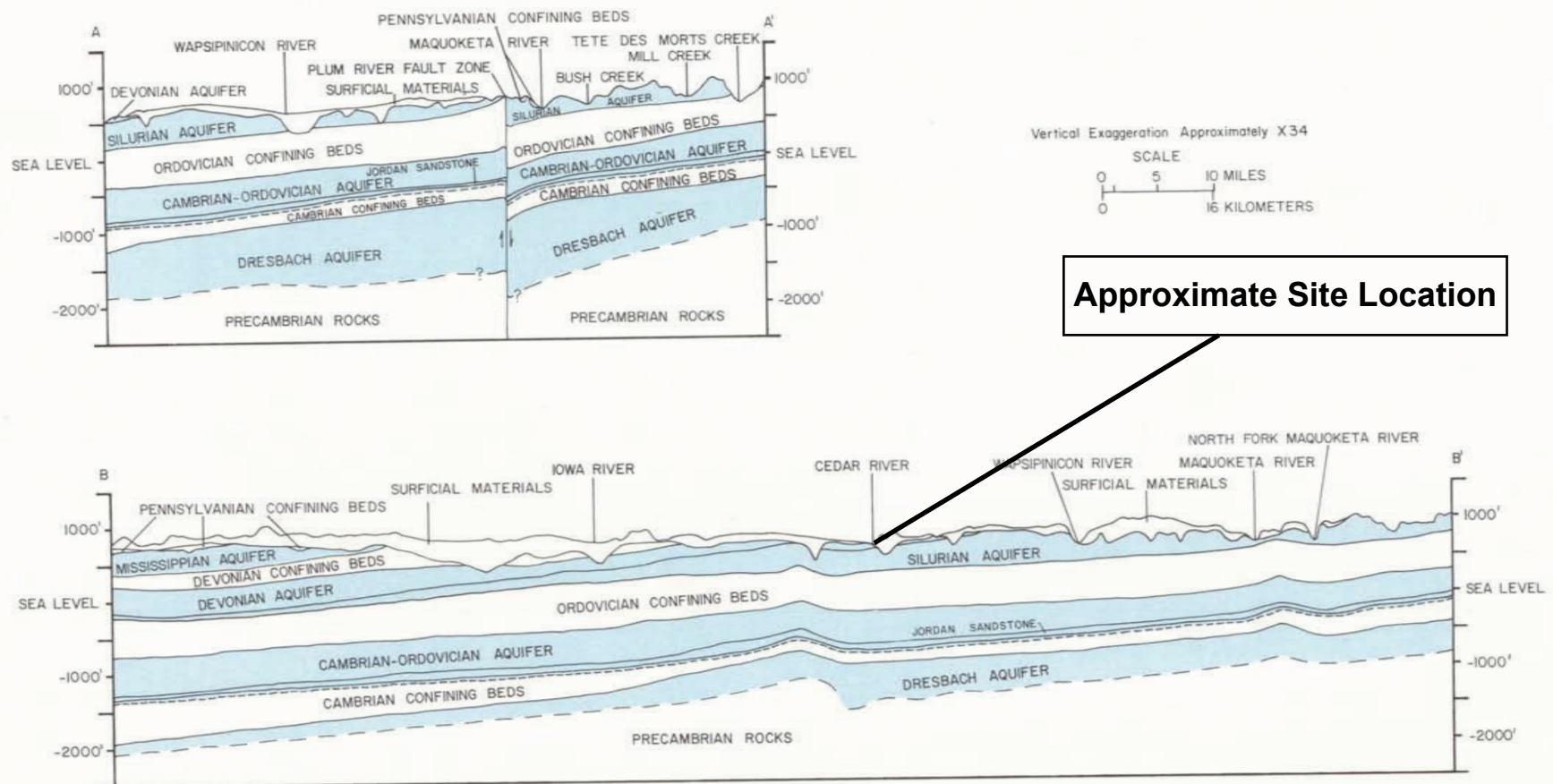



Figure 27.—Hydrogeologic cross sections

Source: "Water Resources of East-Central Iowa," Iowa Geologic Survey Water Atlas No. 6.



Appendix B  
Boring Logs and Well Construction Documentation

**SCS ENGINEERS**

Environmental Consultants and Contractors

**SOIL BORING LOG INFORMATION**

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

Facility/Project Name <b>IPL - Prairie Creek Generating Station SCS#: 25215135.60</b>		License/Permit/Monitoring Number		Boring Number <b>MW-301</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Mike Mueller Cascade Drilling</b>		Date Drilling Started <b>10/31/2016</b>		Date Drilling Completed <b>10/31/2016</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-301</b>	
Final Static Water Level <b>Feet</b>		Surface Elevation <b>730.0 Feet</b>		Borehole Diameter <b>8.5 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		State Plane <b>3,447,401 N, 5,426,409 E S/C/N</b>		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
SW 1/4 of NE 1/4 of Section <b>3, T 82 N, R 7 W</b>		Lat _____ "		Long _____ "	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids</b>	

Sample 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	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			1	TOPSOIL.											
S1	19	3 4 4 6	3-4	SILT WITH SAND, very dark grayish brown (10YR 3/2).	ML			0.5		M					
S2	24	2 7 6 9	6-7	LEAN CLAY WITH SAND, dark grayish brown (10YR 4/2).	CL			0.3		M					
S3	22	3 3 4 6	8-9	POORLY GRADED SAND WITH SILT, dark yellowish brown (10YR 3/4), medium grained.	SP			0.4		M					
S4	23	3 4 4 5	10-11	SANDY SILT, dark yellowish brown (10YR 3/4).	ML			0.3		M					
S5	12	4 9 11 12	13-14	POORLY GRADED GRAVEL, dark yellowish brown (10YR 3/4), coarse grained.	GP			0.3		W					water at 12.5 ft bgs.

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



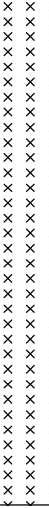

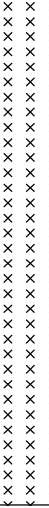

Signature <i>Mike Mueller</i>	Firm <b>SCS Engineers</b> 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
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Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <b>Prairie Creek Generating Station</b> SCS#: 25220057		License/Permit/Monitoring Number		Boring Number <b>MW301A</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Roy Buckenberger Cascade</b>		Date Drilling Started <b>6/23/2020</b>		Date Drilling Completed <b>6/23/2020</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW301A</b>	
Final Static Water Level <b>Feet</b>		Surface Elevation <b>Feet</b>		Borehole Diameter <b>6.0 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input type="checkbox"/> State Plane <b>N, E S/C/N</b>		Lat <b>° ' "</b> Long <b>° ' "</b>		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of		1/4 of Section		T N, R	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids, Iowa</b>	

Sample 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	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1	36		1	Topsoil. 10YR3/4.	ML									
			2	Silt with trace fine sand. 10YR3/4.	ML				1.0	M				
2	36		3						1.0	W				
			4											
	0		10	No Return.										

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

Signature <i>Zach Watson</i>	Firm <b>SCS Engineers</b> 2830 Dairy Dr., Madison, WI, 53718	Tel: Fax:
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Boring Number MW301A

Page 3 of 3


Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
8	60		41	Lean Clay. Stiff and uniform. No coarse material. Grey. 5Y4/1. (continued)	CL				41	1.0	W				
			42												
43															
44															
45															
46															
47															
48															
49															
50															
9	60		51												
			52												
10	48		53												
			54												

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

Facility/Project Name <b>IPL - Prairie Creek Generating Station SCS#: 25215135.60</b>		License/Permit/Monitoring Number		Boring Number <b>MW-302</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Mike Mueller Cascade Drilling</b>		Date Drilling Started <b>10/31/2016</b>		Date Drilling Completed <b>10/31/2016</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-302</b>	
Final Static Water Level <b>Feet</b>		Surface Elevation <b>720.3 Feet</b>		Borehole Diameter <b>8.5 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		State Plane <b>3,447,399 N, 5,426,146 E S/C/N</b>		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
SW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W		Lat _____ ' _____ "		Long _____ ' _____ "	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids</b>	

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					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			1	TOPSOIL.											
			2	SILT WITH SAND, very dark grayish brown (10YR 3/2).											
S1	5	14 89	3		ML			0.5		M					
			4												
			5	SILTY SAND, greenish gray (5GY6/1).	SM										
S2	14	23 37	6	POORLY GRADED SAND, greenish gray (5GY 6/1), coarse grained.				1.0		W					
			7												
			8	Same as above except, dark yellowish brown (10YR 3/4).											
S3	12	12 22	9					0.7		W					
			10												
S4	24	23 46	11		SP			0.5		W					
			12												
			13												
S5	14	12 22	14					0.5		W					
			15												
			16												

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

Signature 	Firm <b>SCS Engineers</b> 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
-----------------------------------------------------------------------------------------------	-----------------------------------------------------------------	-----------------------------





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

Facility/Project Name <b>IPL - Prairie Creek Generating Station SCS#: 25215135.60</b>		License/Permit/Monitoring Number		Boring Number <b>MW-303</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Mike Mueller Cascade Drilling</b>		Date Drilling Started <b>12/6/2016</b>		Date Drilling Completed <b>12/6/2016</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-303</b>	
Final Static Water Level <b>Feet</b>		Surface Elevation <b>707.0 Feet</b>		Borehole Diameter <b>8.5 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		State Plane <b>3,448,275 N, 5,425,166 E S/C/N</b>		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
NW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W		Lat _____"		Long _____"	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids</b>	

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					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	20	20 20 27 34	1	SILT, very dark grayish brown (10YR 3/2).	ML			0.2	M					
			2											
S2	12	2 17 20 21	3	POORLY GRADED SAND, very dark grayish brown (10YR 3/2), coarse grained.	SP			0.2	W					saturation @ 5ft.
			4											
			5											
S3	16	7 8 8 6	6	Same as above except, brown (10YR 5/3), trace fine gravel.	SP			0.2	W					
			7											
S4	17	4 3 3 3	8	End of boring at 15.5 ft bgs.				0.2	W					
			9											
S5	17	1 1 2 3	10											
			11											

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

Signature	Firm <b>SCS Engineers</b> 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
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Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <b>IPL - Prairie Creek Generating Station SCS#: 25215135.60</b>		License/Permit/Monitoring Number		Boring Number <b>MW-304</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Mike Mueller Cascade Drilling</b>		Date Drilling Started <b>12/6/2016</b>		Date Drilling Completed <b>12/6/2016</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-304</b>	
Final Static Water Level <b>Feet</b>		Surface Elevation <b>707.1 Feet</b>		Borehole Diameter <b>8.5 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		State Plane <b>3,448,415 N, 5,425,664 E S/C/N</b>		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
NW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W		Lat _____ ' _____ "		Long _____ ' _____ "	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids</b>	

Sample 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	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	6	50/0.2	1-3	SILT, very dark grayish brown (10YR 3/2),	ML			0.2		M				water in borehole at 3 ft bgs.
S2	5	65/77	4-6					0.3		W				saturation @ 5ft.
S3	5	34/69	7-9	POORLY GRADED SAND, very dark grayish brown, medium to coarse grained.						W				
S4	12	12/22	10-12		SP					W				
S5	23	46/68	13-15	SILTY CLAY, gray.	CL					W				
				End of boring at 15.5 ft bgs.										

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

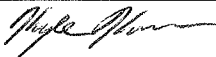
Signature <i>Mike Mueller</i>	Firm <b>SCS Engineers</b> 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
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Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25215135.60		License/Permit/Monitoring Number		Boring Number MW-305	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Mueller Cascade Drilling		Date Drilling Started 12/5/2016		Date Drilling Completed 12/5/2016	
Unique Well No.		DNR Well ID No.		Common Well Name MW-305	
Final Static Water Level Feet		Surface Elevation 707.1 Feet		Borehole Diameter 8.5 in	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location			
State Plane 3,448,467 N, 5,425,930 E S/C/N		Lat _____"		<input type="checkbox"/> N <input type="checkbox"/> E	
NW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W		Long _____"		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids	

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					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	17	13 5 6	1	SILT, very dark grayish brown (10YR 3/2), trace sand.	ML			0.2	M					water in borehole at 3 ft bgs.
			2											
S2	12	13 4 5	3	POORLY GRADED SAND, dark brown (10YR 3/3), coarse sand.	SP			0.1	W					saturation @ 5ft.
			4											
S3	18	11 3 4	5					0.9	W					
			6											
S4	14	9 13 21 19	7					0.4	W					
			8											
S5	16	14 15 23	9	LEAN CLAY, very dark gray (10YR 3/1).	CL				W					
			10											
				End of boring at 15.5 ft bgs.										

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 53711	Tel: (608) 224-2830 Fax:
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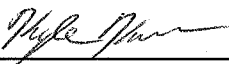
Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <b>IPL - Prairie Creek Generating Station SCS#: 25215135.60</b>		License/Permit/Monitoring Number		Boring Number <b>MW-306</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Mike Mueller Cascade Drilling</b>		Date Drilling Started <b>11/2/2016</b>		Date Drilling Completed <b>11/2/2016</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-306</b>	
Final Static Water Level <b>Feet</b>		Surface Elevation <b>710.1 Feet</b>		Borehole Diameter <b>8.5 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location			
State Plane <b>3,448,572 N, 5,426,326 E S/C/N</b>		Lat _____ " <input type="checkbox"/> N <input type="checkbox"/> E		Feet <input type="checkbox"/> S <input type="checkbox"/> W	
NW 1/4 of NE 1/4 of Section <b>3</b> , T <b>82</b> N, R <b>7</b> W		Long _____ "			

Facility ID	County <b>Linn</b>	Civil Town/City/ or Village <b>Cedar Rapids</b>
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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					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	9.5	4 5 5 5	1	SILT, dark yellowish brown (10YR 3/4).	ML	[Hatched]	[Hatched]	0.7	-	-	-	-	-	Plastic debris- water at 4 ft bgs
			4											
S2	14	11 11	6	SILT, very dark grayish brown (10YR 3/2).		[Hatched]	[Hatched]	0.5						
S3	NR	3 2 1 1	9		ML	[Hatched]	[Hatched]	-						plastic debris
S4	NR	1 1 2 3	11			[Hatched]	[Hatched]	-						
S5	10	1 2 3 3	14	POORLY GRADED SAND, very dark gray (10YR 3/1), coarse grained.	SP	[Hatched]	[Hatched]	0.1						plastic and glass debris

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

Signature 	Firm <b>SCS Engineers</b> 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
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Boring Number MW-306

Page 2 of 2

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S6	22	21 11	17	POORLY GRADED SAND, very dark gray (10YR 3/1), coarse grained. (continued)				0.4	W				plastic debris	
			18											
S7	19	21 11	19					0.3	W					
			20											
S8	6	21 12	21					0.2	W					
			22											
S9	14	8 4 4 12	23	Same as above except, dark gray (5Y 4/1).	SP			0.6	W					
			24											
			25											
S10	20	4 4 15 22	26					0.3	W					
			27											
			28											
S11	12	8 8 20 31	29					0.2	W					
			30											
				End of boring at 30.5 ft bgs.										

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

Facility/Project Name <b>Prairie Creek Generating Station</b>		SCS#: 25220057		License/Permit/Monitoring Number		Boring Number <b>MW306A</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Roy Buckenberger Cascade</b>				Date Drilling Started <b>6/23/2020</b>		Date Drilling Completed <b>6/23/2020</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW306A</b>		Final Static Water Level <b>Feet</b>	
						Surface Elevation <b>Feet</b>	
						Borehole Diameter <b>6.0 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input type="checkbox"/> State Plane <b>N, E S/C/N</b>				Lat _____ ° ' _____ "		Local Grid Location	
1/4 of _____		1/4 of Section _____, T _____ N, R _____		Long _____ ° ' _____ "		<input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids, Iowa</b>			

Sample 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	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
1	60		0	Topsoil. Organic Material.	ML										
			1	Waste. Plastic wrapping. Soil.											
			2												
2	60		3	Tan/Brown soil/silt. 10YR3/4.	ML										
			4												
			5	Dark Black Sand and Silt. Well Graded. 10YR2/1.	SW										
3	60		6												
			7												
			8	Well Graded Sand. Light Grey. 2.5Y3/1.	SW										
			9												
			10												
			11												
			12	Silt with fine sand.	ML										
			13												
			14												
			15												

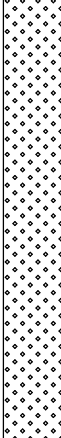





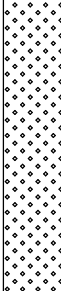

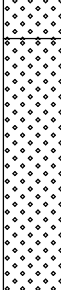

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature <i>Zach Watson</i>	Firm <b>SCS Engineers</b> 2830 Dairy Dr., Madison, WI, 53718	Tel: Fax:
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Boring Number MW306A

Page 2 of 3

Sample		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					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
4	60		16	Well graded sand. 2.5Y3/1.	SW									
			17											
			18											
			19											
5	60		20	Silt with Sand. 5Y4/2.	ML									
			21											
			22											
			23											
6	60		24	Well Graded Sand.	SW									
			25											
			26											
			27											
7	60		28	Well Graded Sand.	SW									
			29											
			30											
			31											
8	60		32	Finer sand than above.	SW									
			33											
			34											
			35											



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

Facility/Project Name <b>Prairie Creek Generating Station</b> SCS#: 25218184		License/Permit/Monitoring Number	Boring Number <b>MW-307</b>
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Mike Mueller Cascade Drilling, LP</b>		Date Drilling Started <b>11/27/2018</b>	Date Drilling Completed <b>11/27/2018</b>
Common Well Name <b>MW-307</b>		Final Static Water Level <b>708.5 Feet</b>	Surface Elevation <b>718.9 Feet</b>
		Borehole Diameter <b>6.5 in</b>	

Local Grid Origin  (estimated: ) or Boring Location

State Plane **3,448,497 N, 5,426,934 E** S/C/N Lat \_\_\_\_\_ "  N  E  
**NE 1/4 of NE 1/4 of Section 3, T 83 N, R 7 W** Long \_\_\_\_\_ "  S  W

Facility ID \_\_\_\_\_ County **Linn** Civil Town/City/ or Village **Cedar Rapids**

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					RQD/ Comments	
										Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
				1	Topsoil and clay, black, (10YR 2/1), (Fill).											
	S1			2												
				3												
				4												
				5	Black ash? (Fill).											
				6	LEAN CLAY, black (10YR 2/1), (Fill).	CL										
	S2			7	SILT, dark gray/black, (5YR 3/1).											
				8		ML										
	S3			9	LEAN CLAY, dark gray, (5YR 2.5/2).											
				10												
	S4			11		CL										
				12												
				13												
	S5			14	SILTY SAND, coarse sand, light brown, (2.5YR 3/1).	SM										
				15												

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

Signature  Firm **SCS Engineers** 3900 Kilroy Airport Way Long Beach, CA 90806 Tel: \_\_\_\_\_ Fax: \_\_\_\_\_






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

Facility/Project Name <b>Prairie Creek Generating Station</b>		License/Permit/Monitoring Number SCS#: 25218184		Boring Number <b>MW-308</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Mike Mueller Cascade Drilling, LP</b>		Date Drilling Started <b>11/27/2018</b>		Date Drilling Completed <b>11/27/2018</b>	
Common Well Name <b>MW-308</b>		Final Static Water Level <b>711.5 Feet</b>		Surface Elevation <b>717.5 Feet</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		Final Static Water Level		Borehole Diameter <b>6.5 in</b>	
State Plane <b>3,448,434 N, 5,426,646 E</b>		S/C/N <b>S/C/N</b>		Local Grid Location	
NE 1/4 of NE 1/4 of Section <b>3, T 83 N, R 7 W</b>		Lat _____"		<input type="checkbox"/> N <input type="checkbox"/> E	
		Long _____"		<input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids</b>	

Sample 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	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			1	Topsoil, black.											
S1			2	LEAN CLAY, black, (2.5YR 2.5/1), (Fill).	CL										
S2			4	LEAN CLAY, brown, (2.5YR 4/4), (Fill).	CL				1.5						
S3			6	Ash, black, (2.5YR 3/1), (Fill).											
S4			8	LEAN CLAY with silt, gray, (5YR 5/1).											
S5			9		CL										
S6			11	SANDY SILT, dark gray, (5YR 2.5/1).											
			12		ML										
S7			14	Same as above but (5YR 2.5/2).											
			15												

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

Signature 	Firm <b>SCS Engineers</b> 3900 kilroy Airport Way Long Beach, CA 90806	Tel: Fax:
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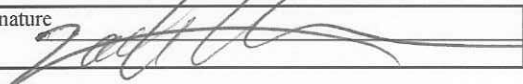


Route To:  Watershed/Wastewater  Waste Management   
 Remediation/Redevelopment  Other

Facility/Project Name <b>IPL - Prairie Creek Generating Station SCS#: 25218218.00</b>		License/Permit/Monitoring Number		Boring Number <b>MW-309</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Jeff Crank Roberts Environmental Drilling, Inc.</b>		Date Drilling Started <b>8/5/2019</b>		Date Drilling Completed <b>8/5/2019</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-309</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		Final Static Water Level <b>Feet MSL</b>		Surface Elevation <b>708.1 Feet MSL</b>	
State Plane <b>3,448,466 N, 5,425,409 E S/C/N</b>		Lat _____ " _____ "		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
NW 1/4 of NE 1/4 of Section <b>3</b> , T <b>82</b> N, R <b>7</b> W		Long _____ " _____ "		Feet _____ Feet _____	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids</b>	

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					RQD/ Comments				
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200					
S1	8	13 34	1	SILT, dark brown, (10YR 2/1), with sand, trace gravel.	ML													
S2	18	33 23	2	SILTY SAND.	SM													
S3	12	11 12	3	SILT, with sand, brown, (10YR 3/2), soft.	ML													
S4	12	22 12	4	SILTY SAND, mottled grey, tan, and brown.	SM													
S5	20	01 21	5	Variable color - grey, rust, and tan.	SM													
S6	12	00 11	6	Coarser sand.	SM													
S7	12	11 33	7	POORLY GRADED SAND, coarse, some fine and medium sand.	SP													
			8	With organic material.	SP													
			9															
			10															
			11															
			12															
			13															
			14															
			15															

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

Signature 	Firm <b>SCS Engineers</b>	Tel: Fax:
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Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <b>Prairie Creek Generating Station</b>		SCS#: 25220057		License/Permit/Monitoring Number		Boring Number <b>MW309A</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Roy Buckenberger Cascade</b>				Date Drilling Started <b>7/23/2020</b>		Date Drilling Completed <b>7/23/2020</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW309A</b>		Final Static Water Level <b>Feet</b>	
						Surface Elevation <b>Feet</b>	
						Borehole Diameter <b>6.0 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input type="checkbox"/> State Plane <b>N, E S/C/N</b>				Lat <b>° ' "</b>		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of 1/4 of Section , T N, R				Long <b>° ' "</b>		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids, Iowa</b>			

Sample 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	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1	60		1	Topsoil. Organic material, roots, trace coarse material. 10YR2/1.	ML									
			2											
			3											
			4											
			5											
2	60		6	Silty Sand. Fine to medium grained sand. Well Graded. 10YR3/4.	SM									
			7											
			8											
			9											
			10											
3	60		11	Well graded Gravel with sand. Four inch lens of silt with sand. 7.5YR2/1. Well Graded sand with gravel towards base (14-15 feet).	GW									
			12											
			13											
			14											
			15											

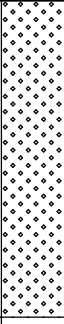
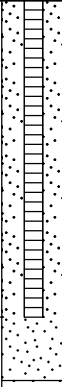
I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature <i>Zach Watson</i>	Firm <b>SCS Engineers</b> 2830 Dairy Dr., Madison, WI, 53718	Tel: Fax:
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Boring Number MW309A

Page 3 of 3

Sample		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					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
9	60		41 42 43 44 45 46	Well graded Sand. Fine to coarse grained sand. 2.5Y3/2. <i>(continued)</i>	SW					W				



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

Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25218218.00		License/Permit/Monitoring Number		Boring Number MW-310	
Boring Drilled By: Name of crew chief (first, last) and Firm Jeff Crank Roberts Environmental Drilling, Inc.			Date Drilling Started 8/6/2019		Date Drilling Completed 8/6/2019
Drilling Method 4 1/4" hollow stem auger	WI Unique Well No.	DNR Well ID No.	Common Well Name MW-310	Final Static Water Level Feet MSL	Surface Elevation 708.09 Feet MSL
Borehole Diameter 8.5 in.	Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>	State Plane 3,448,623 N, 5,425,792 E S/C/N	Lat _____ ' _____ "	Local Grid Location	Feet <input type="checkbox"/> N _____ Feet <input type="checkbox"/> E
NW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W	Long _____ ' _____ "	Feet <input type="checkbox"/> S _____ Feet <input type="checkbox"/> W	County Linn	County Code	Civil Town/City/ or Village Cedar Rapids

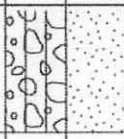
Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties						RQD/ Comments			
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200					
S1	12	12 24	1	SILTY SAND, brown, (10YR 2/1), (topsoil).	SM													
S2	2	66 44	3	LEAN CLAY, brown, (10YR 2/1), some lenses of silty sand, organic material.	CL													
S3	10	44 23	5															
S4	6	31 12	7	SILTY SAND, coarse.	SM													
S5	20	32 11	9															
S6	18	32 11	11	SILTY GRAVEL, with sand.	GM													
S7	12	11 22	13															

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:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Boring Number **MW-310** Use only as an attachment to Form 4400-122. Page **2** of **2**

Sample	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	Soil Properties					RQD/ Comments			
										Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200				
	SS	12	15 4 3	16 17		GM					W							
					End of Boring.													Blind drilled from 16' to 17'

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

Facility/Project Name <b>Prairie Creek Generating Station</b>		SCS#: 25220057		License/Permit/Monitoring Number		Boring Number <b>MW310A</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Roy Buckenberger Cascade</b>				Date Drilling Started <b>7/23/2020</b>		Date Drilling Completed <b>7/23/2020</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW310A</b>		Final Static Water Level <b>Feet</b>	
						Surface Elevation <b>Feet</b>	
						Borehole Diameter <b>6.0 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input type="checkbox"/> State Plane <b>N, E S/C/N</b>				Lat <b>° ' "</b>		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of 1/4 of Section , T N, R				Long <b>° ' "</b>		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	
Facility ID		County <b>Linn</b>		Civil Town/City/ or Village <b>Cedar Rapids, Iowa</b>			











Sample 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	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1	60		1	Topsoil. Organic material, roots and plant material.	ML									
			2	Lean Clay. Soft, trace coarse material. 2.5Y3/2.	CL									
2	60		3						0.5	W				
			4											
3	60		5	Fine to Coarse Sand. Well Graded Sand. 2.5Y3/1.	SW					W				
			6											

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

Signature <i>Zach Watson</i>	Firm <b>SCS Engineers</b> 2830 Dairy Dr., Madison, WI 53718	Tel: Fax:
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Boring Number MW310A

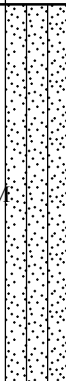
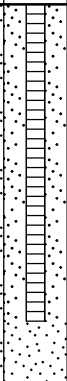
Page 2 of 3

Sample		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					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
4	60		16	Lean Clay, trace coarse material (Fine Sand). 5Y4/1.	CL				1.5	W				
			17											
			18											
			19											
5	60		20	Well graded sand with silt and gravel. 5Y4/2.	SW-SM					W				
			21											
			22											
			23											
			24											
			25											
6	60		26	Well graded sand with silt and gravel. 5Y4/2.	SW-SM					W				
			27											
			28											
			29											
			30											
			31											
7	60		32	Silt with gravel.	ML					W				
			33											
			34											
			35											
8	60		36	Well graded sand with silt and gravel. 5Y4/2.	SW-SM					W				
			37											
			38											
			39											
			40											



Boring Number MW310A

Page 3 of 3

Sample		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					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
9	60		41 42 43 44 45 46	Well graded sand with silt and gravel. 5Y4/2. (continued)	SW-SM					W				

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

Facility/Project Name <b>Prairie Creek Generating Station</b> SCS#: 25222074.00		License/Permit/Monitoring Number		Boring Number <b>MW-311</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Duncan List Terracon</b>		Date Drilling Started <b>5/9/2022</b>		Date Drilling Completed <b>5/9/2022</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-311</b>	
Final Static Water Level <b>10.84 Feet MSL</b>		Surface Elevation <b>721.6 Feet MSL</b>		Borehole Diameter <b>8.25" in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input type="checkbox"/> State Plane <b>3,447,992 N, 5,426,118 E S/C/N</b>		Lat <u>    </u> ° <u>    </u> ' <u>    </u> "		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of <u>    </u> 1/4 of Section <u>    </u> , T <u>    </u> N, R <u>    </u>		Long <u>    </u> ° <u>    </u> ' <u>    </u> "		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	

Facility ID	County <b>Linn</b>	Civil Town/City/ or Village <b>Cedar Rapids</b>
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Sample 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	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			1-8	Hydrovaced through gravel, sand, and silt, black to gray.											
S1	12	3 5 5 5	9	POORLY GRADED SAND, fine to coarse grained, gray to black.	SP										
S2	12	3 5 5 5	11	SILT, black with roots.	ML										
S3	14	2 3 3 5	13	POORLY GRADED SAND, fine to coarse grained, gray with trace silt.	SP										
			14	Same as above but transitions to brown at 14 feet below ground surface (bgs).											

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

Signature 	Firm <b>SCS Engineers</b> 3900 Kilroy Airport Way Long Beach, CA 90806	Tel: Fax:
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Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <b>Prairie Creek Generating Station</b> SCS#: 25222074.00		License/Permit/Monitoring Number		Boring Number <b>MW-312</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Duncan List Terracon</b>		Date Drilling Started <b>5/9/2022</b>		Date Drilling Completed <b>5/9/2022</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-312</b>	
Final Static Water Level <b>703.85 Feet MSL</b>		Surface Elevation <b>709.0 Feet MSL</b>		Borehole Diameter <b>8.25" in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input type="checkbox"/> State Plane <b>3,448,197 N, 5,424,656 E S/C/N</b>		Lat <b>_____ ° _____ ' _____ "</b>		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of <b>_____</b> 1/4 of Section <b>_____</b> , T <b>_____</b> N, R <b>_____</b>		Long <b>_____ ° _____ ' _____ "</b>		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	

Facility ID	County <b>Linn</b>	Civil Town/City/ or Village <b>Cedar Rapids</b>
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Sample 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	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
S1	17	23 22	1	SILT WITH SAND, dark brown (topsoil).	ML										
S2	17	52 23	2	SILT, black with roots.	ML										
S3	21	21 11	3	SILTY SAND, black.	SM										
S4	20	21 10	4	POORLY GRADED SAND, fine to coarse grained, gray with a thin lense of black silt around 7.6' below ground surface.											
S5	14	21 11	5	Same as above but mottled, medium brown to gray with trace gravel.	SP										
S6	16	1 WH 11	6	No recovery.											
S7	0	WH 1 11	7	No recovery.											
			8	No recovery.											
			9	No recovery.											
			10	No recovery.											
			11	No recovery.											
			12	No recovery.											
			13	No recovery.											
			14	No recovery.											
			15	No recovery.											


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

Signature 	Firm <b>SCS Engineers</b> 3900 Kilroy Airport Way Long Beach, CA 90806	Tel: Fax:
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Boring Number **MW-312**

Page **2** of **2**

Sample		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					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S8	0		16	End of boring at 16' below ground surface.										



IOWA DEPARTMENT OF NATURAL RESOURCES  
**MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM**

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: \_\_\_\_\_  
 Well or Piezometer No: MW-301  
 Dates Started: 10/31/16 Date Completed: 10/31/16

**A. SURVEYED LOCATIONS AND ELEVATIONS**

Locations ( $\pm 0.5$  ft): \_\_\_\_\_  
 Specify corner of site: SE of parcel 19031-51001-00000  
 Distance & direction along boundary: 145' W  
 Distance & direction from boundary to wall: 76' N  
 Elevations ( $\pm 0.01$  ft MSL): \_\_\_\_\_  
 Ground Surface: 729.95  
 Top of protective casing: 732.97  
 Top of well casing: \_\_\_\_\_ 732.55  
 Benchmark elevation: \_\_\_\_\_  
 Benchmark description: \_\_\_\_\_

**B. SOIL BORING INFORMATION**

Name & Address of Construction Company: \_\_\_\_\_  
Cascade Drilling, LP  
301 Alderson St  
Schofield, WI 54476  
 Name of Driller: Mike Mueller  
 Drilling Method: HSA  
 Drilling Fluid: NA  
 Bore Hole Diameter: 8.5 inch  
 Soil Sampling Method: Spoon  
 Depth of Boring: 23.5 ft

**C. MONITORING WELL INSTALLATION**

Casing material: \_\_\_\_\_ PVC sch 40  
 Length of casing: \_\_\_\_\_ 12.5 ft  
 Outside casing diameter: \_\_\_\_\_ 2.38"  
 Inside casing diameter: \_\_\_\_\_ 2"  
 Casing joint type: \_\_\_\_\_ threaded  
 Casing/screen joint type: threaded  
 Screen material: \_\_\_\_\_ PVC  
 Screen opening size: 0.010"  
 Screen length: \_\_\_\_\_ 10 ft  
 Depth of well: \_\_\_\_\_ 22.5 ft  
 Filter Pack: \_\_\_\_\_  
 Material: \_\_\_\_\_ Red Flint  
 Grain size: \_\_\_\_\_ #40  
 Volume: \_\_\_\_\_ 300 lbs  
 Seal (minimum 3 ft length above filter pack): \_\_\_\_\_  
 Material: 3/8 inch bentonite chips

Placement method: Gravity  
 Volume: 200 lbs  
 Backfill (if different from seal): \_\_\_\_\_  
 Material: \_\_\_\_\_  
 Placement method: \_\_\_\_\_  
 Volume: \_\_\_\_\_  
 Surface seal design: \_\_\_\_\_  
 Material of protective casing: Steel 6 inch  
 Material of grout between protective casing and well casing: sand  
 Protective cap: \_\_\_\_\_  
 Material: Steel, vented  
 Vented:  Yes  No Locking:  Yes  No  
 Well Cap: \_\_\_\_\_  
 Material: PVC  
 Vented:  Yes  No

**D. GROUNDWATER MEASUREMENT ( $\pm 0.01$  ft below top of inner well casing)**

Water level: 16.27 Stabilization Time: ~5 min  
 Well development method: Pump and surge block  
 Average depth of frostline: \_\_\_\_\_

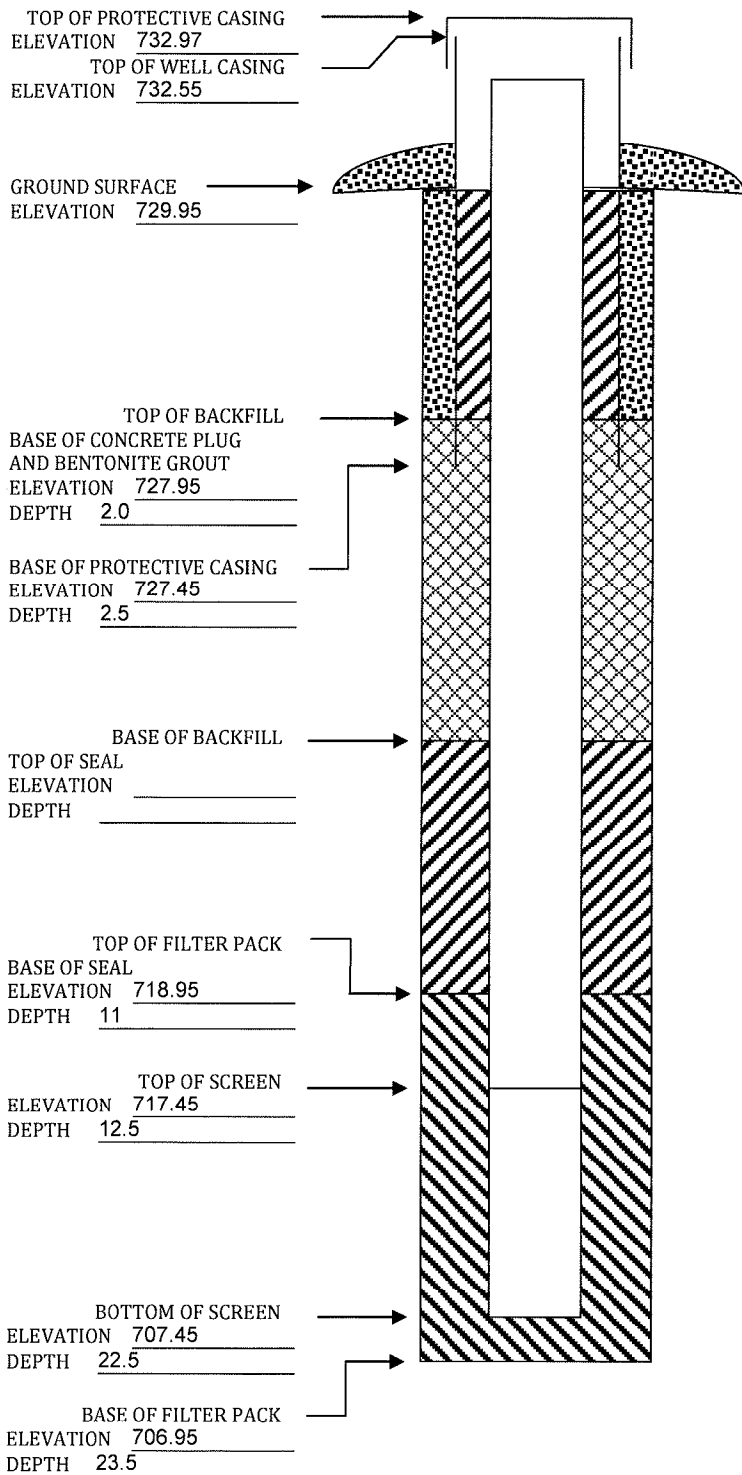
**Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

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

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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.)





IOWA DEPARTMENT OF NATURAL RESOURCES  
**MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM**

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: \_\_\_\_\_

Well or Piezometer No: MW-302

Dates Started: 10/31/16 Date Completed: 10/31/16

**A. SURVEYED LOCATIONS AND ELEVATIONS**

Locations ( $\pm 0.5$  ft): \_\_\_\_\_

Specify corner of site: SE of parcel 19031-51001-00000

Distance & direction along boundary: 462' W

Distance & direction from boundary to wall: 79' N

Elevations ( $\pm 0.01$  ft MSL): \_\_\_\_\_

Ground Surface: 720.29

Top of protective casing: 723.27

Top of well casing: \_\_\_\_\_ 722.68

Benchmark elevation: \_\_\_\_\_

Benchmark description: \_\_\_\_\_

**B. SOIL BORING INFORMATION**

Name & Address of Construction Company: \_\_\_\_\_

Cascade Drilling, LP

301 Alderson St

Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: NA

Bore Hole Diameter: 8.5 inch

Soil Sampling Method: Spoon

Depth of Boring: 23.5 ft

**C. MONITORING WELL INSTALLATION**

Casing material: \_\_\_\_\_ PVC sch 40

Length of casing: \_\_\_\_\_ 5 ft

Outside casing diameter: \_\_\_\_\_ 2.38"

Inside casing diameter: \_\_\_\_\_ 2"

Casing joint type: \_\_\_\_\_ threaded

Casing/screen joint type: threaded

Screen material: \_\_\_\_\_ PVC

Screen opening size: 0.010"

Screen length: \_\_\_\_\_ 10 ft

Depth of well: \_\_\_\_\_ 15 ft

Filter Pack: \_\_\_\_\_

Material: \_\_\_\_\_ Red Flint

Grain size: \_\_\_\_\_ #40

Volume: \_\_\_\_\_ 300 lbs

Seal (minimum 3 ft length above filter pack): \_\_\_\_\_

Material: 3/8 inch bentonite chips

Placement method: Gravity

Volume: 50 lbs

Backfill (if different from seal): \_\_\_\_\_

Material: \_\_\_\_\_

Placement method: \_\_\_\_\_

Volume: \_\_\_\_\_

Surface seal design: \_\_\_\_\_

Material of protective casing: Steel 6 inch

Material of grout between protective casing and well casing: sand

Protective cap: \_\_\_\_\_

Material: Steel, vented

Vented:  Yes  No Locking:  Yes  No

Well Cap: \_\_\_\_\_

Material: PVC

Vented:  Yes  No

**D. GROUNDWATER MEASUREMENT ( $\pm 0.01$  ft below top of inner well casing)**

Water level: 6.39 Stabilization Time: ~5 min

Well development method: Pump and surge block

Average depth of frostline: \_\_\_\_\_

**Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

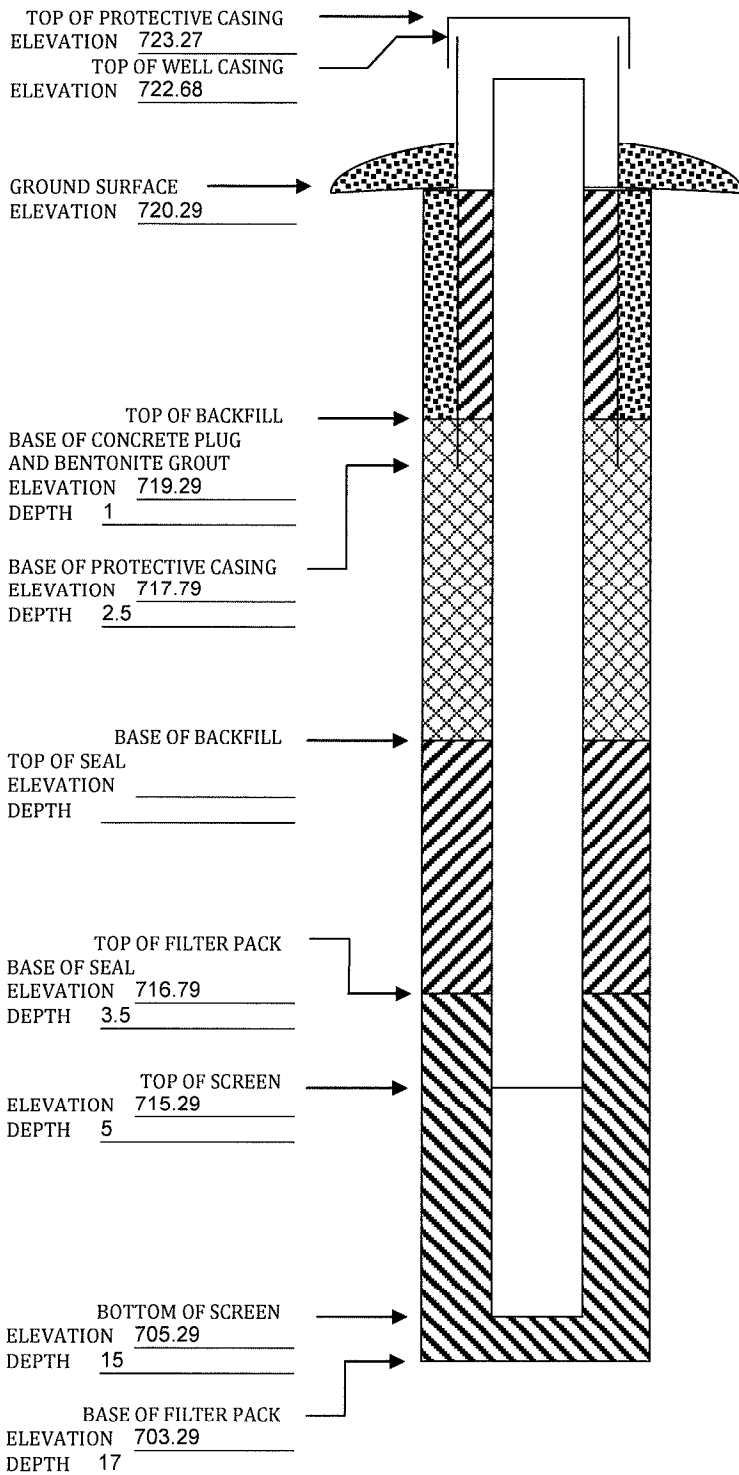
**Please mail completed for to:** Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9<sup>th</sup> St, Des Moines IA 50319-0034.

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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.)





IOWA DEPARTMENT OF NATURAL RESOURCES  
**MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM**

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: \_\_\_\_\_  
 Well or Piezometer No: MW-303  
 Dates Started: 12/6/16 Date Completed: 12/6/16

**A. SURVEYED LOCATIONS AND ELEVATIONS**

Locations ( $\pm 0.5$  ft): \_\_\_\_\_  
 Specify corner of site: NE of parcel 19032-01001-00000  
 Distance & direction along boundary: 2,348' NW  
 Distance & direction from boundary to wall: 1,477' S  
 Elevations ( $\pm 0.01$  ft MSL): \_\_\_\_\_  
 Ground Surface: 706.95  
 Top of protective casing: 709.85  
 Top of well casing: \_\_\_\_\_ 709.46  
 Benchmark elevation: \_\_\_\_\_  
 Benchmark description: \_\_\_\_\_

**B. SOIL BORING INFORMATION**

Name & Address of Construction Company: \_\_\_\_\_  
Cascade Drilling, LP  
301 Alderson St  
Schofield, WI 54476  
 Name of Driller: Mike Mueller  
 Drilling Method: HSA  
 Drilling Fluid: NA  
 Bore Hole Diameter: 8.5 inch  
 Soil Sampling Method: Spoon  
 Depth of Boring: 15.5 ft

**C. MONITORING WELL INSTALLATION**

<p>Casing material: _____ <u>PVC sch 40</u>          Length of casing: _____ <u>4.5 ft</u>          Outside casing diameter: _____ <u>2.38"</u>          Inside casing diameter: _____ <u>2"</u>          Casing joint type: _____ <u>threaded</u>          Casing/screen joint type: <u>threaded</u>          Screen material: _____ <u>PVC</u>          Screen opening size: <u>0.010"</u>          Screen length: _____ <u>10 ft</u>          Depth of well: _____ <u>14.5 ft</u>          Filter Pack: _____          Material: _____ <u>Red Flint</u>          Grain size: _____ <u>#40</u>          Volume: _____ <u>300 lbs</u>          Seal (minimum 3 ft length above filter pack): _____          Material: <u>3/8 inch bentonite chips</u></p>	<p>Placement method: <u>Gravity</u>          Volume: <u>50 lbs</u>          Backfill (if different from seal): _____          Material: _____          Placement method: _____          Volume: _____          Surface seal design: _____          Material of protective casing: <u>Steel 6 inch</u>          Material of grout between protective casing and well casing: <u>sand</u>          Protective cap: _____          Material: <u>Steel, vented</u>          Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Locking: <input type="checkbox"/> Yes <input type="checkbox"/> No          Well Cap: _____          Material: <u>PVC</u>          Vented: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
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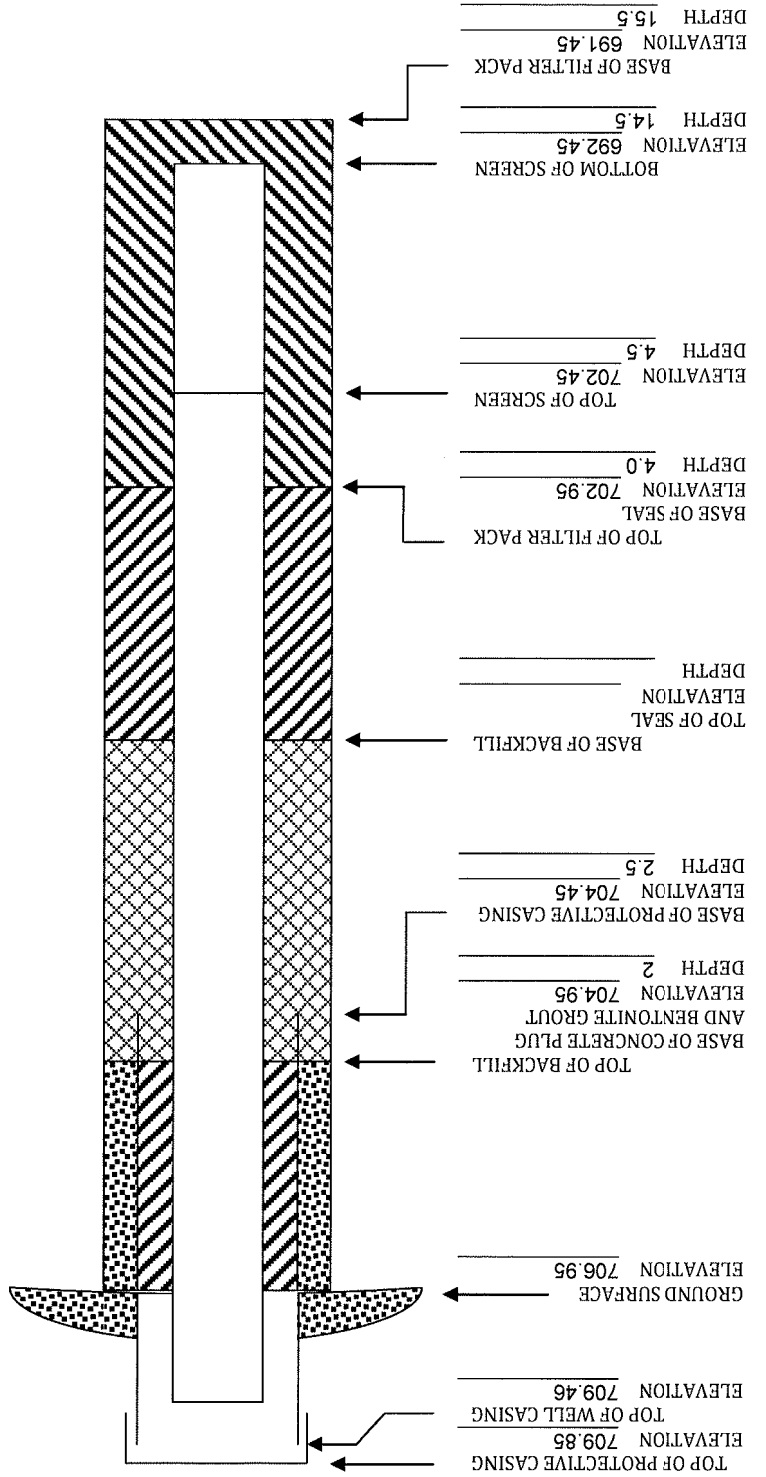
**D. GROUNDWATER MEASUREMENT ( $\pm 0.01$  ft below top of inner well casing)**

Water level: 5.81 Stabilization Time: ~ 5 min  
 Well development method: Pump and surge block  
 Average depth of frostline: \_\_\_\_\_

**Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2x11 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 9<sup>th</sup> St, Des Moines IA 50319-0034.

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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.)



IOWA DEPARTMENT OF NATURAL RESOURCES  
**MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM**

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: \_\_\_\_\_  
 Well or Piezometer No: MW-304  
 Dates Started: 12/6/16 Date Completed: 12/6/16

**A. SURVEYED LOCATIONS AND ELEVATIONS**

Locations ( $\pm 0.5$  ft): \_\_\_\_\_  
 Specify corner of site: NE of parcel 19032-01001-00000  
 Distance & direction along boundary: 1878' NW  
 Distance & direction from boundary to wall: 1,317' S  
 Elevations ( $\pm 0.01$  ft MSL): \_\_\_\_\_  
 Ground Surface: 707.07  
 Top of protective casing: 710.12  
 Top of well casing: \_\_\_\_\_ 709.66  
 Benchmark elevation: \_\_\_\_\_  
 Benchmark description: \_\_\_\_\_

**B. SOIL BORING INFORMATION**

Name & Address of Construction Company: \_\_\_\_\_  
Cascade Drilling, LP  
301 Alderson St  
Schofield, WI 54476  
 Name of Driller: Mike Mueller  
 Drilling Method: HSA  
 Drilling Fluid: NA  
 Bore Hole Diameter: 8.5 inch  
 Soil Sampling Method: Spoon  
 Depth of Boring: 15.5 ft

**C. MONITORING WELL INSTALLATION**

Casing material: <u>PVC sch 40</u>	Placement method: <u>Gravity</u>
Length of casing: <u>4.5 ft</u>	Volume: <u>50 lbs</u>
Outside casing diameter: <u>2.38"</u>	Backfill (if different from seal): _____
Inside casing diameter: <u>2"</u>	Material: _____
Casing joint type: <u>threaded</u>	Placement method: _____
Casing/screen joint type: <u>threaded</u>	Volume: _____
Screen material: <u>PVC</u>	Surface seal design: _____
Screen opening size: <u>0.010"</u>	Material of protective casing: <u>Steel 6 inch</u>
Screen length: <u>10 ft</u>	Material of grout between protective casing and well casing: <u>sand</u>
Depth of well: <u>14.5 ft</u>	Protective cap: _____
Filter Pack: _____	Material: <u>Steel, vented</u>
Material: <u>Red Flint</u>	Vented: <input type="checkbox"/> Yes <input type="checkbox"/> No      Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Grain size: <u>#40</u>	Well Cap: _____
Volume: <u>300 lbs</u>	Material: <u>PVC</u>
Seal (minimum 3 ft length above filter pack): _____	Vented: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Material: <u>3/8 inch bentonite chips</u>	

**D. GROUNDWATER MEASUREMENT ( $\pm 0.01$  ft below top of inner well casing)**

Water level: 5.89 Stabilization Time: ~ 5 min  
 Well development method: Bailer and surge block  
 Average depth of frostline: \_\_\_\_\_

**Attachments: Driller's log, Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

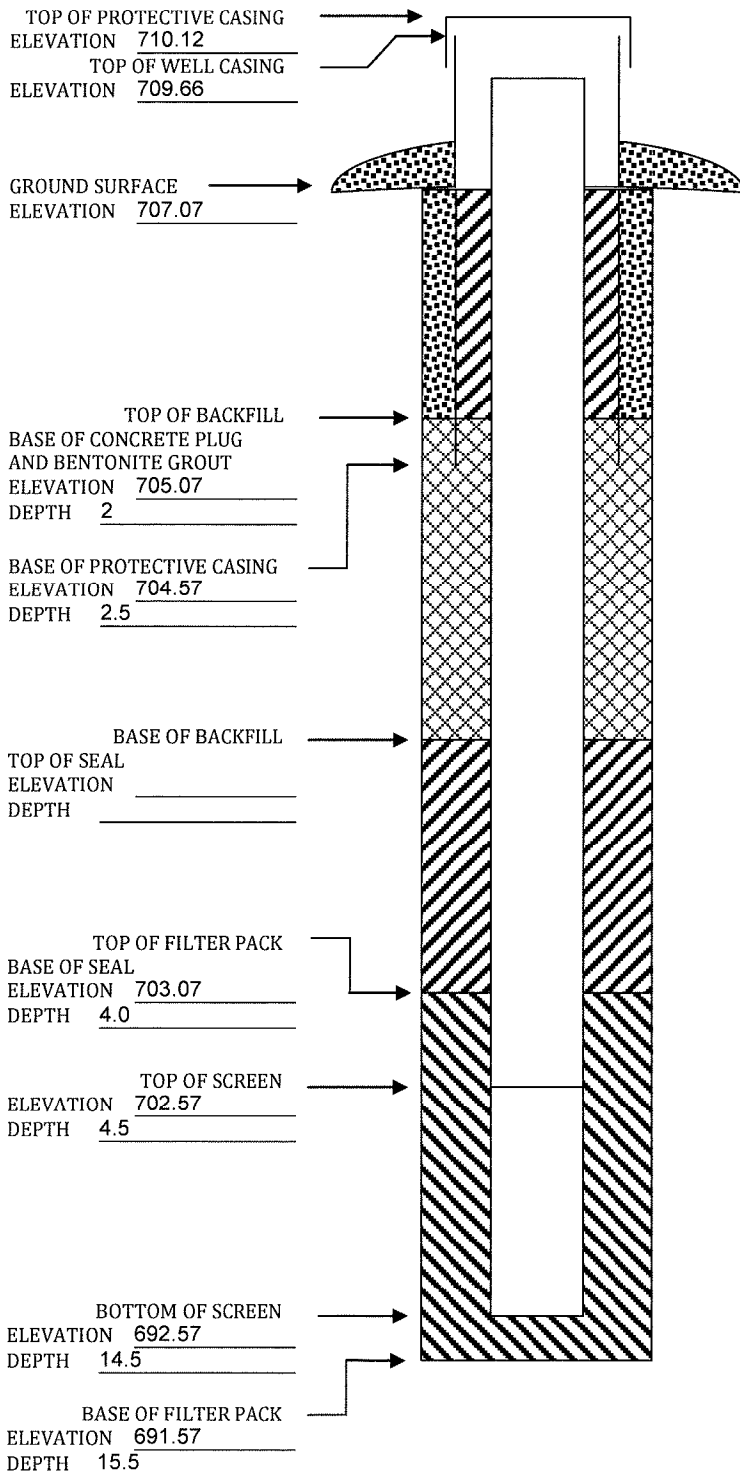
**Please mail completed for to:** Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9<sup>th</sup> St, Des Moines IA 50319-0034.

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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.)





IOWA DEPARTMENT OF NATURAL RESOURCES  
**MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM**

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: \_\_\_\_\_

Well or Piezometer No: MW-305

Dates Started: 12/5/16 Date Completed: 12/5/16

A. SURVEYED LOCATIONS AND ELEVATIONS	B. SOIL BORING INFORMATION
Locations ( $\pm 0.5$ ft): Specify corner of site: <u>NE of parcel 19032-01001-00000</u>	Name & Address of Construction Company: <u>Cascade Drilling, LP</u>
Distance & direction along boundary: <u>1,594' NW</u>	<u>301 Alderson St</u>
Distance & direction from boundary to wall: <u>1,274' S</u>	<u>Schofield, WI 54476</u>
Elevations ( $\pm 0.01$ ft MSL):	Name of Driller: <u>Mike Mueller</u>
Ground Surface: <u>707.11</u>	Drilling Method: <u>HSA</u>
Top of protective casing: <u>710.11</u>	Drilling Fluid: <u>NA</u>
Top of well casing: _____ <u>709.61</u>	Bore Hole Diameter: <u>8.5 inch</u>
Benchmark elevation: _____	Soil Sampling Method: <u>Spoon</u>
Benchmark description: _____	Depth of Boring: <u>15.5 ft</u>

C. MONITORING WELL INSTALLATION	
Casing material: _____ <u>PVC sch 40</u>	Placement method: <u>Gravity</u>
Length of casing: _____ <u>4.5 ft</u>	Volume: <u>50 lbs</u>
Outside casing diameter: _____ <u>2.38"</u>	Backfill (if different from seal): _____
Inside casing diameter: _____ <u>2"</u>	Material: _____
Casing joint type: _____ <u>threaded</u>	Placement method: _____
Casing/screen joint type: <u>threaded</u>	Volume: _____
Screen material: _____ <u>PVC</u>	Surface seal design: _____
Screen opening size: <u>0.010"</u>	Material of protective casing: <u>Steel 6 inch</u>
Screen length: _____ <u>10 ft</u>	Material of grout between protective casing and well casing: <u>sand</u>
Depth of well: _____ <u>14.5 ft</u>	Protective cap: _____
Filter Pack: _____	Material: <u>Steel, vented</u>
Material: _____ <u>Red Flint</u>	Vented: <input type="checkbox"/> Yes <input type="checkbox"/> No      Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Grain size: _____ <u>#40</u>	Well Cap: _____
Volume: _____ <u>250 lbs</u>	Material: <u>PVC</u>
Seal (minimum 3 ft length above filter pack): _____	Vented: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Material: <u>3/8 inch bentonite chips</u>	

D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ ft below top of inner well casing)	
Water level: <u>5.68</u>	Stabilization Time: <u>~5 min</u>
Well development method: <u>Bailer and surge block</u>	
Average depth of frostline: _____	

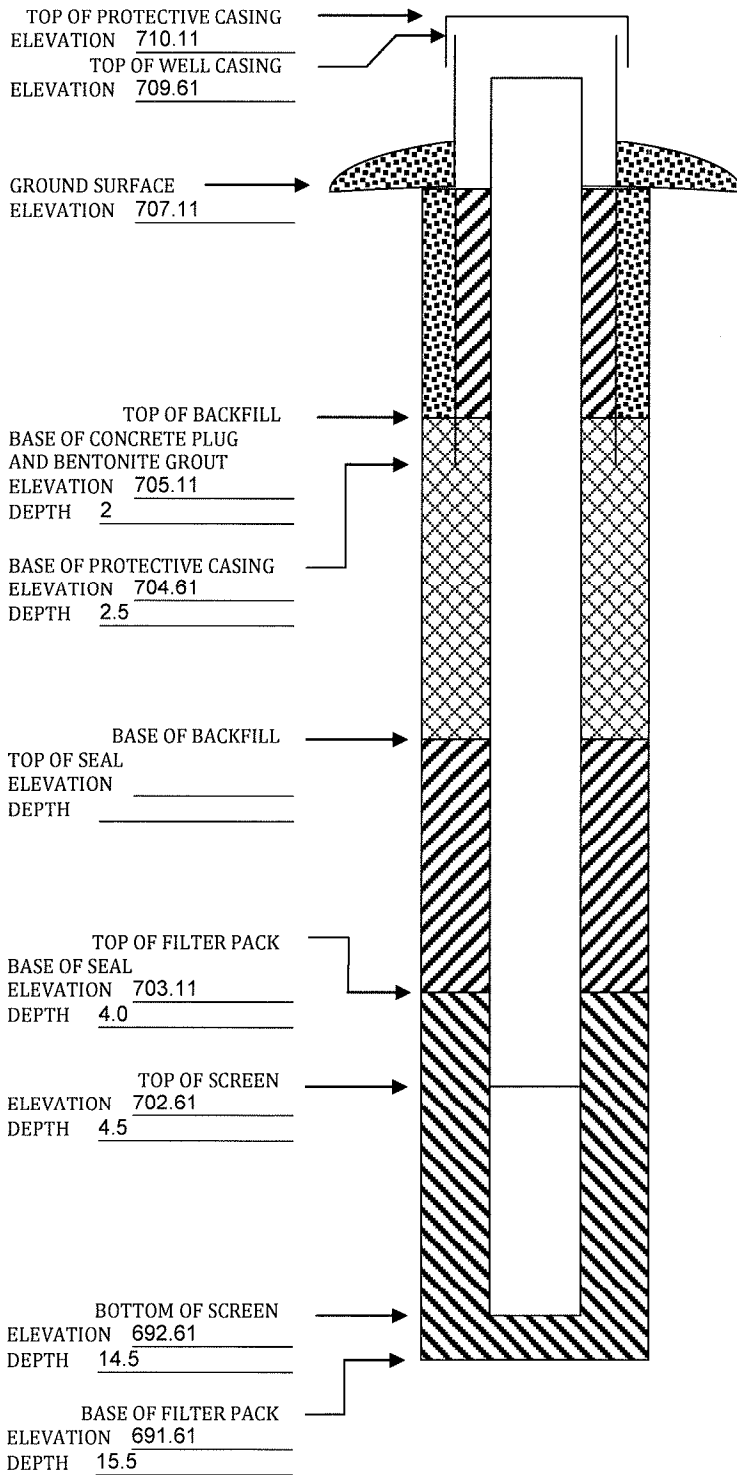
**Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

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

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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.)





IOWA DEPARTMENT OF NATURAL RESOURCES  
**MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM**

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: \_\_\_\_\_

Well or Piezometer No: MW-306

Dates Started: 11/2/16 Date Completed: 11/2/16

**A. SURVEYED LOCATIONS AND ELEVATIONS**

Locations ( $\pm 0.5$  ft): \_\_\_\_\_

Specify corner of site: NE of parcel 19032-01001-00000

Distance & direction along boundary: 1,203' NW

Distance & direction from boundary to wall: 1,205' S

Elevations ( $\pm 0.01$  ft MSL): \_\_\_\_\_

Ground Surface: 710.13

Top of protective casing: 712.9

Top of well casing: \_\_\_\_\_ 712.54

Benchmark elevation: \_\_\_\_\_

Benchmark description: \_\_\_\_\_

**B. SOIL BORING INFORMATION**

Name & Address of Construction Company: \_\_\_\_\_

Cascade Drilling, LP

301 Alderson St

Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: NA

Bore Hole Diameter: 8.5 inch

Soil Sampling Method: Spoon

Depth of Boring: 30.5 ft

**C. MONITORING WELL INSTALLATION**

Casing material: PVC sch 40

Length of casing: 24.5 ft

Outside casing diameter: 2.38"

Inside casing diameter: 2"

Casing joint type: threaded

Casing/screen joint type: threaded

Screen material: PVC

Screen opening size: 0.010"

Screen length: 5 ft

Depth of well: 29.5 ft

Filter Pack: \_\_\_\_\_

Material: Red Flint

Grain size: #40

Volume: 150 lbs

Seal (minimum 3 ft length above filter pack): \_\_\_\_\_

Material: 3/8 inch bentonite chips

Placement method: Gravity

Volume: 500 lbs

Backfill (if different from seal): \_\_\_\_\_

Material: \_\_\_\_\_

Placement method: \_\_\_\_\_

Volume: \_\_\_\_\_

Surface seal design: \_\_\_\_\_

Material of protective casing: Steel 6 inch

Material of grout between protective casing and well casing: sand

Protective cap: \_\_\_\_\_

Material: Steel, vented

Vented:  Yes  No Locking:  Yes  No

Well Cap: \_\_\_\_\_

Material: PVC

Vented:  Yes  No

**D. GROUNDWATER MEASUREMENT ( $\pm 0.01$  ft below top of inner well casing)**

Water level: 8.75 Stabilization Time: ~ 5 min

Well development method: Bailer and surge block

Average depth of frostline: \_\_\_\_\_

**Attachments: Driller's log, Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

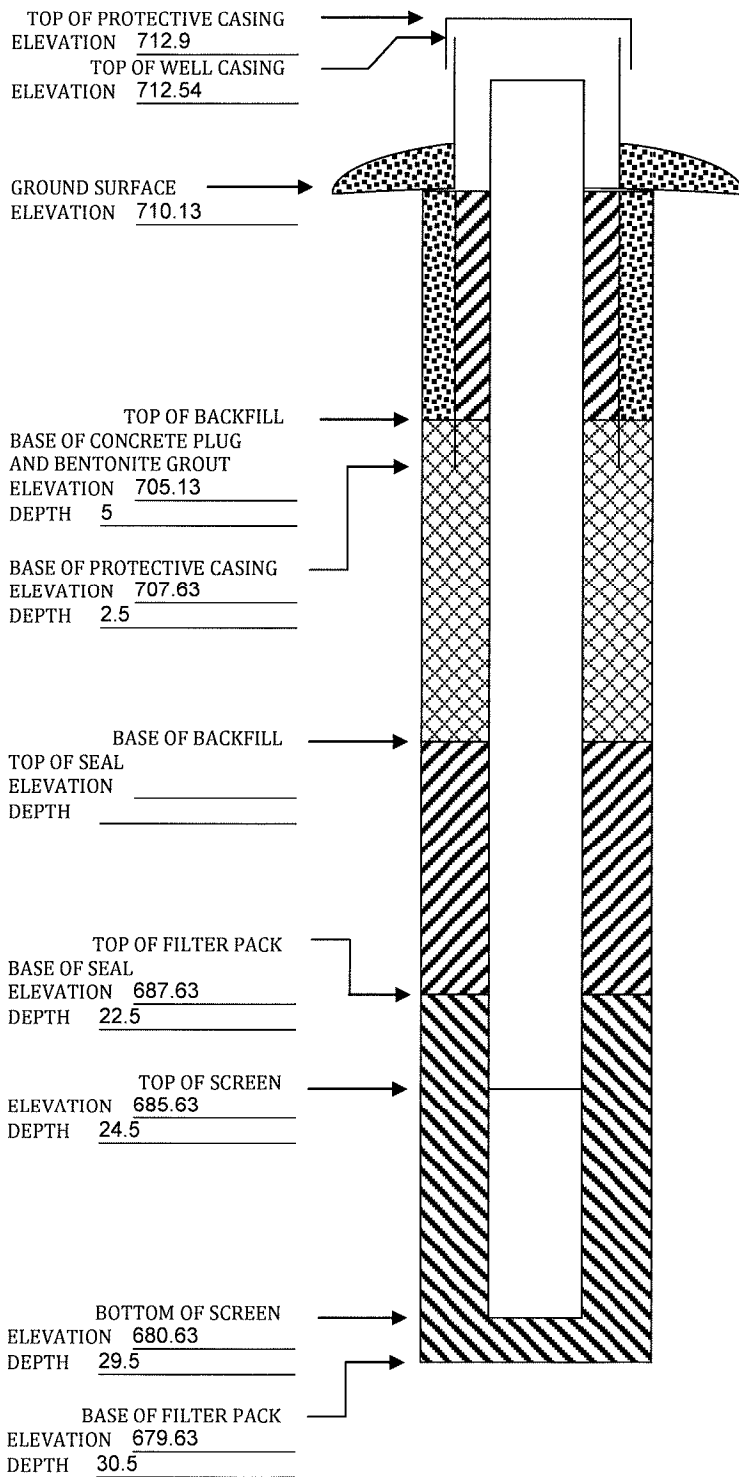
**Please mail completed for to:** Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9<sup>th</sup> St, Des Moines IA 50319-0034.

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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 Prairie Creek Generating Station Permit No. PPW18-0051  
Well or Piezometer No. MW-307 Dates Started 11/27/2018 Date Completed 11/27/2018

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

Specify corner of site NE Distance and direction along boundary 1,140 W  
Distance and direction from boundary to surface monitoring well 5 S  
Elevation (+0.01 ft. MSL) \_\_\_\_\_  
Ground Surface 718.89 Top of protective casing 721.35  
Top of well casing 721.16 Benchmark elevation 718.58  
Benchmark description CP #5

## B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling LP  
Address 301 Anderson St City, State, Zip Code Schofield, WI 54476  
Name of driller Mike Mueller  
Drilling method Sonic Drilling fluid NA Bore Hole diameter 6.5"  
Soil sampling method Sonic soil core Depth of boring 21

## C. MONITORING WELL INSTALLATION

Casing material PVC Sch. 40 Placement method Gravity  
Length of casing 13.3' Volume 1.8 cu. ft  
Outside casing diameter 2.38" Backfill (if different from seal): NA  
Inside casing diameter 2" Material \_\_\_\_\_  
Casing joint type Threaded Placement method \_\_\_\_\_  
Casing/screen joint type Threaded Volume \_\_\_\_\_  
Screen material PVC Sch. 40 Surface seal design: \_\_\_\_\_  
Screen opening size 0.01" Material of protective casing: 6 inch Steel  
Material of grout between protective casing and well casing: Bent. chips below grade  
Screen length 10 ft Protective cap: \_\_\_\_\_  
Depth of Well 21' Material Steel  
Filter Pack: \_\_\_\_\_ Vented?:  Y  N Locking?:  Y  N  
Material Red Flint Sand Well cap: \_\_\_\_\_  
Grain Size #40 Material PVC  
Volume 2.5 cu. ft Vented?:  Y  N  
Seal (minimum 3 ft. length above filter pack): \_\_\_\_\_  
Material 3/8" Bentonite Chips

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

Water level 13.12' Stabilization time <5 minutes  
Well development method Surged and pumped until water ran clear, removed ~400 gallons.  
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.

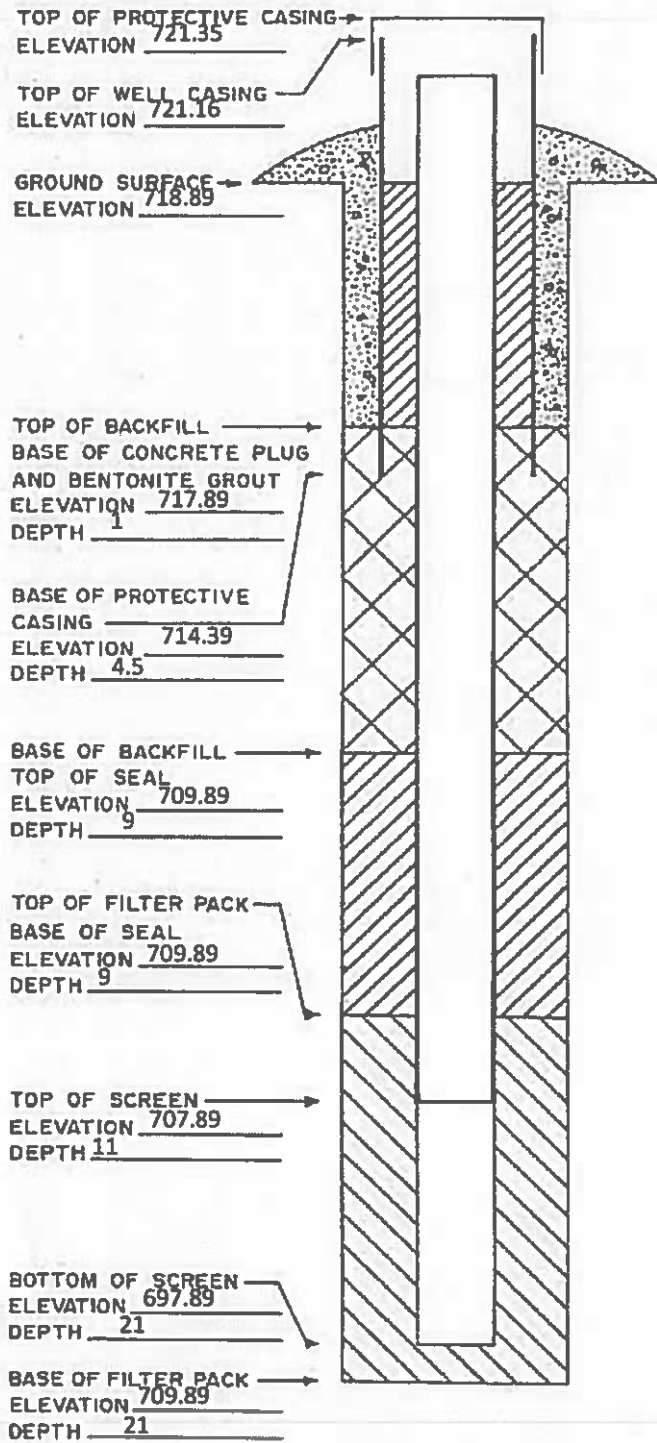
Signature  Certification # 9362 Date 11/27/18

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 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. 9<sup>th</sup> St, Des Moines, IA 50319.  
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, [nina.booker@dnr.iowa.gov](mailto:nina.booker@dnr.iowa.gov)  
09/2017 cmc

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 Prairie Creek Generating Station Permit No. PPW18-0051  
Well or Piezometer No. MW-308 Dates Started 11/27/2018 Date Completed 11/27/2018

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

Specify corner of site NE Distance and direction along boundary 950' W  
Distance and direction from boundary to surface monitoring well 5 S  
Elevation (+0.01 ft. MSL) \_\_\_\_\_  
Ground Surface 717.46 Top of protective casing 719.98  
Top of well casing 719.67 Benchmark elevation 718.58  
Benchmark description CP #5

## B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling LP  
Address 301 Anderson St City, State, Zip Code Schofield, WI 54476  
Name of driller Mike Mueller  
Drilling method Sonic Drilling fluid NA Bore Hole diameter 6.5"  
Soil sampling method Sonic soil core Depth of boring 21

## C. MONITORING WELL INSTALLATION

Casing material <u>PVC Sch. 40</u>	Placement method <u>Gravity</u>
Length of casing <u>13.2'</u>	Volume <u>1.8 cu. ft</u>
Outside casing diameter <u>2.38"</u>	Backfill (if different from seal): <u>NA</u>
Inside casing diameter <u>2"</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type <u>Threaded</u>	Volume _____
Screen material <u>PVC Sch. 40</u>	Surface seal design: _____
Screen opening size <u>0.01"</u>	Material of protective casing: <u>6 inch Steel</u>
Screen length <u>10 ft</u>	Material of grout between protective casing and well casing: <u>Bent. chips below grade</u>
Depth of Well <u>21'</u>	Protective cap: _____
Filter Pack: _____	Material <u>Steel</u>
Material <u>Red Flint Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Grain Size <u>#40</u>	Well cap: _____
Volume <u>2.5 cu. ft</u>	Material <u>PVC</u>
Seal (minimum 3 ft. length above filter pack): _____	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material <u>3/8" Bentonite Chips</u>	

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

Water level 14.49' Stabilization time <5 minutes  
Well development method Surged and pumped until water ran clear, removed ~475 gallons.  
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.

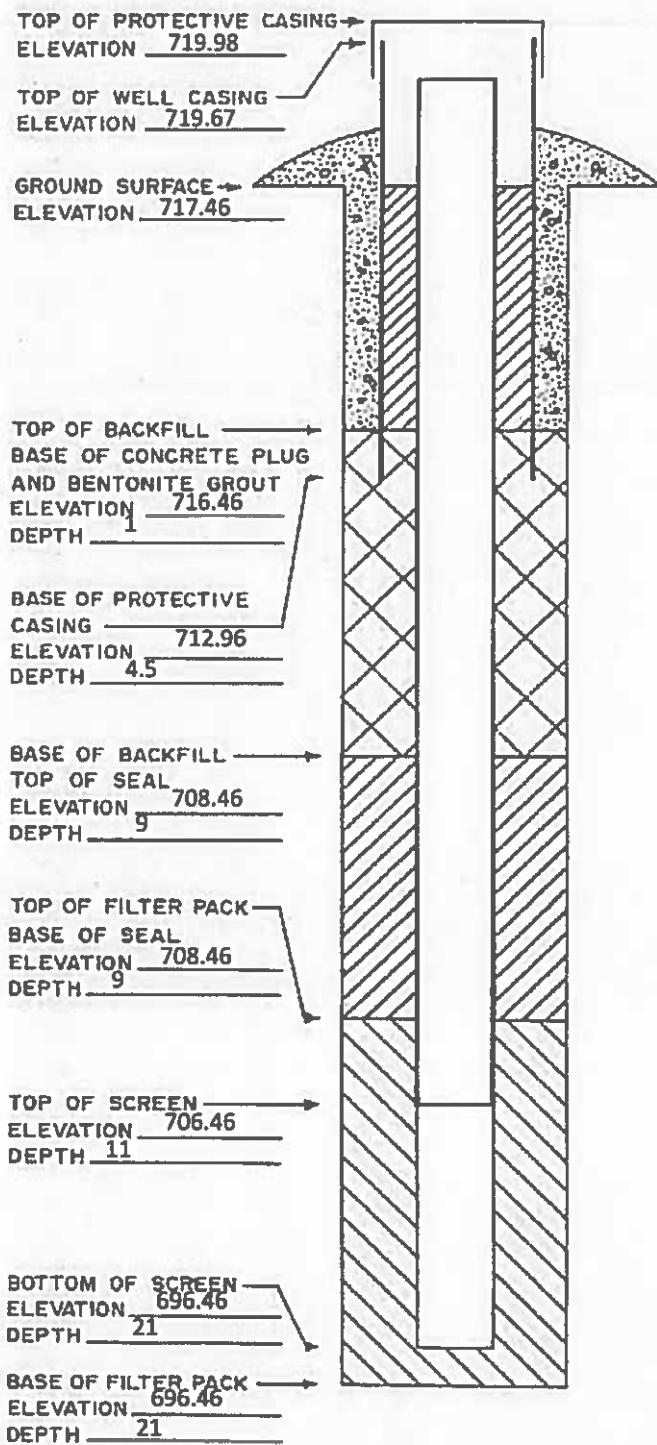
Signature [Signature] Certification # 9362 Date 11/27/18

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 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. 9<sup>th</sup> St, Des Moines, IA 50319.  
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, [nina.booker@dnr.iowa.gov](mailto:nina.booker@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 Prairie Creek Generating Station Permit No. \_\_\_\_\_  
Well or Piezometer No. MW301A Dates Started 6/23/2020 Date Completed 6/24/2020

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

Specify corner of site SE of parcel 19031-51001-00 Distance and direction along boundary 145' W  
Distance and direction from boundary to surface monitoring well 80' N  
Elevation (+0.01 ft. MSL) \_\_\_\_\_  
Ground Surface 729.40 Top of protective casing 732.45  
Top of well casing 732.07 Benchmark elevation \_\_\_\_\_  
Benchmark description On-site benchmark. NAVD\_88 datum elevations.

## B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling  
Address 301 Alderson St. City, State, Zip Code Schofield, WI, 54476  
Name of driller Mike Mueller  
Drilling method Rotosonic Drilling fluid Water Bore Hole diameter 6 inches  
Soil sampling method 5 foot sections Depth of boring 54 feet

## C. MONITORING WELL INSTALLATION

Casing material <u>PVC</u>	Placement method <u>Tremie Pipe</u>
Length of casing <u>56 feet</u>	Volume <u>7.5 cubic feet</u>
Outside casing diameter <u>2.4 inches</u>	Backfill (if different from seal): <u>None</u>
Inside casing diameter <u>2.0 inches</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type _____	Volume _____
Screen material <u>PVC</u>	Surface seal design: <u>Cememt</u>
Screen opening size <u>0.01 inches</u>	Material of protective casing: <u>Steel</u>
	Material of grout between protective casing and well casing: <u>Bentonite and Filter Sand</u>
Screen length <u>5 feet</u>	Protective cap: _____
Depth of Well <u>53 feet below ground surface</u>	Material <u>Aluminium</u>
Filter Pack: <u>Red Flint Filter Pack Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material <u>Sand</u>	Well cap: _____
Grain Size _____	Material <u>Plastic</u>
Volume <u>1.3 cubic feet</u>	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Seal (minimum 3 ft. length above filter pack): <u>Bentonite Grout</u>	
Material <u>Bentonite Grout</u>	

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

Water level 27.75 Stabilization time <5 minutes  
Well development method Surged & purged  
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 # 9362 Date 6-24-2020

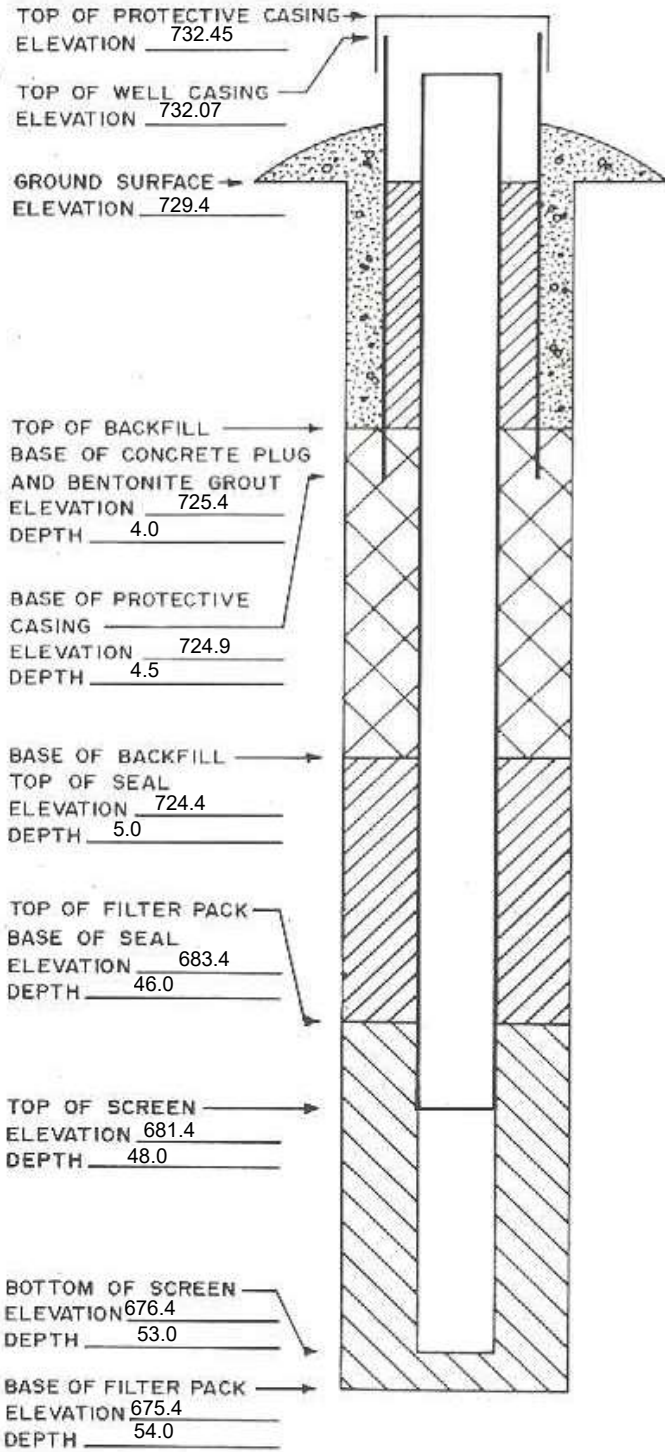
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

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

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, [nina.booker@dnr.iowa.gov](mailto:nina.booker@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 Prairie Creek Generating Station Permit No. \_\_\_\_\_  
Well or Piezometer No. MW306A Dates Started 6/23/2020 Date Completed 6/24/2020

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

Specify corner of site NE of parcel 19032-01001-0 Distance and direction along boundary 1,210' W  
Distance and direction from boundary to surface monitoring well 1,205' S  
Elevation (+0.01 ft. MSL) \_\_\_\_\_  
Ground Surface 708.9 Top of protective casing 712.50  
Top of well casing 711.50 Benchmark elevation \_\_\_\_\_  
Benchmark description On-site benchmark, NAVD\_88 datum.

## B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling  
Address 301 Alderson St. City, State, Zip Code Schofield, WI, 54476  
Name of driller Mike Mueller  
Drilling method Rotosonic Drilling fluid Water Bore Hole diameter 6 inches  
Soil sampling method 5 foot sections Depth of boring 61 feet

## C. MONITORING WELL INSTALLATION


Casing material <u>PVC</u>	Placement method <u>Tremie Pipe</u>
Length of casing <u>63 feet</u>	Volume <u>8.5 cubic feet</u>
Outside casing diameter <u>2.4 inches</u>	Backfill (if different from seal): <u>None</u>
Inside casing diameter <u>2.0 inches</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type _____	Volume _____
Screen material <u>PVC</u>	Surface seal design: <u>Cememt</u>
Screen opening size <u>0.01 inches</u>	Material of protective casing: <u>Steel</u>
	Material of grout between protective casing and well casing: <u>Bentonite and Filter Sand</u>
Screen length <u>5 feet</u>	Protective cap: _____
Depth of Well <u>60 feet below ground surface</u>	Material <u>Aluminium</u>
Filter Pack: <u>Red Flint Filter Pack Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material <u>Sand</u>	Well cap: _____
Grain Size _____	Material <u>Plastic</u>
Volume <u>1.3 cubic feet</u>	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Seal (minimum 3 ft. length above filter pack): <u>Bentonite Grout</u>	
Material <u>Bentonite Grout</u>	

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

Water level 9.07 Stabilization time <5 minutes  
Well development method Surged and purged  
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 # 9362 Date 6-24-2020

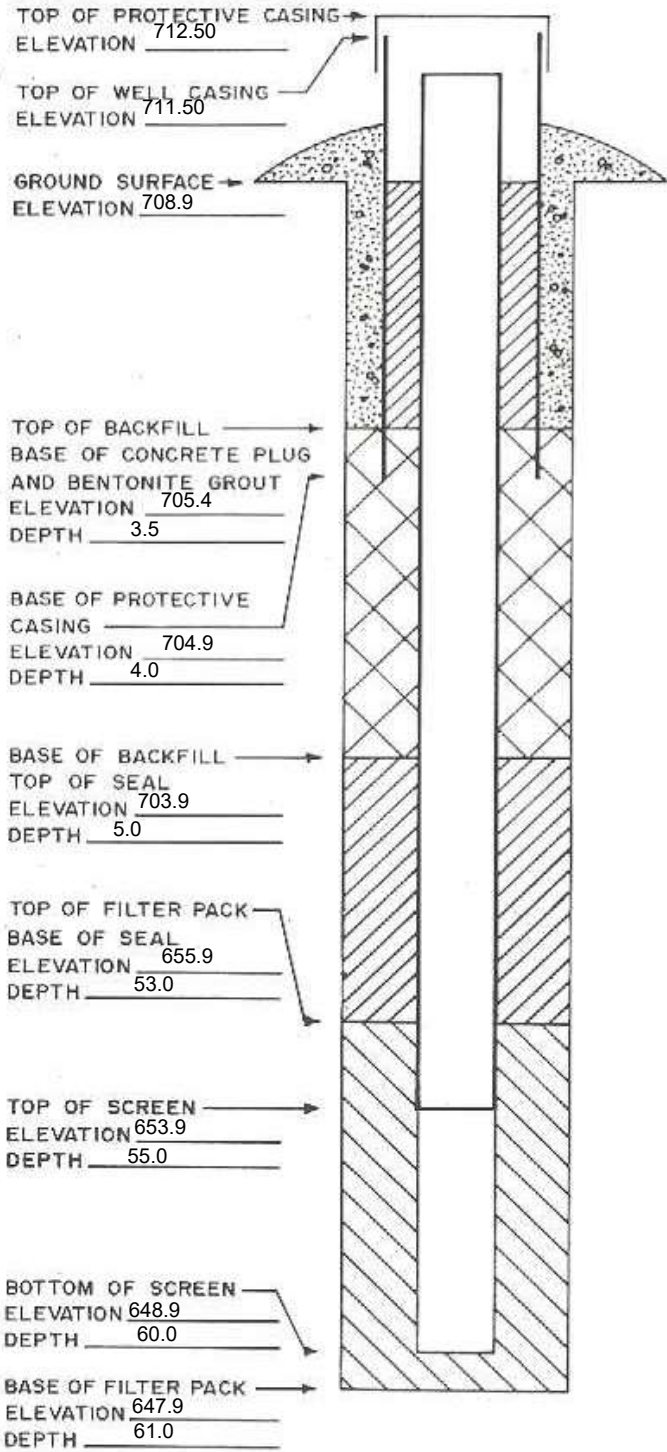
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

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Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, [nina.booker@dnr.iowa.gov](mailto:nina.booker@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 Prairie Creek Generating Station Permit No. \_\_\_\_\_  
Well or Piezometer No. MW309A Dates Started 7/23/2020 Date Completed 7/23/2020

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

Specify corner of site NW of parcel 19031-7600-2 Distance and direction along boundary 320' E  
Distance and direction from boundary to surface monitoring well 295' N  
Elevation (+0.01 ft. MSL) \_\_\_\_\_  
Ground Surface 708.0 Top of protective casing 711.05  
Top of well casing 710.54 Benchmark elevation \_\_\_\_\_  
Benchmark description On-site benchmark, NAVD\_88 datum.

## B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling  
Address 301 Alderson St. City, State, Zip Code Schofield, WI, 54476  
Name of driller Mike Mueller  
Drilling method Rotosonic Drilling fluid Water Bore Hole diameter 6 inches  
Soil sampling method 5 foot sections Depth of boring 46 feet

## C. MONITORING WELL INSTALLATION

Casing material <u>PVC</u>	Placement method <u>Gravity</u>
Length of casing <u>47.5 feet</u>	Volume <u>5.9 cubic feet</u>
Outside casing diameter <u>2.4 inches</u>	Backfill (if different from seal): <u>None</u>
Inside casing diameter <u>2.0 inches</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type _____	Volume _____
Screen material <u>PVC</u>	Surface seal design: <u>Cement</u>
Screen opening size <u>0.01 inches</u>	Material of protective casing: <u>Steel</u>
	Material of grout between protective casing and well casing: <u>Bentonite and Filter Sand</u>
Screen length <u>5 feet</u>	Protective cap: _____
Depth of Well <u>45 feet below ground surface</u>	Material <u>Aluminium</u>
Filter Pack: <u>Red Flint Filter Pack Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material <u>Sand</u>	Well cap: _____
Grain Size _____	Material <u>Rubber</u>
Volume <u>1.4 cubic feet</u>	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Seal (minimum 3 ft. length above filter pack): <u>Bentonite Chips</u>	
Material <u>Bentonite Chips</u>	

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

Water level 8.37 Stabilization time < 5 minutes  
Well development method Surged and purged  
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 # 9362 Date 7-23-2020

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

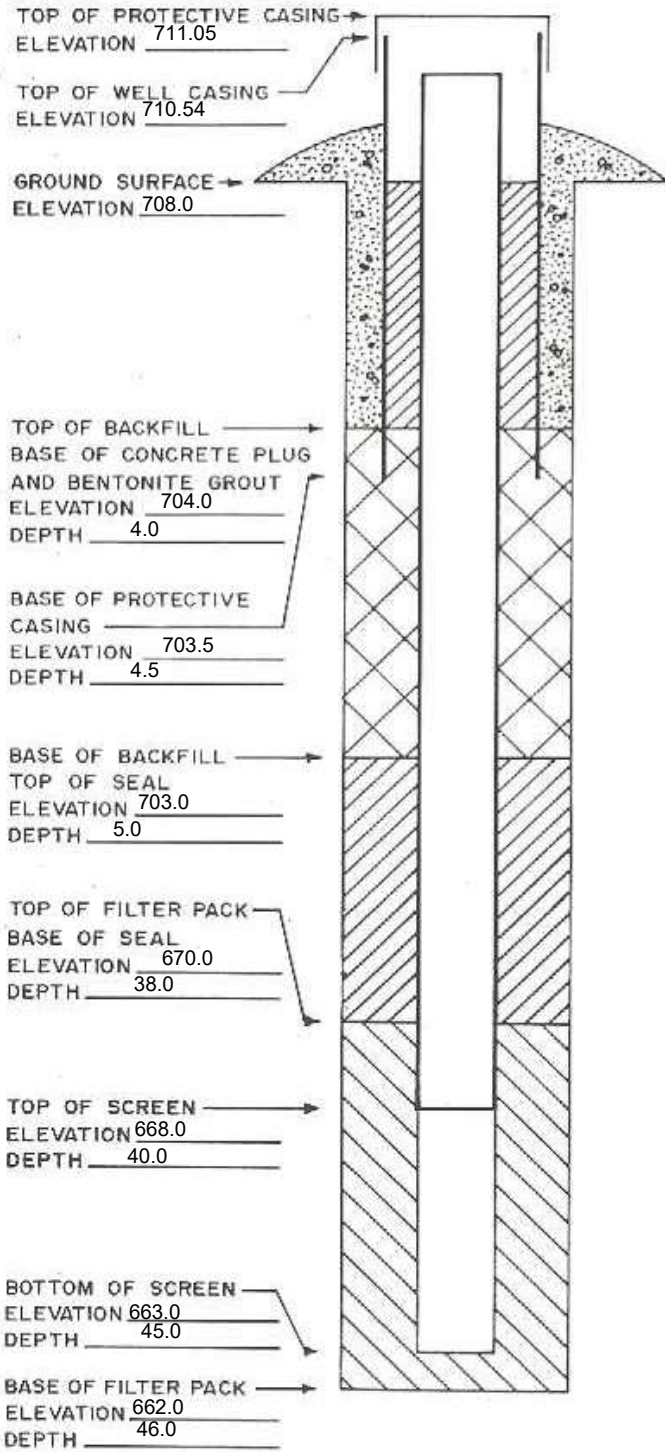
Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9<sup>th</sup> St, Des Moines, IA 50319.

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



ELEVATIONS:  $\pm$  0.01 FT. MSL  
DEPTHS:  $\pm$  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 Prairie Creek Generating Station Permit No. \_\_\_\_\_  
Well or Piezometer No. MW310A Dates Started 7/23/2020 Date Completed 7/23/2020

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

Specify corner of site NW of parcel 19031-7600-2 Distance and direction along boundary 600' E  
Distance and direction from boundary to surface monitoring well 345' N  
Elevation (+0.01 ft. MSL) \_\_\_\_\_  
Ground Surface 708.2 Top of protective casing 711.01  
Top of well casing 710.68 Benchmark elevation \_\_\_\_\_  
Benchmark description On-site benchmark, NAVD\_88 datum.

## B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling  
Address 301 Alderson St. City, State, Zip Code Schofield, WI, 54476  
Name of driller Mike Mueller  
Drilling method Rotosonic Drilling fluid Water Bore Hole diameter 6 inches  
Soil sampling method 5 foot sections Depth of boring 46 feet

## C. MONITORING WELL INSTALLATION

Casing material <u>PVC</u>	Placement method <u>Gravity</u>
Length of casing <u>47.5 feet</u>	Volume <u>5.9 cubic feet</u>
Outside casing diameter <u>2.4 inches</u>	Backfill (if different from seal): <u>None</u>
Inside casing diameter <u>2.0 inches</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type _____	Volume _____
Screen material <u>PVC</u>	Surface seal design: <u>Cement</u>
Screen opening size <u>0.01 inches</u>	Material of protective casing: <u>Steel</u>
	Material of grout between protective casing and well casing: <u>Bentonite and Filter Sand</u>
Screen length <u>5 feet</u>	Protective cap: _____
Depth of Well <u>45 feet below ground surface</u>	Material <u>Aluminium</u>
Filter Pack: <u>Red Flint Filter Pack Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material <u>Sand</u>	Well cap: _____
Grain Size _____	Material <u>Rubber</u>
Volume <u>1.4 cubic feet</u>	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Seal (minimum 3 ft. length above filter pack): <u>Bentonite Chips</u>	
Material <u>Bentonite Chips</u>	

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

Water level 8.68 Stabilization time < 5 minutes  
Well development method Surged and purged  
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 # 9362 Date 7-23-2020

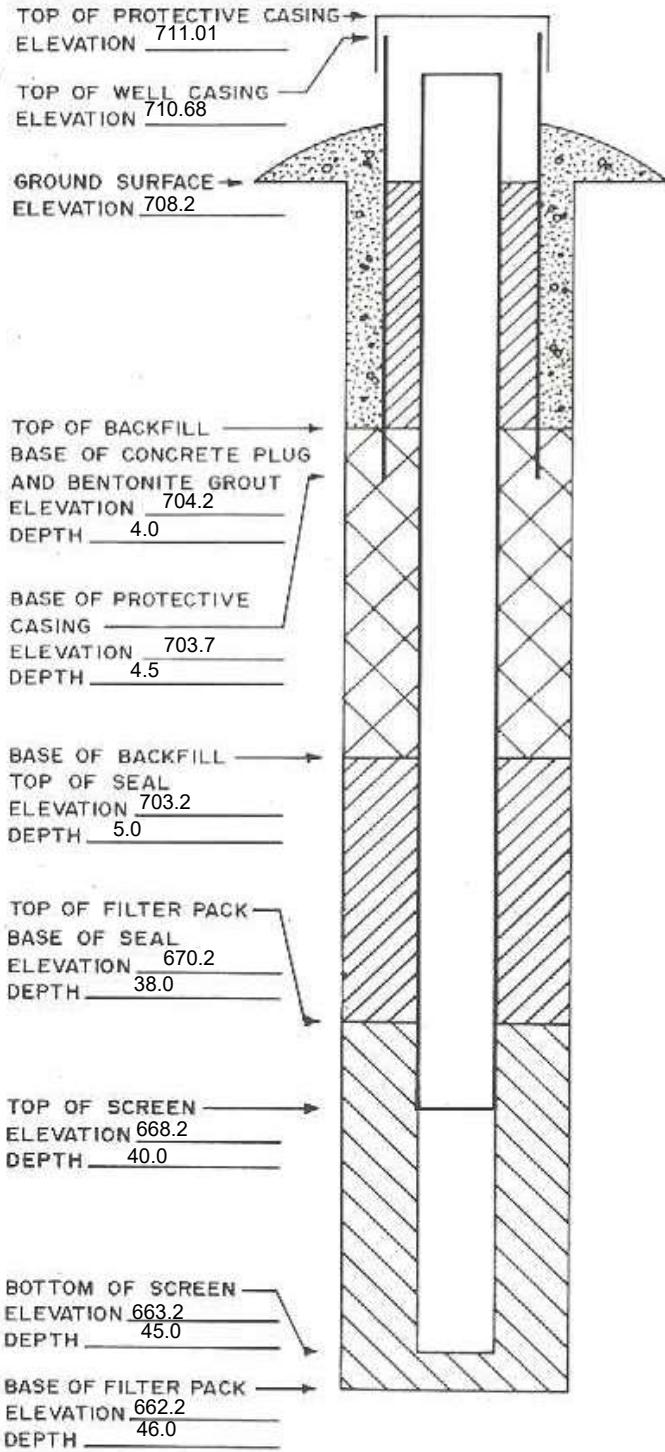
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

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

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

ELEVATIONS:  $\pm$  0.01 FT. MSL  
DEPTHS:  $\pm$  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 Prairie Creek Generating Station Permit No. PPW22-0010  
Well or Piezometer No. MW-311 Dates Started 5/9/2022 Date Completed 5/9/2022

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

Specify corner of site NW Distance and direction along boundary 188' S  
Distance and direction from boundary to surface monitoring well 870' E  
Elevation (+0.01 ft. MSL) \_\_\_\_\_  
Ground Surface 721.55 Top of protective casing 724.71  
Top of well casing 724.36 Benchmark elevation \_\_\_\_\_  
Benchmark description \_\_\_\_\_

## B. SOIL BORING INFORMATION

Construction Company Name Terracon  
Address 2640 12th St SW City, State, Zip Code Cedar Rapids, IA 52404  
Name of driller Duncan List  
Drilling method Auger Drilling fluid None Bore Hole diameter 8"  
Soil sampling method Split Spoon Depth of boring 20'

## C. MONITORING WELL INSTALLATION

Casing material <u>Schedule 40 PVC</u>	Placement method <u>Gravity</u>
Length of casing <u>6'</u>	Volume <u>8 bags</u>
Outside casing diameter <u>2.37</u>	Backfill (if different from seal): _____
Inside casing diameter <u>2.01</u>	Material <u>NA</u>
Casing joint type <u>Thread</u>	Placement method <u>NA</u>
Casing/screen joint type <u>Thread</u>	Volume <u>NA</u>
Screen material <u>Schedule 40 PVC</u>	Surface seal design: _____
Screen opening size <u>0.010</u>	Material of protective casing: <u>Steel</u>
Screen length <u>10'</u>	Material of grout between protective casing and well casing: <u>Bentonite chips</u>
Depth of Well <u>16'</u>	Protective cap: _____
Filter Pack: _____	Material <u>Steel</u>
Material <u>Filter Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Grain Size <u>16/30</u>	Well cap: _____
Volume <u>9 cu. ft.</u>	Material <u>Plastic</u>
Seal (minimum 3 ft. length above filter pack): _____	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Material <u>3/8' Bentonite Chips</u>	

## D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ foot below top of inner well casing)

Water level 14.50' Stabilization time < 1 hr  
Well development method surged and pumped  
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 # 11183 Date 8/29/22

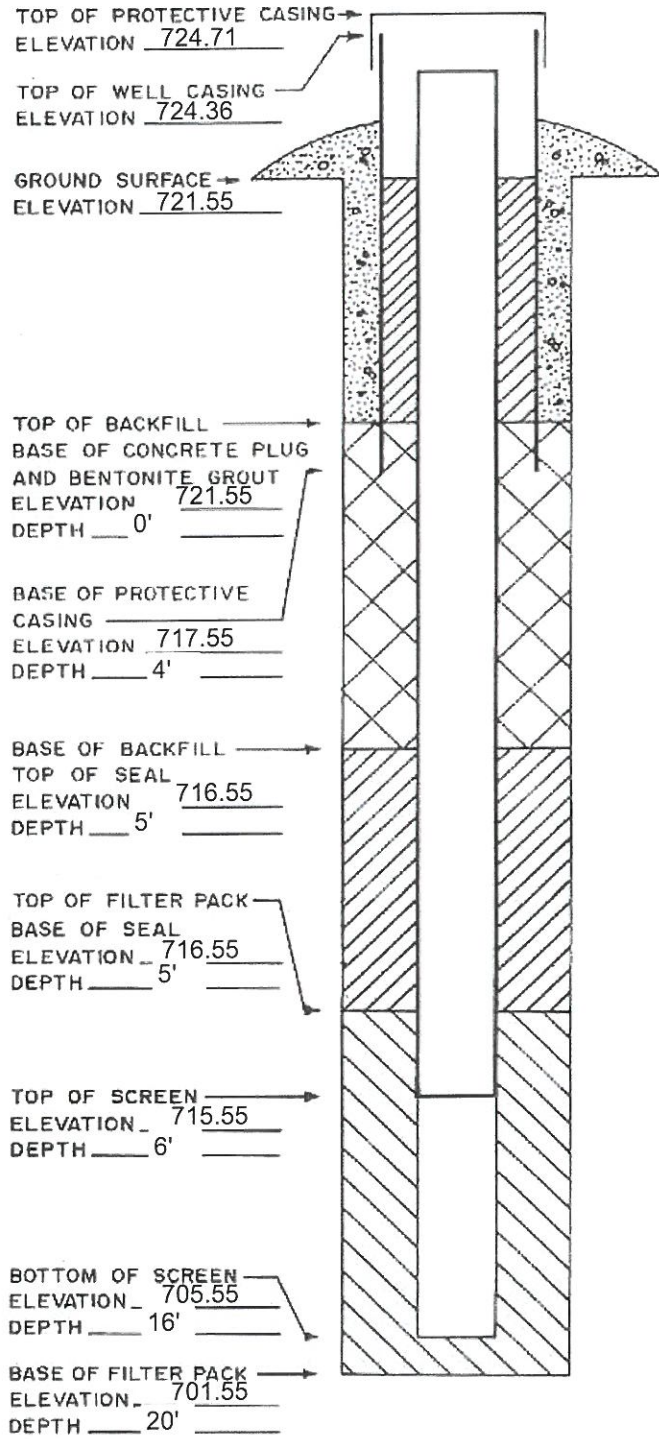
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

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

Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, [nina.booker@dnr.iowa.gov](mailto:nina.booker@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 Prairie Creek Generating Station Permit No. PPW22-0011  
Well or Piezometer No. MW-312 Dates Started 5/9/2022 Date Completed 5/9/2022

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

Specify corner of site SW Distance and direction along boundary 2,092' ENE  
Distance and direction from boundary to surface monitoring well 60' NNW  
Elevation (+0.01 ft. MSL) \_\_\_\_\_  
Ground Surface 708.95 Top of protective casing 711.93  
Top of well casing 711.60 Benchmark elevation \_\_\_\_\_  
Benchmark description \_\_\_\_\_

## B. SOIL BORING INFORMATION

Construction Company Name Terracon  
Address 2640 12th St SW City, State, Zip Code Cedar Rapids, IA 52404  
Name of driller Duncan List  
Drilling method Auger Drilling fluid None Bore Hole diameter 8"  
Soil sampling method Split Spoon Depth of boring 16'

## C. MONITORING WELL INSTALLATION

Casing material <u>Schedule 40 PVC</u>	Placement method <u>Gravity</u>
Length of casing <u>5'</u>	Volume <u>2 bags</u>
Outside casing diameter <u>2.37</u>	Backfill (if different from seal): _____
Inside casing diameter <u>2.01</u>	Material <u>NA</u>
Casing joint type <u>Thread</u>	Placement method <u>NA</u>
Casing/screen joint type <u>Thread</u>	Volume <u>NA</u>
Screen material <u>Schedule 40 PVC</u>	Surface seal design: _____
Screen opening size <u>0.010</u>	Material of protective casing: <u>Steel</u>
Screen length <u>10'</u>	Material of grout between protective casing and well casing: <u>Filter Sand</u>
Depth of Well <u>15'</u>	Protective cap: _____
Filter Pack: _____	Material <u>Steel</u>
Material <u>Filter Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Grain Size <u>16/30</u>	Well cap: _____
Volume <u>2 bags</u>	Material <u>Plastic</u>
Seal (minimum 3 ft. length above filter pack): _____	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Material <u>3/8' Bentonite Chips</u>	

## D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ foot below top of inner well casing)

Water level 8.08' Stabilization time < 1 hour  
Well development method Surged and pumped  
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 # 11183 Date 8/29/22

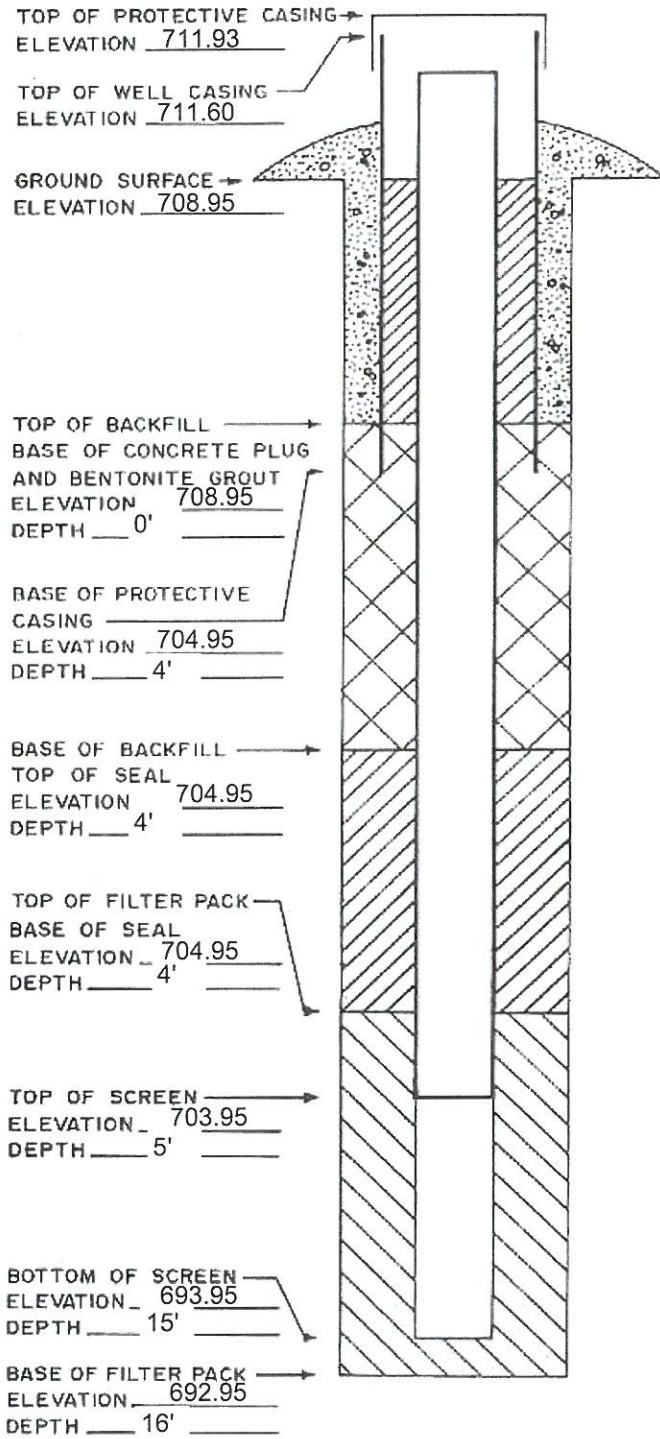
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.


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

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

ELEVATIONS:  $\pm$  0.01 FT. MSL  
DEPTHS:  $\pm$  0.1 FT. FROM  
GROUND SURFACE

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





Appendix C  
Laboratory Reports

## C1 February 2022 Supplemental Assessment Monitoring

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-225710-1

Client Project/Site: Prairie Creek Generation Station 25222074

**For:**

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



*Authorized for release by:  
3/10/2022 9:11:20 AM*

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

Review your project  
results through  
**Total Access**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*





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# Case Narrative

Client: SCS Engineers  
Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

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**Job ID: 310-225710-1**

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**Laboratory: Eurofins Cedar Falls**

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**Narrative**

**Job Narrative**  
**310-225710-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 2/23/2022 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.3° C.

**Metals**

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

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# Sample Summary

Client: SCS Engineers  
Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-225710-1	MW 308	Ground Water	02/22/22 16:30	02/23/22 09:45
310-225710-2	Field Blank	Water	02/22/22 16:30	02/23/22 09:45

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# Detection Summary

Client: SCS Engineers  
Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

## Client Sample ID: MW 308

## Lab Sample ID: 310-225710-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	37		10	2.5	ug/L	1		6020A	Total/NA
Ground Water Elevation	702.84				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	210.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.14				mg/L	1		Field Sampling	Total/NA
pH, Field	8.99				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	486				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.2				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: 310-225710-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

**Client Sample ID: MW 308**  
 Date Collected: 02/22/22 16:30  
 Date Received: 02/23/22 09:45

**Lab Sample ID: 310-225710-1**  
 Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	37		10	2.5	ug/L		02/24/22 08:15	03/09/22 01:02	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	702.84				ft			02/22/22 16:30	1
Oxidation Reduction Potential	210.7				millivolts			02/22/22 16:30	1
Oxygen, Dissolved, Client Supplied	0.14				mg/L			02/22/22 16:30	1
pH, Field	8.99				SU			02/22/22 16:30	1
Specific Conductance, Field	486				umhos/cm			02/22/22 16:30	1
Temperature, Field	12.2				Degrees C			02/22/22 16:30	1
Turbidity, Field	0.00				NTU			02/22/22 16:30	1

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# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-225710-2**

**Date Collected: 02/22/22 16:30**

**Matrix: Water**

**Date Received: 02/23/22 09:45**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<2.5		10	2.5	ug/L		02/24/22 08:15	03/09/22 01:22	1

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# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

## Glossary

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

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

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

**Lab Sample ID: MB 310-344751/1-A**  
**Matrix: Water**  
**Analysis Batch: 346038**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 344751**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<2.5		10	2.5	ug/L		02/24/22 08:15	03/08/22 17:42	1

**Lab Sample ID: LCS 310-344751/2-A**  
**Matrix: Water**  
**Analysis Batch: 346038**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 344751**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	200	195		ug/L		98	80 - 120

**Lab Sample ID: 310-225710-1 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 346038**

**Client Sample ID: MW 308**  
**Prep Type: Total/NA**  
**Prep Batch: 344751**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lithium	37		38.5		ug/L		3	20

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

## Metals

### Prep Batch: 344751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-225710-1	MW 308	Total/NA	Ground Water	3005A	
310-225710-2	Field Blank	Total/NA	Water	3005A	
MB 310-344751/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-344751/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-225710-1 DU	MW 308	Total/NA	Ground Water	3005A	

### Analysis Batch: 346038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-225710-1	MW 308	Total/NA	Ground Water	6020A	344751
310-225710-2	Field Blank	Total/NA	Water	6020A	344751
MB 310-344751/1-A	Method Blank	Total/NA	Water	6020A	344751
LCS 310-344751/2-A	Lab Control Sample	Total/NA	Water	6020A	344751
310-225710-1 DU	MW 308	Total/NA	Ground Water	6020A	344751

## Field Service / Mobile Lab

### Analysis Batch: 346142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-225710-1	MW 308	Total/NA	Ground Water	Field Sampling	

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

## Client Sample ID: MW 308

Date Collected: 02/22/22 16:30

Date Received: 02/23/22 09:45

## Lab Sample ID: 310-225710-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			344751	02/24/22 08:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346038	03/09/22 01:02	SAP	TAL CF
Total/NA	Analysis	Field Sampling		1	346142	02/22/22 16:30	SJF	TAL CF

## Client Sample ID: Field Blank

Date Collected: 02/22/22 16:30

Date Received: 02/23/22 09:45

## Lab Sample ID: 310-225710-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			344751	02/24/22 08:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346038	03/09/22 01:22	SAP	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  
Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

## Laboratory: Eurofins Cedar Falls

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

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

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

# Method Summary

Client: SCS Engineers  
Project/Site: Prairie Creek Generation Station 25222074

Job ID: 310-225710-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3005A	Preparation, Total Metals	SW846	TAL CF

**Protocol References:**

EPA = US Environmental Protection Agency

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

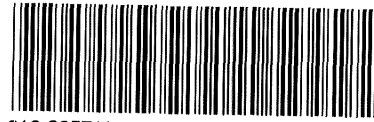
**Laboratory References:**

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





Environment Testing  
America



310-225710 Chain of Custody

**Cooler/Sample Receipt and Temperature Log Form**

<b>Client Information</b>			
Client: <u>SCS Engineers</u>			
City/State:	CITY <u>Madison</u>	STATE <u>WI</u>	Project: <u>Prairie Creek</u>
<b>Receipt Information</b>			
Date/Time Received:	DATE <u>2/23/12</u>	TIME <u>0945</u>	Received By: <u>MRH</u>
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input checked="" type="checkbox"/> FedEx Ground <sup>HK4</sup> <u>2/23/12</u> <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<b>Temperature Record</b>			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>S</u>	Correction Factor (°C):	<u>0.0</u>
* Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>2.3</u>	Corrected Temp (°C):	<u>2.3</u>
<b>• Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			



# Chain of Custody Record 458990



Environment Testing  
TestAmerica

TAL-8210

Address:

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: <b>JDM Karwinski</b>		Date: <b>2-22-22</b>	
Tel/Email:		Carrier:	

Client Contact		COC No	
Company Name: <b>SCS Engineers</b>	Address: <b>2830 Dayton Dr</b>	Sampler:	of COCs
City/State/Zip: <b>Madison WI 53718</b>	Phone:	For Lab Use Only:	
Fax:	Walk-in Client		
Project Name: <b>Prairie Creek Generation Station</b>	Lab Sampling		
Site:	Job / SDG No		
P O #:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes
MW 308	2/22/22	16:30	G	GW	1	N	X	
Field Blank	↓	1630	G	DI	1	N	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other \_\_\_\_\_

Possible Hazard Identification: \_\_\_\_\_ Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Cooler Temp (°C): Obs'd _____ Corr'd _____	Therm ID No. _____
Relinquished by: <b>Paul A. A. A. A.</b>	Received by: <b>[Signature]</b>	Company: <b>2272 0956</b>
Relinquished by:	Received by:	Company:
Relinquished by:	Received in Laboratory by:	Company:



## Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-225710-1

**Login Number: 225710**

**List Number: 1**

**Creator: Kizer, Preston V**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <math><6\text{mm}</math> (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**  
**Prairie Creek Generating Station / SCS Engineers Project #25222074.00**  
**February 2022**

Sample	Sample Date/Time	GW Elevation (ft amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity
MW-308	2/22/2022 1 630	702.84	12.2	8.99	0.14	486	210.7	0.00

Abbreviations:

mg/L = milligrams per liter

NA = Not Analyzed

mV = millivolts amsl = above mean sea level

NM = Not measured

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

Date: 10/25/2021  
 Date: 3/8/2022  
 Date: 3/9/2022

C:\Users\FredrickS\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\D8427408\[2202\_PCS\_CCR\_Field.xlsx]GW Field Paramet

## C2 April 2022 Assessment Monitoring

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-230072-1

Client Project/Site: Prairie Creek, 25222074 MNA Parameters

For:

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
5/22/2022 6:22:16 PM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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# Case Narrative

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

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**Job ID: 310-230072-1**

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**Laboratory: Eurofins Cedar Falls**

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**Narrative**

**Job Narrative**  
**310-230072-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 4/27/2022 4:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0° C.

**Metals**

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

**General Chemistry**

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

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# Sample Summary

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-230072-1	MW-301	Water	04/25/22 12:13	04/27/22 16:05
310-230072-2	MW-302	Water	04/25/22 13:34	04/27/22 16:05
310-230072-3	MW-303	Water	04/26/22 15:26	04/27/22 16:05
310-230072-4	MW-304	Water	04/26/22 14:07	04/27/22 16:05
310-230072-5	MW-305	Water	04/26/22 12:21	04/27/22 16:05
310-230072-6	MW-306	Water	04/26/22 09:41	04/27/22 16:05
310-230072-7	MW-306A	Water	04/26/22 10:35	04/27/22 16:05
310-230072-8	MW-307	Water	04/25/22 15:06	04/27/22 16:05
310-230072-9	MW-308	Water	04/25/22 17:09	04/27/22 16:05
310-230072-10	MW-309	Water	04/27/22 09:38	04/27/22 16:05
310-230072-11	MW-309A	Water	04/26/22 15:01	04/27/22 16:05
310-230072-12	MW-310	Water	04/27/22 11:18	04/27/22 16:05
310-230072-13	MW-310A	Water	04/27/22 12:30	04/27/22 16:05
310-230072-14	Field Blank	Water	04/27/22 13:35	04/27/22 16:05

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# Detection Summary

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Client Sample ID: MW-301

## Lab Sample ID: 310-230072-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	52000		500	150	ug/L	1		6020A	Total/NA
Potassium	930		500	150	ug/L	1		6020A	Total/NA
Sodium	17000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	430		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	430		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-302

## Lab Sample ID: 310-230072-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	810		100	36	ug/L	1		6020A	Total/NA
Magnesium	13000		500	150	ug/L	1		6020A	Total/NA
Manganese	4400		10	3.6	ug/L	1		6020A	Total/NA
Potassium	3900		500	150	ug/L	1		6020A	Total/NA
Sodium	18000		1000	610	ug/L	1		6020A	Total/NA
Iron	140		100	36	ug/L	1		6020A	Dissolved
Manganese	3800		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	88		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	88		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-303

## Lab Sample ID: 310-230072-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	3500		100	36	ug/L	1		6020A	Total/NA
Magnesium	35000		500	150	ug/L	1		6020A	Total/NA
Manganese	1600		10	3.6	ug/L	1		6020A	Total/NA
Potassium	4100		500	150	ug/L	1		6020A	Total/NA
Sodium	34000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	32		2.0	0.75	ug/L	1		6020A	Dissolved
Iron	3000		100	36	ug/L	1		6020A	Dissolved
Manganese	1400		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	360		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	360		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-304

## Lab Sample ID: 310-230072-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	3600		100	36	ug/L	1		6020A	Total/NA
Magnesium	47000		500	150	ug/L	1		6020A	Total/NA
Manganese	1800		10	3.6	ug/L	1		6020A	Total/NA
Potassium	5300		500	150	ug/L	1		6020A	Total/NA
Sodium	49000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	13		2.0	0.75	ug/L	1		6020A	Dissolved
Iron	2900		100	36	ug/L	1		6020A	Dissolved
Manganese	1500		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	430		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	430		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-305

## Lab Sample ID: 310-230072-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	42000		500	150	ug/L	1		6020A	Total/NA
Manganese	750		10	3.6	ug/L	1		6020A	Total/NA
Potassium	4000		500	150	ug/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Client Sample ID: MW-305 (Continued)

## Lab Sample ID: 310-230072-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	64000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	7.0		2.0	0.75	ug/L	1		6020A	Dissolved
Manganese	660		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-306

## Lab Sample ID: 310-230072-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1700		100	36	ug/L	1		6020A	Total/NA
Magnesium	13000		500	150	ug/L	1		6020A	Total/NA
Manganese	100		10	3.6	ug/L	1		6020A	Total/NA
Potassium	900		500	150	ug/L	1		6020A	Total/NA
Sodium	55000		1000	610	ug/L	1		6020A	Total/NA
Iron	1400		100	36	ug/L	1		6020A	Dissolved
Manganese	93		10	3.6	ug/L	1		6020A	Dissolved
Molybdenum	230		2.0	1.2	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-306A

## Lab Sample ID: 310-230072-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1900		100	36	ug/L	1		6020A	Total/NA
Magnesium	49000		500	150	ug/L	1		6020A	Total/NA
Manganese	390		10	3.6	ug/L	1		6020A	Total/NA
Potassium	1700		500	150	ug/L	1		6020A	Total/NA
Sodium	40000		1000	610	ug/L	1		6020A	Total/NA
Iron	1600		100	36	ug/L	1		6020A	Dissolved
Manganese	350		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-307

## Lab Sample ID: 310-230072-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	2300		500	150	ug/L	1		6020A	Total/NA
Potassium	1700		500	150	ug/L	1		6020A	Total/NA
Sodium	10000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	39		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	39		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-308

## Lab Sample ID: 310-230072-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	8100		500	150	ug/L	1		6020A	Total/NA
Manganese	92		10	3.6	ug/L	1		6020A	Total/NA
Potassium	8600		500	150	ug/L	1		6020A	Total/NA
Sodium	53000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	43		2.0	0.75	ug/L	1		6020A	Dissolved
Manganese	79		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	49		10	4.6	mg/L	1		SM 2320B	Total/NA
Carbonate Alkalinity as CaCO3	98		10	4.6	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Client Sample ID: MW-308 (Continued)

## Lab Sample ID: 310-230072-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Alkalinity as CaCO3	150		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-309

## Lab Sample ID: 310-230072-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1700		100	36	ug/L	1		6020A	Total/NA
Magnesium	37000		500	150	ug/L	1		6020A	Total/NA
Manganese	1600		10	3.6	ug/L	1		6020A	Total/NA
Potassium	4600		500	150	ug/L	1		6020A	Total/NA
Sodium	36000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	36		2.0	0.75	ug/L	1		6020A	Dissolved
Iron	1300		100	36	ug/L	1		6020A	Dissolved
Manganese	1400		10	3.6	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	440		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	440		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-309A

## Lab Sample ID: 310-230072-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	9700		100	36	ug/L	1		6020A	Total/NA
Magnesium	32000		500	150	ug/L	1		6020A	Total/NA
Manganese	800		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	8800		100	36	ug/L	1		6020A	Dissolved
Manganese	740		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-310

## Lab Sample ID: 310-230072-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	4900		100	36	ug/L	1		6020A	Total/NA
Magnesium	35000		500	150	ug/L	1		6020A	Total/NA
Manganese	1300		10	3.6	ug/L	1		6020A	Total/NA
Potassium	5800		500	150	ug/L	1		6020A	Total/NA
Sodium	48000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	19		2.0	0.75	ug/L	1		6020A	Dissolved
Iron	4000		100	36	ug/L	1		6020A	Dissolved
Manganese	1100		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

## Client Sample ID: MW-310A

## Lab Sample ID: 310-230072-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	6500		100	36	ug/L	1		6020A	Total/NA
Magnesium	39000		500	150	ug/L	1		6020A	Total/NA
Manganese	350		10	3.6	ug/L	1		6020A	Total/NA
Potassium	970		500	150	ug/L	1		6020A	Total/NA
Sodium	16000		1000	610	ug/L	1		6020A	Total/NA
Iron	5600		100	36	ug/L	1		6020A	Dissolved
Manganese	310		10	3.6	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Client Sample ID: MW-310A (Continued)

Lab Sample ID: 310-230072-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
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: Field Blank

Lab Sample ID: 310-230072-14

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls





# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-301**  
 Date Collected: 04/25/22 12:13  
 Date Received: 04/27/22 16:05

**Lab Sample ID: 310-230072-1**  
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		05/03/22 09:30	05/20/22 20:52	1
<b>Magnesium</b>	<b>52000</b>		500	150	ug/L		05/03/22 09:30	05/20/22 20:52	1
Manganese	<3.6		10	3.6	ug/L		05/03/22 09:30	05/20/22 20:52	1
<b>Potassium</b>	<b>930</b>		500	150	ug/L		05/03/22 09:30	05/20/22 20:52	1
<b>Sodium</b>	<b>17000</b>		1000	610	ug/L		05/03/22 09:30	05/20/22 20:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		05/03/22 09:30	05/11/22 23:46	1
Manganese	<3.6		10	3.6	ug/L		05/03/22 09:30	05/11/22 23:46	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>430</b>		10	4.6	mg/L			05/04/22 08:30	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/04/22 08:30	1
<b>Total Alkalinity as CaCO3</b>	<b>430</b>		10	4.6	mg/L			05/04/22 08:30	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-302**  
 Date Collected: 04/25/22 13:34  
 Date Received: 04/27/22 16:05

**Lab Sample ID: 310-230072-2**  
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	810		100	36	ug/L		05/03/22 09:30	05/20/22 20:56	1
Magnesium	13000		500	150	ug/L		05/03/22 09:30	05/20/22 20:56	1
Manganese	4400		10	3.6	ug/L		05/03/22 09:30	05/20/22 20:56	1
Potassium	3900		500	150	ug/L		05/03/22 09:30	05/20/22 20:56	1
Sodium	18000		1000	610	ug/L		05/03/22 09:30	05/20/22 20:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	140		100	36	ug/L		05/03/22 09:30	05/11/22 23:49	1
Manganese	3800		10	3.6	ug/L		05/03/22 09:30	05/11/22 23:49	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	88		10	4.6	mg/L			05/04/22 08:30	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/04/22 08:30	1
Total Alkalinity as CaCO3	88		10	4.6	mg/L			05/04/22 08:30	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-303**

**Lab Sample ID: 310-230072-3**

Date Collected: 04/26/22 15:26

Matrix: Water

Date Received: 04/27/22 16:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	3500		100	36	ug/L		05/03/22 09:30	05/20/22 21:00	1
Magnesium	35000		500	150	ug/L		05/03/22 09:30	05/20/22 21:00	1
Manganese	1600		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:00	1
Potassium	4100		500	150	ug/L		05/03/22 09:30	05/20/22 21:00	1
Sodium	34000		1000	610	ug/L		05/03/22 09:30	05/20/22 21:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	32		2.0	0.75	ug/L		05/03/22 09:30	05/11/22 23:53	1
Iron	3000		100	36	ug/L		05/03/22 09:30	05/11/22 23:53	1
Manganese	1400		10	3.6	ug/L		05/03/22 09:30	05/11/22 23:53	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	360		10	4.6	mg/L			05/06/22 08:35	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/06/22 08:35	1
Total Alkalinity as CaCO3	360		10	4.6	mg/L			05/06/22 08:35	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-304**

**Lab Sample ID: 310-230072-4**

Date Collected: 04/26/22 14:07

Matrix: Water

Date Received: 04/27/22 16:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	3600		100	36	ug/L		05/03/22 09:30	05/20/22 21:04	1
Magnesium	47000		500	150	ug/L		05/03/22 09:30	05/20/22 21:04	1
Manganese	1800		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:04	1
Potassium	5300		500	150	ug/L		05/03/22 09:30	05/20/22 21:04	1
Sodium	49000		1000	610	ug/L		05/03/22 09:30	05/20/22 21:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13		2.0	0.75	ug/L		05/03/22 09:30	05/11/22 23:57	1
Iron	2900		100	36	ug/L		05/03/22 09:30	05/11/22 23:57	1
Manganese	1500		10	3.6	ug/L		05/03/22 09:30	05/11/22 23:57	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	430		10	4.6	mg/L			05/06/22 08:35	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/06/22 08:35	1
Total Alkalinity as CaCO3	430		10	4.6	mg/L			05/06/22 08:35	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-305**

**Lab Sample ID: 310-230072-5**

Date Collected: 04/26/22 12:21

Matrix: Water

Date Received: 04/27/22 16:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		05/03/22 09:30	05/20/22 21:08	1
<b>Magnesium</b>	<b>42000</b>		500	150	ug/L		05/03/22 09:30	05/20/22 21:08	1
<b>Manganese</b>	<b>750</b>		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:08	1
<b>Potassium</b>	<b>4000</b>		500	150	ug/L		05/03/22 09:30	05/20/22 21:08	1
<b>Sodium</b>	<b>64000</b>		1000	610	ug/L		05/03/22 09:30	05/20/22 21:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>7.0</b>		2.0	0.75	ug/L		05/03/22 09:30	05/12/22 00:16	1
Iron	<36		100	36	ug/L		05/03/22 09:30	05/12/22 00:16	1
<b>Manganese</b>	<b>660</b>		10	3.6	ug/L		05/03/22 09:30	05/12/22 00:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>230</b>		10	4.6	mg/L			05/06/22 08:35	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/06/22 08:35	1
<b>Total Alkalinity as CaCO3</b>	<b>230</b>		10	4.6	mg/L			05/06/22 08:35	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-306**

**Lab Sample ID: 310-230072-6**

Date Collected: 04/26/22 09:41

Matrix: Water

Date Received: 04/27/22 16:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1700		100	36	ug/L		05/03/22 09:30	05/20/22 21:16	1
Magnesium	13000		500	150	ug/L		05/03/22 09:30	05/20/22 21:16	1
Manganese	100		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:16	1
Potassium	900		500	150	ug/L		05/03/22 09:30	05/20/22 21:16	1
Sodium	55000		1000	610	ug/L		05/03/22 09:30	05/20/22 21:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1400		100	36	ug/L		05/03/22 09:30	05/12/22 00:24	1
Manganese	93		10	3.6	ug/L		05/03/22 09:30	05/12/22 00:24	1
Molybdenum	230		2.0	1.2	ug/L		05/03/22 09:30	05/12/22 00:24	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	130		10	4.6	mg/L			05/06/22 08:35	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/06/22 08:35	1
Total Alkalinity as CaCO3	130		10	4.6	mg/L			05/06/22 08:35	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-306A**

**Lab Sample ID: 310-230072-7**

Date Collected: 04/26/22 10:35

Matrix: Water

Date Received: 04/27/22 16:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1900		100	36	ug/L		05/03/22 09:30	05/20/22 21:20	1
Magnesium	49000		500	150	ug/L		05/03/22 09:30	05/20/22 21:20	1
Manganese	390		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:20	1
Potassium	1700		500	150	ug/L		05/03/22 09:30	05/20/22 21:20	1
Sodium	40000		1000	610	ug/L		05/03/22 09:30	05/20/22 21:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1600		100	36	ug/L		05/03/22 09:30	05/12/22 00:28	1
Manganese	350		10	3.6	ug/L		05/03/22 09:30	05/12/22 00:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	230		10	4.6	mg/L			05/06/22 08:35	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/06/22 08:35	1
Total Alkalinity as CaCO3	230		10	4.6	mg/L			05/06/22 08:35	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-307**  
 Date Collected: 04/25/22 15:06  
 Date Received: 04/27/22 16:05

**Lab Sample ID: 310-230072-8**  
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		05/03/22 09:30	05/20/22 21:24	1
<b>Magnesium</b>	<b>2300</b>		500	150	ug/L		05/03/22 09:30	05/20/22 21:24	1
Manganese	<3.6		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:24	1
<b>Potassium</b>	<b>1700</b>		500	150	ug/L		05/03/22 09:30	05/20/22 21:24	1
<b>Sodium</b>	<b>10000</b>		1000	610	ug/L		05/03/22 09:30	05/20/22 21:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		05/03/22 09:30	05/12/22 00:32	1
Manganese	<3.6		10	3.6	ug/L		05/03/22 09:30	05/12/22 00:32	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>39</b>		10	4.6	mg/L			05/04/22 08:30	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/04/22 08:30	1
<b>Total Alkalinity as CaCO3</b>	<b>39</b>		10	4.6	mg/L			05/04/22 08:30	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-308**

**Lab Sample ID: 310-230072-9**

Date Collected: 04/25/22 17:09

Matrix: Water

Date Received: 04/27/22 16:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		05/03/22 09:30	05/20/22 21:43	1
<b>Magnesium</b>	<b>8100</b>		500	150	ug/L		05/03/22 09:30	05/20/22 21:43	1
<b>Manganese</b>	<b>92</b>		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:43	1
<b>Potassium</b>	<b>8600</b>		500	150	ug/L		05/03/22 09:30	05/20/22 21:43	1
<b>Sodium</b>	<b>53000</b>		1000	610	ug/L		05/03/22 09:30	05/20/22 21:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>43</b>		2.0	0.75	ug/L		05/03/22 09:30	05/12/22 00:36	1
Iron	<36		100	36	ug/L		05/03/22 09:30	05/12/22 00:36	1
<b>Manganese</b>	<b>79</b>		10	3.6	ug/L		05/03/22 09:30	05/12/22 00:36	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>49</b>		10	4.6	mg/L			05/04/22 08:30	1
<b>Carbonate Alkalinity as CaCO3</b>	<b>98</b>		10	4.6	mg/L			05/04/22 08:30	1
<b>Total Alkalinity as CaCO3</b>	<b>150</b>		10	4.6	mg/L			05/04/22 08:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-309**  
 Date Collected: 04/27/22 09:38  
 Date Received: 04/27/22 16:05

**Lab Sample ID: 310-230072-10**  
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1700		100	36	ug/L		05/03/22 09:30	05/20/22 21:47	1
Magnesium	37000		500	150	ug/L		05/03/22 09:30	05/20/22 21:47	1
Manganese	1600		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:47	1
Potassium	4600		500	150	ug/L		05/03/22 09:30	05/20/22 21:47	1
Sodium	36000		1000	610	ug/L		05/03/22 09:30	05/20/22 21:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	36		2.0	0.75	ug/L		05/03/22 09:30	05/12/22 00:39	1
Iron	1300		100	36	ug/L		05/03/22 09:30	05/12/22 00:39	1
Manganese	1400		10	3.6	ug/L		05/03/22 09:30	05/12/22 00:39	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	440		10	4.6	mg/L			05/06/22 10:50	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/06/22 10:50	1
Total Alkalinity as CaCO3	440		10	4.6	mg/L			05/06/22 10:50	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-309A**

**Lab Sample ID: 310-230072-11**

Date Collected: 04/26/22 15:01

Matrix: Water

Date Received: 04/27/22 16:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	9700		100	36	ug/L		05/03/22 09:30	05/20/22 21:51	1
Magnesium	32000		500	150	ug/L		05/03/22 09:30	05/20/22 21:51	1
Manganese	800		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:51	1
Potassium	2100		500	150	ug/L		05/03/22 09:30	05/20/22 21:51	1
Sodium	22000		1000	610	ug/L		05/03/22 09:30	05/20/22 21:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	8800		100	36	ug/L		05/03/22 09:30	05/12/22 00:43	1
Manganese	740		10	3.6	ug/L		05/03/22 09:30	05/12/22 00:43	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	290		10	4.6	mg/L			05/06/22 10:50	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/06/22 10:50	1
Total Alkalinity as CaCO3	290		10	4.6	mg/L			05/06/22 10:50	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-310**  
 Date Collected: 04/27/22 11:18  
 Date Received: 04/27/22 16:05

**Lab Sample ID: 310-230072-12**  
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	4900		100	36	ug/L		05/03/22 09:30	05/20/22 21:55	1
Magnesium	35000		500	150	ug/L		05/03/22 09:30	05/20/22 21:55	1
Manganese	1300		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:55	1
Potassium	5800		500	150	ug/L		05/03/22 09:30	05/20/22 21:55	1
Sodium	48000		1000	610	ug/L		05/03/22 09:30	05/20/22 21:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	19		2.0	0.75	ug/L		05/03/22 09:30	05/12/22 00:47	1
Iron	4000		100	36	ug/L		05/03/22 09:30	05/12/22 00:47	1
Manganese	1100		10	3.6	ug/L		05/03/22 09:30	05/12/22 00:47	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	350		10	4.6	mg/L			05/06/22 10:50	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/06/22 10:50	1
Total Alkalinity as CaCO3	350		10	4.6	mg/L			05/06/22 10:50	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-310A**

**Lab Sample ID: 310-230072-13**

Date Collected: 04/27/22 12:30

Matrix: Water

Date Received: 04/27/22 16:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	6500		100	36	ug/L		05/03/22 09:30	05/20/22 21:59	1
Magnesium	39000		500	150	ug/L		05/03/22 09:30	05/20/22 21:59	1
Manganese	350		10	3.6	ug/L		05/03/22 09:30	05/20/22 21:59	1
Potassium	970		500	150	ug/L		05/03/22 09:30	05/20/22 21:59	1
Sodium	16000		1000	610	ug/L		05/03/22 09:30	05/20/22 21:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	5600		100	36	ug/L		05/03/22 09:30	05/12/22 00:51	1
Manganese	310		10	3.6	ug/L		05/03/22 09:30	05/12/22 00:51	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	320		10	4.6	mg/L			05/06/22 10:50	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/06/22 10:50	1
Total Alkalinity as CaCO3	320		10	4.6	mg/L			05/06/22 10:50	1

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# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-230072-14**

**Date Collected: 04/27/22 13:35**

**Matrix: Water**

**Date Received: 04/27/22 16:05**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		05/03/22 09:30	05/20/22 22:03	1
Magnesium	<150		500	150	ug/L		05/03/22 09:30	05/20/22 22:03	1
Manganese	<3.6		10	3.6	ug/L		05/03/22 09:30	05/20/22 22:03	1
Potassium	<150		500	150	ug/L		05/03/22 09:30	05/20/22 22:03	1
Sodium	<610		1000	610	ug/L		05/03/22 09:30	05/20/22 22:03	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			05/04/22 10:45	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/04/22 10:45	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/04/22 10:45	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Glossary

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

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

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

**Lab Sample ID: MB 310-351736/1-A**  
**Matrix: Water**  
**Analysis Batch: 353878**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 351736**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Iron	<36		100	36	ug/L		05/03/22 09:30	05/20/22 20:29	1
Magnesium	<150		500	150	ug/L		05/03/22 09:30	05/20/22 20:29	1
Manganese	<3.6		10	3.6	ug/L		05/03/22 09:30	05/20/22 20:29	1
Potassium	<150		500	150	ug/L		05/03/22 09:30	05/20/22 20:29	1
Sodium	<610		1000	610	ug/L		05/03/22 09:30	05/20/22 20:29	1

**Lab Sample ID: LCS 310-351736/2-A**  
**Matrix: Water**  
**Analysis Batch: 353878**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 351736**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	Limits
Iron	200	221		ug/L		111		80 - 120
Magnesium	2000	2040		ug/L		102		80 - 120
Manganese	100	100		ug/L		100		80 - 120
Potassium	2000	1960		ug/L		98		80 - 120
Sodium	2000	2000		ug/L		100		80 - 120

**Lab Sample ID: 310-230072-5 DU**  
**Matrix: Water**  
**Analysis Batch: 353878**

**Client Sample ID: MW-305**  
**Prep Type: Total/NA**  
**Prep Batch: 351736**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD	Limit
Iron	<36		<36		ug/L			NC	20
Magnesium	42000		42000		ug/L			0.2	20
Manganese	750		747		ug/L			0.2	20
Potassium	4000		3990		ug/L			0.6	20
Sodium	64000		64400		ug/L			0.1	20

**Lab Sample ID: MB 310-351737/1-A**  
**Matrix: Water**  
**Analysis Batch: 352849**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 351737**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.75		2.0	0.75	ug/L		05/03/22 09:30	05/11/22 22:53	1
Iron	<36		100	36	ug/L		05/03/22 09:30	05/11/22 22:53	1
Manganese	<3.6		10	3.6	ug/L		05/03/22 09:30	05/11/22 22:53	1
Molybdenum	<1.2		2.0	1.2	ug/L		05/03/22 09:30	05/11/22 22:53	1

**Lab Sample ID: LCS 310-351737/2-A**  
**Matrix: Water**  
**Analysis Batch: 352849**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 351737**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	Limits
Arsenic	200	180		ug/L		90		80 - 120
Iron	200	198		ug/L		99		80 - 120
Manganese	100	91.0		ug/L		91		80 - 120
Molybdenum	200	207		ug/L		104		80 - 120



# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

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

**Lab Sample ID: 310-230072-5 DU**  
**Matrix: Water**  
**Analysis Batch: 352849**

**Client Sample ID: MW-305**  
**Prep Type: Dissolved**  
**Prep Batch: 351737**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Arsenic	7.0		6.95		ug/L		0.3	20
Iron	<36		<36		ug/L		NC	20
Manganese	660		664		ug/L		0.07	20
Molybdenum	45		45.7		ug/L		1	20

## Method: 2320B - Alkalinity (Low Level)

**Lab Sample ID: MB 310-351948/1**  
**Matrix: Water**  
**Analysis Batch: 351948**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/04/22 10:45	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/04/22 10:45	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/04/22 10:45	1

**Lab Sample ID: LCS 310-351948/2**  
**Matrix: Water**  
**Analysis Batch: 351948**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Total Alkalinity as CaCO3	1000	964		mg/L		96	90 - 110

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 310-351918/1**  
**Matrix: Water**  
**Analysis Batch: 351918**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/04/22 08:30	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/04/22 08:30	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/04/22 08:30	1

**Lab Sample ID: LCS 310-351918/2**  
**Matrix: Water**  
**Analysis Batch: 351918**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Total Alkalinity as CaCO3	1000	980		mg/L		98	90 - 110

**Lab Sample ID: MB 310-352213/1**  
**Matrix: Water**  
**Analysis Batch: 352213**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/06/22 08:35	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/06/22 08:35	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/06/22 08:35	1

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# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Method: SM 2320B - Alkalinity (Continued)

**Lab Sample ID: LCS 310-352213/2**  
**Matrix: Water**  
**Analysis Batch: 352213**

**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	980		mg/L		98	90 - 110

**Lab Sample ID: MB 310-352244/1**  
**Matrix: Water**  
**Analysis Batch: 352244**

**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			05/06/22 10:50	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/06/22 10:50	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/06/22 10:50	1

**Lab Sample ID: LCS 310-352244/2**  
**Matrix: Water**  
**Analysis Batch: 352244**

**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	980		mg/L		98	90 - 110

# QC Association Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Metals

### Prep Batch: 351736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230072-1	MW-301	Total/NA	Water	3005A	
310-230072-2	MW-302	Total/NA	Water	3005A	
310-230072-3	MW-303	Total/NA	Water	3005A	
310-230072-4	MW-304	Total/NA	Water	3005A	
310-230072-5	MW-305	Total/NA	Water	3005A	
310-230072-6	MW-306	Total/NA	Water	3005A	
310-230072-7	MW-306A	Total/NA	Water	3005A	
310-230072-8	MW-307	Total/NA	Water	3005A	
310-230072-9	MW-308	Total/NA	Water	3005A	
310-230072-10	MW-309	Total/NA	Water	3005A	
310-230072-11	MW-309A	Total/NA	Water	3005A	
310-230072-12	MW-310	Total/NA	Water	3005A	
310-230072-13	MW-310A	Total/NA	Water	3005A	
310-230072-14	Field Blank	Total/NA	Water	3005A	
MB 310-351736/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-351736/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-230072-5 DU	MW-305	Total/NA	Water	3005A	

### Prep Batch: 351737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230072-1	MW-301	Dissolved	Water	3005A	
310-230072-2	MW-302	Dissolved	Water	3005A	
310-230072-3	MW-303	Dissolved	Water	3005A	
310-230072-4	MW-304	Dissolved	Water	3005A	
310-230072-5	MW-305	Dissolved	Water	3005A	
310-230072-6	MW-306	Dissolved	Water	3005A	
310-230072-7	MW-306A	Dissolved	Water	3005A	
310-230072-8	MW-307	Dissolved	Water	3005A	
310-230072-9	MW-308	Dissolved	Water	3005A	
310-230072-10	MW-309	Dissolved	Water	3005A	
310-230072-11	MW-309A	Dissolved	Water	3005A	
310-230072-12	MW-310	Dissolved	Water	3005A	
310-230072-13	MW-310A	Dissolved	Water	3005A	
MB 310-351737/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-351737/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-230072-5 DU	MW-305	Dissolved	Water	3005A	

### Analysis Batch: 352849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230072-1	MW-301	Dissolved	Water	6020A	351737
310-230072-2	MW-302	Dissolved	Water	6020A	351737
310-230072-3	MW-303	Dissolved	Water	6020A	351737
310-230072-4	MW-304	Dissolved	Water	6020A	351737
310-230072-5	MW-305	Dissolved	Water	6020A	351737
310-230072-6	MW-306	Dissolved	Water	6020A	351737
310-230072-7	MW-306A	Dissolved	Water	6020A	351737
310-230072-8	MW-307	Dissolved	Water	6020A	351737
310-230072-9	MW-308	Dissolved	Water	6020A	351737
310-230072-10	MW-309	Dissolved	Water	6020A	351737
310-230072-11	MW-309A	Dissolved	Water	6020A	351737
310-230072-12	MW-310	Dissolved	Water	6020A	351737

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# QC Association Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Metals (Continued)

### Analysis Batch: 352849 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230072-13	MW-310A	Dissolved	Water	6020A	351737
MB 310-351737/1-A	Method Blank	Total/NA	Water	6020A	351737
LCS 310-351737/2-A	Lab Control Sample	Total/NA	Water	6020A	351737
310-230072-5 DU	MW-305	Dissolved	Water	6020A	351737

### Analysis Batch: 353878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230072-1	MW-301	Total/NA	Water	6020A	351736
310-230072-2	MW-302	Total/NA	Water	6020A	351736
310-230072-3	MW-303	Total/NA	Water	6020A	351736
310-230072-4	MW-304	Total/NA	Water	6020A	351736
310-230072-5	MW-305	Total/NA	Water	6020A	351736
310-230072-6	MW-306	Total/NA	Water	6020A	351736
310-230072-7	MW-306A	Total/NA	Water	6020A	351736
310-230072-8	MW-307	Total/NA	Water	6020A	351736
310-230072-9	MW-308	Total/NA	Water	6020A	351736
310-230072-10	MW-309	Total/NA	Water	6020A	351736
310-230072-11	MW-309A	Total/NA	Water	6020A	351736
310-230072-12	MW-310	Total/NA	Water	6020A	351736
310-230072-13	MW-310A	Total/NA	Water	6020A	351736
310-230072-14	Field Blank	Total/NA	Water	6020A	351736
MB 310-351736/1-A	Method Blank	Total/NA	Water	6020A	351736
LCS 310-351736/2-A	Lab Control Sample	Total/NA	Water	6020A	351736
310-230072-5 DU	MW-305	Total/NA	Water	6020A	351736

## General Chemistry

### Analysis Batch: 351918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230072-1	MW-301	Total/NA	Water	SM 2320B	
310-230072-2	MW-302	Total/NA	Water	SM 2320B	
310-230072-8	MW-307	Total/NA	Water	SM 2320B	
310-230072-9	MW-308	Total/NA	Water	SM 2320B	
MB 310-351918/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-351918/2	Lab Control Sample	Total/NA	Water	SM 2320B	

### Analysis Batch: 351948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230072-14	Field Blank	Total/NA	Water	2320B	
MB 310-351948/1	Method Blank	Total/NA	Water	2320B	
LCS 310-351948/2	Lab Control Sample	Total/NA	Water	2320B	

### Analysis Batch: 352213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230072-3	MW-303	Total/NA	Water	SM 2320B	
310-230072-4	MW-304	Total/NA	Water	SM 2320B	
310-230072-5	MW-305	Total/NA	Water	SM 2320B	
310-230072-6	MW-306	Total/NA	Water	SM 2320B	
310-230072-7	MW-306A	Total/NA	Water	SM 2320B	
MB 310-352213/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-352213/2	Lab Control Sample	Total/NA	Water	SM 2320B	

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## General Chemistry

### Analysis Batch: 352244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230072-10	MW-309	Total/NA	Water	SM 2320B	
310-230072-11	MW-309A	Total/NA	Water	SM 2320B	
310-230072-12	MW-310	Total/NA	Water	SM 2320B	
310-230072-13	MW-310A	Total/NA	Water	SM 2320B	
MB 310-352244/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-352244/2	Lab Control Sample	Total/NA	Water	SM 2320B	

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# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Client Sample ID: MW-301

Lab Sample ID: 310-230072-1

Date Collected: 04/25/22 12:13

Matrix: Water

Date Received: 04/27/22 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/11/22 23:46	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 20:52	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	351918	05/04/22 08:30	JMH2	TAL CF

## Client Sample ID: MW-302

Lab Sample ID: 310-230072-2

Date Collected: 04/25/22 13:34

Matrix: Water

Date Received: 04/27/22 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/11/22 23:49	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 20:56	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	351918	05/04/22 08:30	JMH2	TAL CF

## Client Sample ID: MW-303

Lab Sample ID: 310-230072-3

Date Collected: 04/26/22 15:26

Matrix: Water

Date Received: 04/27/22 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/11/22 23:53	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:00	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352213	05/06/22 08:35	JMH2	TAL CF

## Client Sample ID: MW-304

Lab Sample ID: 310-230072-4

Date Collected: 04/26/22 14:07

Matrix: Water

Date Received: 04/27/22 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/11/22 23:57	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:04	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352213	05/06/22 08:35	JMH2	TAL CF



# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Client Sample ID: MW-305

Date Collected: 04/26/22 12:21

Date Received: 04/27/22 16:05

## Lab Sample ID: 310-230072-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/12/22 00:16	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:08	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352213	05/06/22 08:35	JMH2	TAL CF

## Client Sample ID: MW-306

Date Collected: 04/26/22 09:41

Date Received: 04/27/22 16:05

## Lab Sample ID: 310-230072-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/12/22 00:24	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:16	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352213	05/06/22 08:35	JMH2	TAL CF

## Client Sample ID: MW-306A

Date Collected: 04/26/22 10:35

Date Received: 04/27/22 16:05

## Lab Sample ID: 310-230072-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/12/22 00:28	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:20	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352213	05/06/22 08:35	JMH2	TAL CF

## Client Sample ID: MW-307

Date Collected: 04/25/22 15:06

Date Received: 04/27/22 16:05

## Lab Sample ID: 310-230072-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/12/22 00:32	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:24	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	351918	05/04/22 08:30	JMH2	TAL CF

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-308**  
**Date Collected: 04/25/22 17:09**  
**Date Received: 04/27/22 16:05**

**Lab Sample ID: 310-230072-9**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/12/22 00:36	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:43	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	351918	05/04/22 08:30	JMH2	TAL CF

**Client Sample ID: MW-309**  
**Date Collected: 04/27/22 09:38**  
**Date Received: 04/27/22 16:05**

**Lab Sample ID: 310-230072-10**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/12/22 00:39	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:47	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352244	05/06/22 10:50	JMH2	TAL CF

**Client Sample ID: MW-309A**  
**Date Collected: 04/26/22 15:01**  
**Date Received: 04/27/22 16:05**

**Lab Sample ID: 310-230072-11**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/12/22 00:43	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:51	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352244	05/06/22 10:50	JMH2	TAL CF

**Client Sample ID: MW-310**  
**Date Collected: 04/27/22 11:18**  
**Date Received: 04/27/22 16:05**

**Lab Sample ID: 310-230072-12**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/12/22 00:47	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:55	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352244	05/06/22 10:50	JMH2	TAL CF

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

**Client Sample ID: MW-310A**

**Lab Sample ID: 310-230072-13**

**Date Collected: 04/27/22 12:30**

**Matrix: Water**

**Date Received: 04/27/22 16:05**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			351737	05/03/22 09:30	ACM2	TAL CF
Dissolved	Analysis	6020A		1	352849	05/12/22 00:51	SAP	TAL CF
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 21:59	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352244	05/06/22 10:50	JMH2	TAL CF

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-230072-14**

**Date Collected: 04/27/22 13:35**

**Matrix: Water**

**Date Received: 04/27/22 16:05**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			351736	05/03/22 09:30	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353878	05/20/22 22:03	SAP	TAL CF
Total/NA	Analysis	2320B		1	351948	05/04/22 10:45	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  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

## Laboratory: Eurofins Cedar Falls

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

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

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

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

# Method Summary

Client: SCS Engineers  
Project/Site: Prairie Creek, 25222074 MNA Parameters

Job ID: 310-230072-1

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.

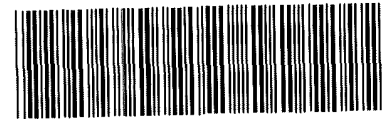
**Laboratory References:**

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





Environment Testing  
America



310-230072 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <i>SIS Engineers</i>			
City/State:	<i>Clive</i>	STATE: <i>IA</i>	Project:
<b>Receipt Information</b>			
Date/Time Received:	<i>4/17/02</i>	TIME: <i>16:05</i>	Received By: <i>JT</i>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes: Cooler ID: _____			
Multiple Coolers? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Cooler # _____ of _____			
Cooler Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Sample Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Which VOA samples are in cooler? ↓			
<i>MW 206 2320 B-Alkalinity - carb/bicarb MT</i>			
<b>Temperature Record</b>			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <i>P</i>		Correction Factor (°C): <i>-0.1</i>	
• <b>Temp Blank Temperature</b> – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <i>2.1</i>		Corrected Temp (°C): <i>2.0</i>	
• <b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			





# Chain of Custody Record

eurofins

<b>Client Information</b>		Lab PM Fredrick Sandie		Carrier Tracking No(s) 310-70420-16416.1						
Client Contact: Rosa Cruz		E-Mail Sandra.Fredrick@et.eurofins.com		Page: Page 1 of 2						
Company SCS Engineers		PWSID		Job #:						
Address 8450 Hickman Road Suite 27		Due Date Requested		Preservation Codes						
City Clive		TAT Requested (days):		A HCl B NaOH C Zn Acetate D Nitric Acid E NaHSO4 F MeOH G Arsenic Acid H Ascorbic Acid I Ice J DI Water K EDTA L-EDA Other						
State Zip: IA, 50325		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		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)						
Phone: 25222074		PO #: 25222074		Total Number of Containers						
Email: rcruz@scsengineers.com		WO #		X						
Project Name: Prairie Creek, 25222074 MNA Parameters		Project # 31011020		Special Instructions/Note:						
Site SSOW#:		SSOW#:								
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, D=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	320B - Alkalinity - Carb/Bicarb	6020A - Total Metals (6)	6020A - Dissolved Metals (2-4)	Analysis Requested
MW-301	4-25-22	12:15	6	Water	X	X	X	X	X	
MW-301A				Water						
MW-302	4-25-22	13:34	6	Water		X	X	X	X	
MW-303	4-26-22	15:26	6	Water		X	X	X	X	
MW-304	4-26-22	14:07	6	Water		X	X	X	X	
MW-305	4-26-22	12:21	6	Water		X	X	X	X	
MW-306	4-26-22	9:41	6	Water		X	X	X	X	
MW-306A	4-26-22	10:35	6	Water		X	X	X	X	
MW-307	4-25-22	15:06	6	Water		X	X	X	X	
MW-308	4-25-22	14:25	6	Water		X	X	X	X	
MW-309	4-27-22	9:38	6	Water		X	X	X	X	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I II III IV Other (specify)										
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months										
Special Instructions/QC Requirements										
Empty Kit Relinquished by										
Relinquished by: <i>Rosa Cruz</i> Date/Time: 4-27-22 15:20										
Relinquished by: <i>Angie Muehling</i> Date/Time: 4/27/22 1405										
Relinquished by: _____ Date/Time: _____										
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No										
Custody Seal No										
Cooler Temperature(s) °C and Other Remarks:										



# Chain of Custody Record

Client Information		Sampler		Lab PM:		Carrier Tracking No(s)		COC No:			
Client Contact:		Phone: <i>515-844-9390</i>		Fredrick, Sandie		State of Origin:		310-70420-16416.2			
Company:		E-Mail: Sandra.Fredrick@et.eurofins.com		I-PWSID:		Analysis Requested		Page: Page 2 of 2			
SCS Engineers		Address: 8450 Hickman Road Suite 27		Due Date Requested:		Total Number of Containers		Job #:			
City: Clive		TAT Requested (days)		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Perform MS/MSD (Yes or No)		Preservation Codes			
State, Zip: IA, 50325		PO #: 25222074		Sample Date		220B - Alkalinity - Carb/Bicarb		A - HCL			
Phone:		WO #: 31011020		Sample Time		6020A - Total Metals (6)		M - Hexane			
Email: rcr Cruz@scsengineers.com		Project #:		Preservation Code		6020A - Dissolved Metals (2-4)		N - None			
Project Name: Prairie Creek, 25222074 MNA Parameters		SSOW#:		Matrix (W-water, S-solid, O-wastewat, G-grab)		N D		O - AsNaO2			
Site:		Sample Date		Sample Type (C=comp, G=grab)		N D		P - Na2SO4			
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	220B - Alkalinity - Carb/Bicarb	6020A - Total Metals (6)	6020A - Dissolved Metals (2-4)	Analysis Requested	Special Instructions/Note:
MW-309A	4-26-22	15:01	6	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
MW-310	4-27-22	11:18	6	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
MW-310A	4-27-22	12:30	6	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Field Blank	4-27-22	13:35	6	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I, II, III, IV, Other (specify)											
<b>Empty Kit Relinquished by</b> Relinquished by: <i>Rosa Cruz</i> Date/Time: <i>4-27-22 15:26</i> Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____											
Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cooler Temperature(s) °C and Other Remarks:											



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project #25221074

Parameter	MW- 301	MW- 301A	MW- 302	MW- 303	MW- 304	MW- 305	MW- 306	MW- 306A	MW- 307	MW- 308	MW- 309	MW- 309A	MW- 310	MW- 310A	Field Blank	TOTAL
	Appendix III Parameters (Detection Monitoring)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Appendix IV Parameters (Assessment Monitoring)	Boron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Chloride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Sulfate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	TDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Antimony	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Barium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Beryllium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Cadmium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Chromium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Cobalt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Lead	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Lithium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Mercury	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Molybdenum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Selenium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Thallium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Radium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Field Parameters	Groundwater Elevation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Well Depth	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Specific Conductance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	ORP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Temperature	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Turbidity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Color	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Odor	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Total (Unfiltered)	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Magnesium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Manganese		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Potassium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Sodium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Dissolved (Filtered)	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	6
	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Field Parameters	Molybdenum															1
	Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14

COCS #1 (non-radium) & #2 (radium) - CCR Rule Parameters

COC #3 - MNA Parameters



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-230072-1

**Login Number: 230072**

**List Number: 1**

**Creator: Muehling, Angela C**

**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.	False	Sample MW-306 unpreserved 250 received empty
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	

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-230071-1

Client Project/Site: Prairie Creek CCR - 25222074  
Revision: 1

For:  
SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
6/3/2022 4:00:25 PM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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# Case Narrative

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

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## Job ID: 310-230071-1

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### Laboratory: Eurofins Cedar Falls

#### Narrative

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#### Job Narrative 310-230071-1

#### Comments

No additional comments.

#### Revision

The report being provided is a revision of the original report sent on 5/17/2022. The report (revision 1) is being revised due to: REVISED REPORT: Updated field data for ORP MW-303.

#### Receipt

The samples were received on 4/27/2022 3:40 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 0.5° C, 1.5° C, 1.7° C and 3.3° C.

#### HPLC/IC

Methods 300.0, 9056A: The following samples were diluted due to the nature of the sample matrix: MW-301 (310-230071-1), MW-302 (310-230071-2), MW-303 (310-230071-3), MW-304 (310-230071-4), MW-305 (310-230071-5), MW-306 (310-230071-6), MW-306A (310-230071-7), MW-307 (310-230071-8), MW-308 (310-230071-9), MW-309 (310-230071-10), MW-309A (310-230071-11), MW-310 (310-230071-12) and MW-310A (310-230071-13). Elevated reporting limits (RLs) are provided.

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

#### Metals

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

#### General Chemistry

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

# Sample Summary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-230071-1	MW-301	Water	04/25/22 12:13	04/27/22 15:40
310-230071-2	MW-302	Water	04/25/22 13:34	04/27/22 15:40
310-230071-3	MW-303	Water	04/26/22 15:26	04/27/22 15:40
310-230071-4	MW-304	Water	04/26/22 14:07	04/27/22 15:40
310-230071-5	MW-305	Water	04/26/22 12:21	04/27/22 15:40
310-230071-6	MW-306	Water	04/26/22 09:40	04/27/22 15:40
310-230071-7	MW-306A	Water	04/26/22 10:35	04/27/22 15:40
310-230071-8	MW-307	Water	04/25/22 15:06	04/27/22 15:40
310-230071-9	MW-308	Water	04/25/22 17:09	04/27/22 15:40
310-230071-10	MW-309	Water	04/27/22 09:38	04/27/22 15:40
310-230071-11	MW-309A	Water	04/26/22 15:01	04/27/22 15:40
310-230071-12	MW-310	Water	04/27/22 11:18	04/27/22 15:40
310-230071-13	MW-310A	Water	04/27/22 12:30	04/27/22 15:40
310-230071-14	Field Blank	Water	04/27/22 13:35	04/27/22 15:40



# Detection Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Client Sample ID: MW-301

## Lab Sample ID: 310-230071-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	85		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	89		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	0.80	J	2.0	0.75	ug/L	1		6020A	Total/NA
Barium	280		2.0	0.88	ug/L	1		6020A	Total/NA
Cadmium	0.072	J	0.10	0.055	ug/L	1		6020A	Total/NA
Calcium	180		0.50	0.19	mg/L	1		6020A	Total/NA
Chromium	5.3		5.0	1.1	ug/L	1		6020A	Total/NA
Lithium	17		10	2.5	ug/L	1		6020A	Total/NA
Selenium	2.9	J	5.0	0.96	ug/L	1		6020A	Total/NA
Thallium	0.27	J	1.0	0.26	ug/L	1		6020A	Total/NA
Total Dissolved Solids	680		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	714.50				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	120.0				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	4.14				mg/L	1		Field Sampling	Total/NA
pH, Field	6.92				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1155				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	10.4				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	20.6				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-302

## Lab Sample ID: 310-230071-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.2		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	140		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	1.2	J	2.0	0.75	ug/L	1		6020A	Total/NA
Barium	110		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	100		100	58	ug/L	1		6020A	Total/NA
Cadmium	0.38		0.10	0.055	ug/L	1		6020A	Total/NA
Calcium	65		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	31		0.50	0.19	ug/L	1		6020A	Total/NA
Lead	0.26	J	0.50	0.24	ug/L	1		6020A	Total/NA
Lithium	5.0	J	10	2.5	ug/L	1		6020A	Total/NA
Selenium	3.7	J	5.0	0.96	ug/L	1		6020A	Total/NA
Thallium	0.37	J	1.0	0.26	ug/L	1		6020A	Total/NA
Total Dissolved Solids	340		50	26	mg/L	1		SM 2540C	Total/NA
pH	5.5	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	715.27				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	160.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.25				mg/L	1		Field Sampling	Total/NA
pH, Field	5.35				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	534.2				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	6.8				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	24.2				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-303

## Lab Sample ID: 310-230071-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	100		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	36		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	96		2.0	0.88	ug/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Client Sample ID: MW-303 (Continued)

## Lab Sample ID: 310-230071-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	850		100	58	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.42	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	18		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	11		2.0	1.2	ug/L	1		6020A	Total/NA
Selenium	1.3	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	490		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	703.85				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-70.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.10				mg/L	1		Field Sampling	Total/NA
pH, Field	7.07				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	756				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	9.97				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-304

## Lab Sample ID: 310-230071-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	10		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	160		5.0	2.0	mg/L	5		9056A	Total/NA
Antimony	1.4	J	2.0	0.69	ug/L	1		6020A	Total/NA
Arsenic	14		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	120		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	740		100	58	ug/L	1		6020A	Total/NA
Calcium	140		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.73		0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	16		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	24		2.0	1.2	ug/L	1		6020A	Total/NA
Selenium	1.0	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	660		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	703.82				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-54.0				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.1				mg/L	1		Field Sampling	Total/NA
pH, Field	7.0				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	954.0				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.3				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	21.8				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-305

## Lab Sample ID: 310-230071-5

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	280		5.0	2.0	mg/L	5		9056A	Total/NA
Antimony	1.2	J	2.0	0.69	ug/L	1		6020A	Total/NA
Arsenic	7.3		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	120		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	890		100	58	ug/L	1		6020A	Total/NA
Calcium	140		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.29	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	19		10	2.5	ug/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Client Sample ID: MW-305 (Continued)

## Lab Sample ID: 310-230071-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	47		2.0	1.2	ug/L	1		6020A	Total/NA
Selenium	1.8	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	740		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	703.76				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	32.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.9				mg/L	1		Field Sampling	Total/NA
pH, Field	7.1				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1004				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	7.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	21.7				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-306

## Lab Sample ID: 310-230071-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	110		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	54		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	2100		100	58	ug/L	1		6020A	Total/NA
Calcium	55		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	3.3	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	220		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	330		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.7	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	704.02				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-119.8				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.16				mg/L	1		Field Sampling	Total/NA
pH, Field	7.55				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	513.8				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.3				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	18.9				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-306A

## Lab Sample ID: 310-230071-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	62		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	320		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	130		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	2200		100	58	ug/L	1		6020A	Total/NA
Calcium	150		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	7.8	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	17		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	780		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	704.16				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-77.6				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.14				mg/L	1		Field Sampling	Total/NA
pH, Field	7.21				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1036				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.1				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	21.5				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Client Sample ID: MW-307

## Lab Sample ID: 310-230071-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	31		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	36		5.0	2.0	mg/L	5		9056A	Total/NA
Antimony	0.72	J	2.0	0.69	ug/L	1		6020A	Total/NA
Arsenic	4.2		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	52		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	650		100	58	ug/L	1		6020A	Total/NA
Calcium	27		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	12		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	8.4		2.0	1.2	ug/L	1		6020A	Total/NA
Selenium	2.5	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	100		50	26	mg/L	1		SM 2540C	Total/NA
pH	9.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	708.27				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	8.0				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.09				mg/L	1		Field Sampling	Total/NA
pH, Field	9.47				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	235.3				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	10.2				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	14.8				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-308

## Lab Sample ID: 310-230071-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.3		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	170		5.0	2.0	mg/L	5		9056A	Total/NA
Antimony	0.84	J	2.0	0.69	ug/L	1		6020A	Total/NA
Arsenic	44		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	54		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	4300		100	58	ug/L	1		6020A	Total/NA
Calcium	76		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	50		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	73		2.0	1.2	ug/L	1		6020A	Total/NA
Selenium	5.9		5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	400		50	26	mg/L	1		SM 2540C	Total/NA
pH	9.1	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	705.45				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-113.8				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.06				mg/L	1		Field Sampling	Total/NA
pH, Field	9.22				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	616.7				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.1				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	16.6				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-309

## Lab Sample ID: 310-230071-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	95		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	39		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	100		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	970		100	58	ug/L	1		6020A	Total/NA
Calcium	130		0.50	0.19	mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls



# Detection Summary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Client Sample ID: MW-309 (Continued)

## Lab Sample ID: 310-230071-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.20	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	16		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	18		2.0	1.2	ug/L	1		6020A	Total/NA
Selenium	1.1	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	530		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	703.56				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-3.2				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.10				mg/L	1		Field Sampling	Total/NA
pH, Field	7.24				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	948				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	11.4				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-309A

## Lab Sample ID: 310-230071-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	25		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	120		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	0.79	J	2.0	0.75	ug/L	1		6020A	Total/NA
Barium	180		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	830		100	58	ug/L	1		6020A	Total/NA
Calcium	120		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.34	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	8.4	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	11		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	490		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	702.93				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-135.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.20				mg/L	1		Field Sampling	Total/NA
pH, Field	7.18				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	770				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.4				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	8.18				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-310

## Lab Sample ID: 310-230071-12

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	140		5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	20		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	160		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	860		100	58	ug/L	1		6020A	Total/NA
Calcium	120		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	18		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	45		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	530		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	703.33				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-125.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.08				mg/L	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Client Sample ID: MW-310 (Continued)

## Lab Sample ID: 310-230071-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH, Field	7.30				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	972				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.8				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	10.2				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-310A

## Lab Sample ID: 310-230071-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	43		5.0	2.3	mg/L	5		9056A	Total/NA
Sulfate	140		5.0	2.0	mg/L	5		9056A	Total/NA
Barium	160		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	250		100	58	ug/L	1		6020A	Total/NA
Calcium	140		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	1.8		0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	6.6	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	19		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	570		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	703.68				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-152.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.09				mg/L	1		Field Sampling	Total/NA
pH, Field	7.25				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	982				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	8.94				NTU	1		Field Sampling	Total/NA

## Client Sample ID: Field Blank

## Lab Sample ID: 310-230071-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	4.6	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-301**

**Lab Sample ID: 310-230071-1**

Date Collected: 04/25/22 12:13

Matrix: Water

Date Received: 04/27/22 15:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>85</b>		5.0	2.3	mg/L			05/09/22 22:07	5
Fluoride	<0.22		0.50	0.22	mg/L			05/09/22 22:07	5
<b>Sulfate</b>	<b>89</b>		5.0	2.0	mg/L			05/09/22 22:07	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		05/02/22 09:15	05/10/22 23:56	1
<b>Arsenic</b>	<b>0.80</b>	<b>J</b>	2.0	0.75	ug/L		05/02/22 09:15	05/10/22 23:56	1
<b>Barium</b>	<b>280</b>		2.0	0.88	ug/L		05/02/22 09:15	05/10/22 23:56	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 16:55	1
Boron	<58		100	58	ug/L		05/02/22 09:15	05/10/22 23:56	1
<b>Cadmium</b>	<b>0.072</b>	<b>J</b>	0.10	0.055	ug/L		05/02/22 09:15	05/10/22 23:56	1
<b>Calcium</b>	<b>180</b>		0.50	0.19	mg/L		05/02/22 09:15	05/10/22 23:56	1
<b>Chromium</b>	<b>5.3</b>		5.0	1.1	ug/L		05/02/22 09:15	05/10/22 23:56	1
Cobalt	<0.19		0.50	0.19	ug/L		05/02/22 09:15	05/10/22 23:56	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/10/22 23:56	1
<b>Lithium</b>	<b>17</b>		10	2.5	ug/L		05/02/22 09:15	05/12/22 16:55	1
Molybdenum	<1.2		2.0	1.2	ug/L		05/02/22 09:15	05/10/22 23:56	1
<b>Selenium</b>	<b>2.9</b>	<b>J</b>	5.0	0.96	ug/L		05/02/22 09:15	05/10/22 23:56	1
<b>Thallium</b>	<b>0.27</b>	<b>J</b>	1.0	0.26	ug/L		05/02/22 09:15	05/10/22 23:56	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		05/09/22 15:08	05/10/22 14:19	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>680</b>		50	26	mg/L			04/29/22 15:44	1
<b>pH</b>	<b>7.1</b>	<b>HF</b>	0.1	0.1	SU			04/27/22 19:10	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>714.50</b>				ft			04/25/22 12:13	1
<b>Oxidation Reduction Potential</b>	<b>120.0</b>				millivolts			04/25/22 12:13	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>4.14</b>				mg/L			04/25/22 12:13	1
<b>pH, Field</b>	<b>6.92</b>				SU			04/25/22 12:13	1
<b>Specific Conductance, Field</b>	<b>1155</b>				umhos/cm			04/25/22 12:13	1
<b>Temperature, Field</b>	<b>10.4</b>				Degrees C			04/25/22 12:13	1
<b>Turbidity, Field</b>	<b>20.6</b>				NTU			04/25/22 12:13	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-302**

**Lab Sample ID: 310-230071-2**

Date Collected: 04/25/22 13:34

Matrix: Water

Date Received: 04/27/22 15:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.2		5.0	2.3	mg/L			05/09/22 22:54	5
Fluoride	<0.22		0.50	0.22	mg/L			05/09/22 22:54	5
Sulfate	140		5.0	2.0	mg/L			05/09/22 22:54	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		05/02/22 09:15	05/11/22 00:15	1
Arsenic	1.2	J	2.0	0.75	ug/L		05/02/22 09:15	05/11/22 00:15	1
Barium	110		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 00:15	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:06	1
Boron	100		100	58	ug/L		05/02/22 09:15	05/11/22 00:15	1
Cadmium	0.38		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 00:15	1
Calcium	65		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 00:15	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 00:15	1
Cobalt	31		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 00:15	1
Lead	0.26	J	0.50	0.24	ug/L		05/02/22 09:15	05/11/22 00:15	1
Lithium	5.0	J	10	2.5	ug/L		05/02/22 09:15	05/12/22 17:06	1
Molybdenum	<1.2		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 00:15	1
Selenium	3.7	J	5.0	0.96	ug/L		05/02/22 09:15	05/11/22 00:15	1
Thallium	0.37	J	1.0	0.26	ug/L		05/02/22 09:15	05/11/22 00:15	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		05/09/22 15:08	05/10/22 14:26	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	340		50	26	mg/L			04/29/22 15:44	1
pH	5.5	HF	0.1	0.1	SU			04/27/22 19:13	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	715.27				ft			04/25/22 13:34	1
Oxidation Reduction Potential	160.1				millivolts			04/25/22 13:34	1
Oxygen, Dissolved, Client Supplied	0.25				mg/L			04/25/22 13:34	1
pH, Field	5.35				SU			04/25/22 13:34	1
Specific Conductance, Field	534.2				umhos/cm			04/25/22 13:34	1
Temperature, Field	6.8				Degrees C			04/25/22 13:34	1
Turbidity, Field	24.2				NTU			04/25/22 13:34	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-303**

**Lab Sample ID: 310-230071-3**

Date Collected: 04/26/22 15:26

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>11</b>		5.0	2.3	mg/L			05/09/22 23:11	5
Fluoride	<0.22		0.50	0.22	mg/L			05/09/22 23:11	5
<b>Sulfate</b>	<b>100</b>		5.0	2.0	mg/L			05/09/22 23:11	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		05/02/22 09:15	05/11/22 00:19	1
<b>Arsenic</b>	<b>36</b>		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 00:19	1
<b>Barium</b>	<b>96</b>		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 00:19	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:09	1
<b>Boron</b>	<b>850</b>		100	58	ug/L		05/02/22 09:15	05/11/22 00:19	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 00:19	1
<b>Calcium</b>	<b>110</b>		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 00:19	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 00:19	1
<b>Cobalt</b>	<b>0.42 J</b>		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 00:19	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 00:19	1
<b>Lithium</b>	<b>18</b>		10	2.5	ug/L		05/02/22 09:15	05/12/22 17:09	1
<b>Molybdenum</b>	<b>11</b>		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 00:19	1
<b>Selenium</b>	<b>1.3 J</b>		5.0	0.96	ug/L		05/02/22 09:15	05/11/22 00:19	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 00:19	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		05/09/22 15:08	05/10/22 14:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>490</b>		50	26	mg/L			05/02/22 16:53	1
<b>pH</b>	<b>7.3</b>	<b>HF</b>	0.1	0.1	SU			04/27/22 19:15	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>703.85</b>				ft			04/26/22 15:26	1
<b>Oxidation Reduction Potential</b>	<b>-70.1</b>				millivolts			04/26/22 15:26	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>0.10</b>				mg/L			04/26/22 15:26	1
<b>pH, Field</b>	<b>7.07</b>				SU			04/26/22 15:26	1
<b>Specific Conductance, Field</b>	<b>756</b>				umhos/cm			04/26/22 15:26	1
<b>Temperature, Field</b>	<b>8.7</b>				Degrees C			04/26/22 15:26	1
<b>Turbidity, Field</b>	<b>9.97</b>				NTU			04/26/22 15:26	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-304**

**Lab Sample ID: 310-230071-4**

Date Collected: 04/26/22 14:07

Matrix: Water

Date Received: 04/27/22 15:40

### Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10		5.0	2.3	mg/L			05/09/22 23:27	5
Fluoride	<0.22		0.50	0.22	mg/L			05/09/22 23:27	5
Sulfate	160		5.0	2.0	mg/L			05/09/22 23:27	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	1.4	J	2.0	0.69	ug/L		05/02/22 09:15	05/11/22 00:39	1
Arsenic	14		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 00:39	1
Barium	120		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 00:39	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:13	1
Boron	740		100	58	ug/L		05/02/22 09:15	05/11/22 00:39	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 00:39	1
Calcium	140		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 00:39	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 00:39	1
Cobalt	0.73		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 00:39	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 00:39	1
Lithium	16		10	2.5	ug/L		05/02/22 09:15	05/12/22 17:13	1
Molybdenum	24		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 00:39	1
Selenium	1.0	J	5.0	0.96	ug/L		05/02/22 09:15	05/11/22 00:39	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 00:39	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		05/09/22 15:08	05/10/22 14:30	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	660		50	26	mg/L			05/02/22 16:53	1
pH	7.2	HF	0.1	0.1	SU			04/27/22 19:17	1

### Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	703.82				ft			04/26/22 14:07	1
Oxidation Reduction Potential	-54.0				millivolts			04/26/22 14:07	1
Oxygen, Dissolved, Client Supplied	0.1				mg/L			04/26/22 14:07	1
pH, Field	7.0				SU			04/26/22 14:07	1
Specific Conductance, Field	954.0				umhos/cm			04/26/22 14:07	1
Temperature, Field	8.3				Degrees C			04/26/22 14:07	1
Turbidity, Field	21.8				NTU			04/26/22 14:07	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-305**

**Lab Sample ID: 310-230071-5**

Date Collected: 04/26/22 12:21

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		5.0	2.3	mg/L			05/09/22 23:43	5
Fluoride	<0.22		0.50	0.22	mg/L			05/09/22 23:43	5
Sulfate	280		5.0	2.0	mg/L			05/09/22 23:43	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	1.2	J	2.0	0.69	ug/L		05/02/22 09:15	05/11/22 00:43	1
Arsenic	7.3		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 00:43	1
Barium	120		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 00:43	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:17	1
Boron	890		100	58	ug/L		05/02/22 09:15	05/11/22 00:43	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 00:43	1
Calcium	140		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 00:43	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 00:43	1
Cobalt	0.29	J	0.50	0.19	ug/L		05/02/22 09:15	05/11/22 00:43	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 00:43	1
Lithium	19		10	2.5	ug/L		05/02/22 09:15	05/12/22 17:17	1
Molybdenum	47		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 00:43	1
Selenium	1.8	J	5.0	0.96	ug/L		05/02/22 09:15	05/11/22 00:43	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 00:43	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		05/09/22 15:08	05/10/22 14:32	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	740		50	26	mg/L			05/02/22 16:53	1
pH	7.3	HF	0.1	0.1	SU			04/27/22 19:19	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	703.76				ft			04/26/22 12:21	1
Oxidation Reduction Potential	32.4				millivolts			04/26/22 12:21	1
Oxygen, Dissolved, Client Supplied	0.9				mg/L			04/26/22 12:21	1
pH, Field	7.1				SU			04/26/22 12:21	1
Specific Conductance, Field	1004				umhos/cm			04/26/22 12:21	1
Temperature, Field	7.6				Degrees C			04/26/22 12:21	1
Turbidity, Field	21.7				NTU			04/26/22 12:21	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-306**

**Lab Sample ID: 310-230071-6**

Date Collected: 04/26/22 09:40

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		5.0	2.3	mg/L			05/10/22 00:00	5
Fluoride	<0.22		0.50	0.22	mg/L			05/10/22 00:00	5
Sulfate	110		5.0	2.0	mg/L			05/10/22 00:00	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		05/02/22 09:15	05/11/22 00:46	1
Arsenic	<0.75		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 00:46	1
Barium	54		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 00:46	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:21	1
Boron	2100		100	58	ug/L		05/02/22 09:15	05/11/22 00:46	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 00:46	1
Calcium	55		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 00:46	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 00:46	1
Cobalt	<0.19		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 00:46	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 00:46	1
Lithium	3.3	J	10	2.5	ug/L		05/02/22 09:15	05/12/22 17:21	1
Molybdenum	220		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 00:46	1
Selenium	<0.96		5.0	0.96	ug/L		05/02/22 09:15	05/11/22 00:46	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 00:46	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		05/09/22 15:08	05/10/22 14:34	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	330		50	26	mg/L			05/02/22 16:53	1
pH	7.7	HF	0.1	0.1	SU			04/27/22 19:20	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	704.02				ft			04/26/22 09:40	1
Oxidation Reduction Potential	-119.8				millivolts			04/26/22 09:40	1
Oxygen, Dissolved, Client Supplied	0.16				mg/L			04/26/22 09:40	1
pH, Field	7.55				SU			04/26/22 09:40	1
Specific Conductance, Field	513.8				umhos/cm			04/26/22 09:40	1
Temperature, Field	12.3				Degrees C			04/26/22 09:40	1
Turbidity, Field	18.9				NTU			04/26/22 09:40	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-306A**

**Lab Sample ID: 310-230071-7**

Date Collected: 04/26/22 10:35

Matrix: Water

Date Received: 04/27/22 15:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	62		5.0	2.3	mg/L			05/10/22 00:16	5
Fluoride	<0.22		0.50	0.22	mg/L			05/10/22 00:16	5
Sulfate	320		5.0	2.0	mg/L			05/10/22 00:16	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		05/02/22 09:15	05/11/22 00:50	1
Arsenic	<0.75		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 00:50	1
Barium	130		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 00:50	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:25	1
Boron	2200		100	58	ug/L		05/02/22 09:15	05/11/22 00:50	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 00:50	1
Calcium	150		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 00:50	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 00:50	1
Cobalt	<0.19		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 00:50	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 00:50	1
Lithium	7.8	J	10	2.5	ug/L		05/02/22 09:15	05/12/22 17:25	1
Molybdenum	17		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 00:50	1
Selenium	<0.96		5.0	0.96	ug/L		05/02/22 09:15	05/11/22 00:50	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 00:50	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		05/09/22 15:08	05/10/22 14:36	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	780		50	26	mg/L			05/02/22 16:53	1
pH	7.4	HF	0.1	0.1	SU			04/27/22 19:22	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	704.16				ft			04/26/22 10:35	1
Oxidation Reduction Potential	-77.6				millivolts			04/26/22 10:35	1
Oxygen, Dissolved, Client Supplied	0.14				mg/L			04/26/22 10:35	1
pH, Field	7.21				SU			04/26/22 10:35	1
Specific Conductance, Field	1036				umhos/cm			04/26/22 10:35	1
Temperature, Field	12.1				Degrees C			04/26/22 10:35	1
Turbidity, Field	21.5				NTU			04/26/22 10:35	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-307**

**Lab Sample ID: 310-230071-8**

Date Collected: 04/25/22 15:06

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31		5.0	2.3	mg/L			05/10/22 00:32	5
Fluoride	<0.22		0.50	0.22	mg/L			05/10/22 00:32	5
Sulfate	36		5.0	2.0	mg/L			05/10/22 00:32	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.72	J	2.0	0.69	ug/L		05/02/22 09:15	05/11/22 00:54	1
Arsenic	4.2		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 00:54	1
Barium	52		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 00:54	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:29	1
Boron	650		100	58	ug/L		05/02/22 09:15	05/11/22 00:54	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 00:54	1
Calcium	27		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 00:54	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 00:54	1
Cobalt	<0.19		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 00:54	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 00:54	1
Lithium	12		10	2.5	ug/L		05/02/22 09:15	05/12/22 17:29	1
Molybdenum	8.4		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 00:54	1
Selenium	2.5	J	5.0	0.96	ug/L		05/02/22 09:15	05/11/22 00:54	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 00:54	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		05/09/22 15:08	05/10/22 14:39	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	100		50	26	mg/L			04/29/22 15:44	1
pH	9.2	HF	0.1	0.1	SU			04/27/22 19:24	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	708.27				ft			04/25/22 15:06	1
Oxidation Reduction Potential	8.0				millivolts			04/25/22 15:06	1
Oxygen, Dissolved, Client Supplied	0.09				mg/L			04/25/22 15:06	1
pH, Field	9.47				SU			04/25/22 15:06	1
Specific Conductance, Field	235.3				umhos/cm			04/25/22 15:06	1
Temperature, Field	10.2				Degrees C			04/25/22 15:06	1
Turbidity, Field	14.8				NTU			04/25/22 15:06	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-308**

**Lab Sample ID: 310-230071-9**

Date Collected: 04/25/22 17:09

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.3		5.0	2.3	mg/L			05/10/22 00:49	5
Fluoride	<0.22		0.50	0.22	mg/L			05/10/22 00:49	5
Sulfate	170		5.0	2.0	mg/L			05/10/22 00:49	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.84	J	2.0	0.69	ug/L		05/02/22 09:15	05/11/22 00:58	1
Arsenic	44		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 00:58	1
Barium	54		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 00:58	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:48	1
Boron	4300		100	58	ug/L		05/02/22 09:15	05/11/22 00:58	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 00:58	1
Calcium	76		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 00:58	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 00:58	1
Cobalt	<0.19		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 00:58	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 00:58	1
Lithium	50		10	2.5	ug/L		05/02/22 09:15	05/12/22 17:48	1
Molybdenum	73		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 00:58	1
Selenium	5.9		5.0	0.96	ug/L		05/02/22 09:15	05/11/22 00:58	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 00:58	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		05/09/22 15:08	05/10/22 14:41	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	400		50	26	mg/L			04/29/22 15:44	1
pH	9.1	HF	0.1	0.1	SU			04/27/22 19:25	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	705.45				ft			04/25/22 17:09	1
Oxidation Reduction Potential	-113.8				millivolts			04/25/22 17:09	1
Oxygen, Dissolved, Client Supplied	0.06				mg/L			04/25/22 17:09	1
pH, Field	9.22				SU			04/25/22 17:09	1
Specific Conductance, Field	616.7				umhos/cm			04/25/22 17:09	1
Temperature, Field	11.1				Degrees C			04/25/22 17:09	1
Turbidity, Field	16.6				NTU			04/25/22 17:09	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-309**

**Lab Sample ID: 310-230071-10**

Date Collected: 04/27/22 09:38

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>14</b>		5.0	2.3	mg/L			05/10/22 01:05	5
Fluoride	<0.22		0.50	0.22	mg/L			05/10/22 01:05	5
<b>Sulfate</b>	<b>95</b>		5.0	2.0	mg/L			05/10/22 01:05	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		05/02/22 09:15	05/11/22 01:02	1
<b>Arsenic</b>	<b>39</b>		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 01:02	1
<b>Barium</b>	<b>100</b>		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 01:02	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:52	1
<b>Boron</b>	<b>970</b>		100	58	ug/L		05/02/22 09:15	05/11/22 01:02	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 01:02	1
<b>Calcium</b>	<b>130</b>		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 01:02	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 01:02	1
<b>Cobalt</b>	<b>0.20</b>	<b>J</b>	0.50	0.19	ug/L		05/02/22 09:15	05/11/22 01:02	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 01:02	1
<b>Lithium</b>	<b>16</b>		10	2.5	ug/L		05/02/22 09:15	05/12/22 17:52	1
<b>Molybdenum</b>	<b>18</b>		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 01:02	1
<b>Selenium</b>	<b>1.1</b>	<b>J</b>	5.0	0.96	ug/L		05/02/22 09:15	05/11/22 01:02	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 01:02	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		05/09/22 15:08	05/10/22 14:43	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>530</b>		50	26	mg/L			05/04/22 14:04	1
<b>pH</b>	<b>7.4</b>	<b>HF</b>	0.1	0.1	SU			04/27/22 19:31	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>703.56</b>				ft			04/27/22 09:38	1
<b>Oxidation Reduction Potential</b>	<b>-3.2</b>				millivolts			04/27/22 09:38	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>0.10</b>				mg/L			04/27/22 09:38	1
<b>pH, Field</b>	<b>7.24</b>				SU			04/27/22 09:38	1
<b>Specific Conductance, Field</b>	<b>948</b>				umhos/cm			04/27/22 09:38	1
<b>Temperature, Field</b>	<b>11.7</b>				Degrees C			04/27/22 09:38	1
<b>Turbidity, Field</b>	<b>11.4</b>				NTU			04/27/22 09:38	1



# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-309A**

**Lab Sample ID: 310-230071-11**

Date Collected: 04/26/22 15:01

Matrix: Water

Date Received: 04/27/22 15:40

### Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>25</b>		5.0	2.3	mg/L			05/10/22 01:21	5
Fluoride	<0.22		0.50	0.22	mg/L			05/10/22 01:21	5
<b>Sulfate</b>	<b>120</b>		5.0	2.0	mg/L			05/10/22 01:21	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		05/02/22 09:15	05/11/22 01:06	1
<b>Arsenic</b>	<b>0.79</b>	<b>J</b>	2.0	0.75	ug/L		05/02/22 09:15	05/11/22 01:06	1
<b>Barium</b>	<b>180</b>		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 01:06	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 17:56	1
<b>Boron</b>	<b>830</b>		100	58	ug/L		05/02/22 09:15	05/11/22 01:06	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 01:06	1
<b>Calcium</b>	<b>120</b>		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 01:06	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 01:06	1
<b>Cobalt</b>	<b>0.34</b>	<b>J</b>	0.50	0.19	ug/L		05/02/22 09:15	05/11/22 01:06	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 01:06	1
<b>Lithium</b>	<b>8.4</b>	<b>J</b>	10	2.5	ug/L		05/02/22 09:15	05/12/22 17:56	1
<b>Molybdenum</b>	<b>11</b>		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 01:06	1
Selenium	<0.96		5.0	0.96	ug/L		05/02/22 09:15	05/11/22 01:06	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 01:06	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		05/09/22 15:08	05/10/22 14:45	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>490</b>		50	26	mg/L			05/02/22 16:53	1
<b>pH</b>	<b>7.2</b>	<b>HF</b>	0.1	0.1	SU			04/27/22 19:34	1

### Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>702.93</b>				ft			04/26/22 15:01	1
<b>Oxidation Reduction Potential</b>	<b>-135.7</b>				millivolts			04/26/22 15:01	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>0.20</b>				mg/L			04/26/22 15:01	1
<b>pH, Field</b>	<b>7.18</b>				SU			04/26/22 15:01	1
<b>Specific Conductance, Field</b>	<b>770</b>				umhos/cm			04/26/22 15:01	1
<b>Temperature, Field</b>	<b>14.4</b>				Degrees C			04/26/22 15:01	1
<b>Turbidity, Field</b>	<b>8.18</b>				NTU			04/26/22 15:01	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-310**

**Lab Sample ID: 310-230071-12**

Date Collected: 04/27/22 11:18

Matrix: Water

Date Received: 04/27/22 15:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>22</b>		5.0	2.3	mg/L			05/10/22 02:11	5
Fluoride	<0.22		0.50	0.22	mg/L			05/10/22 02:11	5
<b>Sulfate</b>	<b>140</b>		5.0	2.0	mg/L			05/10/22 02:11	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		05/02/22 09:15	05/11/22 01:14	1
<b>Arsenic</b>	<b>20</b>		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 01:14	1
<b>Barium</b>	<b>160</b>		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 01:14	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 18:03	1
<b>Boron</b>	<b>860</b>		100	58	ug/L		05/02/22 09:15	05/11/22 01:14	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 01:14	1
<b>Calcium</b>	<b>120</b>		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 01:14	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 01:14	1
Cobalt	<0.19		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 01:14	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 01:14	1
<b>Lithium</b>	<b>18</b>		10	2.5	ug/L		05/02/22 09:15	05/12/22 18:03	1
<b>Molybdenum</b>	<b>45</b>		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 01:14	1
Selenium	<0.96		5.0	0.96	ug/L		05/02/22 09:15	05/11/22 01:14	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 01:14	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		05/09/22 15:12	05/10/22 15:00	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>530</b>		50	26	mg/L			05/04/22 14:04	1
<b>pH</b>	<b>7.4</b>	HF	0.1	0.1	SU			04/27/22 19:36	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>703.33</b>				ft			04/27/22 11:18	1
<b>Oxidation Reduction Potential</b>	<b>-125.3</b>				millivolts			04/27/22 11:18	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>0.08</b>				mg/L			04/27/22 11:18	1
<b>pH, Field</b>	<b>7.30</b>				SU			04/27/22 11:18	1
<b>Specific Conductance, Field</b>	<b>972</b>				umhos/cm			04/27/22 11:18	1
<b>Temperature, Field</b>	<b>11.8</b>				Degrees C			04/27/22 11:18	1
<b>Turbidity, Field</b>	<b>10.2</b>				NTU			04/27/22 11:18	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-310A**

**Lab Sample ID: 310-230071-13**

Date Collected: 04/27/22 12:30

Matrix: Water

Date Received: 04/27/22 15:40

### Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>43</b>		5.0	2.3	mg/L			05/10/22 02:27	5
Fluoride	<0.22		0.50	0.22	mg/L			05/10/22 02:27	5
<b>Sulfate</b>	<b>140</b>		5.0	2.0	mg/L			05/10/22 02:27	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		05/02/22 09:15	05/11/22 01:34	1
Arsenic	<0.75		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 01:34	1
<b>Barium</b>	<b>160</b>		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 01:34	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 18:07	1
<b>Boron</b>	<b>250</b>		100	58	ug/L		05/02/22 09:15	05/12/22 18:07	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 01:34	1
<b>Calcium</b>	<b>140</b>		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 01:34	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 01:34	1
<b>Cobalt</b>	<b>1.8</b>		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 01:34	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 01:34	1
<b>Lithium</b>	<b>6.6 J</b>		10	2.5	ug/L		05/02/22 09:15	05/12/22 18:07	1
<b>Molybdenum</b>	<b>19</b>		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 01:34	1
Selenium	<0.96		5.0	0.96	ug/L		05/02/22 09:15	05/11/22 01:34	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 01:34	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		05/09/22 15:12	05/10/22 15:07	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>570</b>		50	26	mg/L			05/04/22 14:57	1
<b>pH</b>	<b>7.3</b>	HF	0.1	0.1	SU			04/27/22 19:37	1

### Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>703.68</b>				ft			04/27/22 12:30	1
<b>Oxidation Reduction Potential</b>	<b>-152.1</b>				millivolts			04/27/22 12:30	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>0.09</b>				mg/L			04/27/22 12:30	1
<b>pH, Field</b>	<b>7.25</b>				SU			04/27/22 12:30	1
<b>Specific Conductance, Field</b>	<b>982</b>				umhos/cm			04/27/22 12:30	1
<b>Temperature, Field</b>	<b>14.6</b>				Degrees C			04/27/22 12:30	1
<b>Turbidity, Field</b>	<b>8.94</b>				NTU			04/27/22 12:30	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-230071-14**

Date Collected: 04/27/22 13:35

Matrix: Water

Date Received: 04/27/22 15:40

**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			05/10/22 02:43	1
Fluoride	<0.044		0.10	0.044	mg/L			05/10/22 02:43	1
Sulfate	<0.40		1.0	0.40	mg/L			05/10/22 02:43	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		05/02/22 09:15	05/11/22 01:38	1
Arsenic	<0.75		2.0	0.75	ug/L		05/02/22 09:15	05/11/22 01:38	1
Barium	<0.88		2.0	0.88	ug/L		05/02/22 09:15	05/11/22 01:38	1
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 18:11	1
Boron	<58		100	58	ug/L		05/02/22 09:15	05/12/22 18:11	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/11/22 01:38	1
Calcium	<0.19		0.50	0.19	mg/L		05/02/22 09:15	05/11/22 01:38	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/11/22 01:38	1
Cobalt	<0.19		0.50	0.19	ug/L		05/02/22 09:15	05/11/22 01:38	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/11/22 01:38	1
Lithium	<2.5		10	2.5	ug/L		05/02/22 09:15	05/12/22 18:11	1
Molybdenum	<1.2		2.0	1.2	ug/L		05/02/22 09:15	05/11/22 01:38	1
Selenium	<0.96		5.0	0.96	ug/L		05/02/22 09:15	05/11/22 01:38	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/11/22 01:38	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		05/09/22 15:12	05/10/22 15:09	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			05/04/22 14:57	1
pH	4.6	HF	0.1	0.1	SU			04/27/22 19:39	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: MB 310-352737/3**  
**Matrix: Water**  
**Analysis Batch: 352737**

**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			05/09/22 20:18	1
Fluoride	<0.044		0.10	0.044	mg/L			05/09/22 20:18	1
Sulfate	<0.40		1.0	0.40	mg/L			05/09/22 20:18	1

**Lab Sample ID: LCS 310-352737/4**  
**Matrix: Water**  
**Analysis Batch: 352737**

**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	9.46		mg/L		95	90 - 110
Fluoride	2.00	1.98		mg/L		99	90 - 110
Sulfate	10.0	9.65		mg/L		97	90 - 110

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

**Lab Sample ID: MB 310-351518/1-A**  
**Matrix: Water**  
**Analysis Batch: 352699**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		05/02/22 09:15	05/10/22 23:48	1
Arsenic	<0.75		2.0	0.75	ug/L		05/02/22 09:15	05/10/22 23:48	1
Barium	<0.88		2.0	0.88	ug/L		05/02/22 09:15	05/10/22 23:48	1
Boron	<58		100	58	ug/L		05/02/22 09:15	05/10/22 23:48	1
Cadmium	<0.055		0.10	0.055	ug/L		05/02/22 09:15	05/10/22 23:48	1
Calcium	<0.19		0.50	0.19	mg/L		05/02/22 09:15	05/10/22 23:48	1
Chromium	<1.1		5.0	1.1	ug/L		05/02/22 09:15	05/10/22 23:48	1
Cobalt	<0.19		0.50	0.19	ug/L		05/02/22 09:15	05/10/22 23:48	1
Lead	<0.24		0.50	0.24	ug/L		05/02/22 09:15	05/10/22 23:48	1
Molybdenum	<1.2		2.0	1.2	ug/L		05/02/22 09:15	05/10/22 23:48	1
Selenium	<0.96		5.0	0.96	ug/L		05/02/22 09:15	05/10/22 23:48	1
Thallium	<0.26		1.0	0.26	ug/L		05/02/22 09:15	05/10/22 23:48	1

**Lab Sample ID: MB 310-351518/1-A**  
**Matrix: Water**  
**Analysis Batch: 352981**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.27		1.0	0.27	ug/L		05/02/22 09:15	05/12/22 16:36	1
Lithium	<2.5		10	2.5	ug/L		05/02/22 09:15	05/12/22 16:36	1

**Lab Sample ID: LCS 310-351518/2-A**  
**Matrix: Water**  
**Analysis Batch: 352699**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	207		ug/L		104	80 - 120
Arsenic	200	190		ug/L		95	80 - 120
Barium	100	101		ug/L		101	80 - 120
Boron	200	200		ug/L		100	80 - 120

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# QC Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

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

**Lab Sample ID: LCS 310-351518/2-A**  
**Matrix: Water**  
**Analysis Batch: 352699**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	100	98.4		ug/L		98	80 - 120
Calcium	2.00	1.62		mg/L		81	80 - 120
Chromium	100	94.5		ug/L		94	80 - 120
Cobalt	100	95.4		ug/L		95	80 - 120
Lead	200	208		ug/L		104	80 - 120
Molybdenum	200	196		ug/L		98	80 - 120
Selenium	400	373		ug/L		93	80 - 120
Thallium	200	205		ug/L		102	80 - 120

**Lab Sample ID: LCS 310-351518/2-A**  
**Matrix: Water**  
**Analysis Batch: 352981**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	100	110		ug/L		110	80 - 120
Lithium	200	223		ug/L		111	80 - 120

**Lab Sample ID: 310-230071-1 MS**  
**Matrix: Water**  
**Analysis Batch: 352699**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.69		200	208		ug/L		104	75 - 125
Arsenic	0.80	J	200	203		ug/L		101	75 - 125
Barium	280		100	380		ug/L		102	75 - 125
Boron	<58		200	215		ug/L		107	75 - 125
Cadmium	0.072	J	100	97.5		ug/L		97	75 - 125
Calcium	180		2.00	174	4	mg/L		-123	75 - 125
Chromium	5.3		100	102		ug/L		97	75 - 125
Cobalt	<0.19		100	94.0		ug/L		94	75 - 125
Lead	<0.24		200	204		ug/L		102	75 - 125
Molybdenum	<1.2		200	204		ug/L		102	75 - 125
Selenium	2.9	J	400	399		ug/L		99	75 - 125
Thallium	0.27	J	200	204		ug/L		102	75 - 125

**Lab Sample ID: 310-230071-1 MS**  
**Matrix: Water**  
**Analysis Batch: 352981**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	<0.27		100	116		ug/L		116	75 - 125
Lithium	17		200	247		ug/L		115	75 - 125

**Lab Sample ID: 310-230071-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 352699**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.69		200	208		ug/L		104	75 - 125	0	20
Arsenic	0.80	J	200	202		ug/L		101	75 - 125	1	20

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# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

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

**Lab Sample ID: 310-230071-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 352699**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier		Result	Qualifier				Limits		Limit
Barium	280		100	379		ug/L		101	75 - 125	0	20
Boron	<58		200	209		ug/L		105	75 - 125	3	20
Cadmium	0.072	J	100	95.6		ug/L		96	75 - 125	2	20
Calcium	180		2.00	172	4	mg/L		-203	75 - 125	1	20
Chromium	5.3		100	101		ug/L		95	75 - 125	1	20
Cobalt	<0.19		100	93.3		ug/L		93	75 - 125	1	20
Lead	<0.24		200	201		ug/L		101	75 - 125	1	20
Molybdenum	<1.2		200	204		ug/L		102	75 - 125	0	20
Selenium	2.9	J	400	395		ug/L		98	75 - 125	1	20
Thallium	0.27	J	200	197		ug/L		99	75 - 125	3	20

**Lab Sample ID: 310-230071-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 352981**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier		Result	Qualifier				Limits		Limit
Beryllium	<0.27		100	115		ug/L		115	75 - 125	1	20
Lithium	17		200	244		ug/L		113	75 - 125	1	20

**Lab Sample ID: 310-230071-11 DU**  
**Matrix: Water**  
**Analysis Batch: 352699**

**Client Sample ID: MW-309A**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier		Result				Qualifier
Antimony	<0.69		<0.69		ug/L		NC	20
Arsenic	0.79	J	0.758	J	ug/L		4	20
Barium	180		188		ug/L		3	20
Boron	830		843		ug/L		2	20
Cadmium	<0.055		<0.055		ug/L		NC	20
Calcium	120		118		mg/L		3	20
Chromium	<1.1		<1.1		ug/L		NC	20
Cobalt	0.34	J	0.346	J	ug/L		3	20
Lead	<0.24		<0.24		ug/L		NC	20
Molybdenum	11		11.4		ug/L		2	20
Selenium	<0.96		<0.96		ug/L		NC	20
Thallium	<0.26		<0.26		ug/L		NC	20

**Lab Sample ID: 310-230071-11 DU**  
**Matrix: Water**  
**Analysis Batch: 352981**

**Client Sample ID: MW-309A**  
**Prep Type: Total/NA**  
**Prep Batch: 351518**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier		Result				Qualifier
Beryllium	<0.27		<0.27		ug/L		NC	20
Lithium	8.4	J	7.58	J	ug/L		11	20

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 310-352446/1-A**  
**Matrix: Water**  
**Analysis Batch: 352628**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 352446**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		05/09/22 15:08	05/10/22 13:45	1

**Lab Sample ID: LCS 310-352446/2-A**  
**Matrix: Water**  
**Analysis Batch: 352628**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 352446**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.66		ug/L		100	80 - 120

**Lab Sample ID: MB 310-352447/1-A**  
**Matrix: Water**  
**Analysis Batch: 352628**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 352447**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		05/09/22 15:12	05/10/22 14:52	1

**Lab Sample ID: LCS 310-352447/2-A**  
**Matrix: Water**  
**Analysis Batch: 352628**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 352447**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.62		ug/L		97	80 - 120

**Lab Sample ID: 310-230071-12 MS**  
**Matrix: Water**  
**Analysis Batch: 352628**

**Client Sample ID: MW-310**  
**Prep Type: Total/NA**  
**Prep Batch: 352447**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.11		1.67	1.57		ug/L		94	80 - 120

**Lab Sample ID: 310-230071-12 MSD**  
**Matrix: Water**  
**Analysis Batch: 352628**

**Client Sample ID: MW-310**  
**Prep Type: Total/NA**  
**Prep Batch: 352447**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.11		1.67	1.50		ug/L		90	80 - 120	5	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 310-351551/1**  
**Matrix: Water**  
**Analysis Batch: 351551**

**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			04/29/22 15:44	1

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# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: LCS 310-351551/2**  
**Matrix: Water**  
**Analysis Batch: 351551**

**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	938		mg/L		94	90 - 110

**Lab Sample ID: MB 310-351735/1**  
**Matrix: Water**  
**Analysis Batch: 351735**

**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			05/02/22 16:53	1

**Lab Sample ID: LCS 310-351735/2**  
**Matrix: Water**  
**Analysis Batch: 351735**

**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	940		mg/L		94	90 - 110

**Lab Sample ID: 310-230071-6 DU**  
**Matrix: Water**  
**Analysis Batch: 351735**

**Client Sample ID: MW-306**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	330		340		mg/L		4	20

**Lab Sample ID: MB 310-351982/1**  
**Matrix: Water**  
**Analysis Batch: 351982**

**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			05/04/22 14:04	1

**Lab Sample ID: LCS 310-351982/2**  
**Matrix: Water**  
**Analysis Batch: 351982**

**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	932		mg/L		93	90 - 110

**Lab Sample ID: 310-230071-10 DU**  
**Matrix: Water**  
**Analysis Batch: 351982**

**Client Sample ID: MW-309**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	530		522		mg/L		0.8	20

**Lab Sample ID: MB 310-351988/1**  
**Matrix: Water**  
**Analysis Batch: 351988**

**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			05/04/22 14:57	1

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# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: LCS 310-351988/2**  
**Matrix: Water**  
**Analysis Batch: 351988**

**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	948		mg/L		95	90 - 110

**Lab Sample ID: 310-230071-13 DU**  
**Matrix: Water**  
**Analysis Batch: 351988**

**Client Sample ID: MW-310A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	570		564		mg/L		1	20

## Method: SM 4500 H+ B - pH

**Lab Sample ID: LCS 310-351285/1**  
**Matrix: Water**  
**Analysis Batch: 351285**

**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	7.1		SU		101	98 - 102

**Lab Sample ID: 310-230071-1 DU**  
**Matrix: Water**  
**Analysis Batch: 351285**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.1	HF	7.1		SU		0.1	20

**Lab Sample ID: 310-230071-10 DU**  
**Matrix: Water**  
**Analysis Batch: 351285**

**Client Sample ID: MW-309**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	HF	7.4		SU		0.5	20

# QC Association Summary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## HPLC/IC

### Analysis Batch: 352737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	9056A	
310-230071-2	MW-302	Total/NA	Water	9056A	
310-230071-3	MW-303	Total/NA	Water	9056A	
310-230071-4	MW-304	Total/NA	Water	9056A	
310-230071-5	MW-305	Total/NA	Water	9056A	
310-230071-6	MW-306	Total/NA	Water	9056A	
310-230071-7	MW-306A	Total/NA	Water	9056A	
310-230071-8	MW-307	Total/NA	Water	9056A	
310-230071-9	MW-308	Total/NA	Water	9056A	
310-230071-10	MW-309	Total/NA	Water	9056A	
310-230071-11	MW-309A	Total/NA	Water	9056A	
310-230071-12	MW-310	Total/NA	Water	9056A	
310-230071-13	MW-310A	Total/NA	Water	9056A	
310-230071-14	Field Blank	Total/NA	Water	9056A	
MB 310-352737/3	Method Blank	Total/NA	Water	9056A	
LCS 310-352737/4	Lab Control Sample	Total/NA	Water	9056A	

## Metals

### Prep Batch: 351518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	3005A	
310-230071-2	MW-302	Total/NA	Water	3005A	
310-230071-3	MW-303	Total/NA	Water	3005A	
310-230071-4	MW-304	Total/NA	Water	3005A	
310-230071-5	MW-305	Total/NA	Water	3005A	
310-230071-6	MW-306	Total/NA	Water	3005A	
310-230071-7	MW-306A	Total/NA	Water	3005A	
310-230071-8	MW-307	Total/NA	Water	3005A	
310-230071-9	MW-308	Total/NA	Water	3005A	
310-230071-10	MW-309	Total/NA	Water	3005A	
310-230071-11	MW-309A	Total/NA	Water	3005A	
310-230071-12	MW-310	Total/NA	Water	3005A	
310-230071-13	MW-310A	Total/NA	Water	3005A	
310-230071-14	Field Blank	Total/NA	Water	3005A	
MB 310-351518/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-351518/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-230071-1 MS	MW-301	Total/NA	Water	3005A	
310-230071-1 MSD	MW-301	Total/NA	Water	3005A	
310-230071-11 DU	MW-309A	Total/NA	Water	3005A	

### Prep Batch: 352446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	7470A	
310-230071-2	MW-302	Total/NA	Water	7470A	
310-230071-3	MW-303	Total/NA	Water	7470A	
310-230071-4	MW-304	Total/NA	Water	7470A	
310-230071-5	MW-305	Total/NA	Water	7470A	
310-230071-6	MW-306	Total/NA	Water	7470A	
310-230071-7	MW-306A	Total/NA	Water	7470A	
310-230071-8	MW-307	Total/NA	Water	7470A	

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# QC Association Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Metals (Continued)

### Prep Batch: 352446 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-9	MW-308	Total/NA	Water	7470A	
310-230071-10	MW-309	Total/NA	Water	7470A	
310-230071-11	MW-309A	Total/NA	Water	7470A	
MB 310-352446/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-352446/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Prep Batch: 352447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-12	MW-310	Total/NA	Water	7470A	
310-230071-13	MW-310A	Total/NA	Water	7470A	
310-230071-14	Field Blank	Total/NA	Water	7470A	
MB 310-352447/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-352447/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-230071-12 MS	MW-310	Total/NA	Water	7470A	
310-230071-12 MSD	MW-310	Total/NA	Water	7470A	

### Analysis Batch: 352628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	7470A	352446
310-230071-2	MW-302	Total/NA	Water	7470A	352446
310-230071-3	MW-303	Total/NA	Water	7470A	352446
310-230071-4	MW-304	Total/NA	Water	7470A	352446
310-230071-5	MW-305	Total/NA	Water	7470A	352446
310-230071-6	MW-306	Total/NA	Water	7470A	352446
310-230071-7	MW-306A	Total/NA	Water	7470A	352446
310-230071-8	MW-307	Total/NA	Water	7470A	352446
310-230071-9	MW-308	Total/NA	Water	7470A	352446
310-230071-10	MW-309	Total/NA	Water	7470A	352446
310-230071-11	MW-309A	Total/NA	Water	7470A	352446
310-230071-12	MW-310	Total/NA	Water	7470A	352447
310-230071-13	MW-310A	Total/NA	Water	7470A	352447
310-230071-14	Field Blank	Total/NA	Water	7470A	352447
MB 310-352446/1-A	Method Blank	Total/NA	Water	7470A	352446
MB 310-352447/1-A	Method Blank	Total/NA	Water	7470A	352447
LCS 310-352446/2-A	Lab Control Sample	Total/NA	Water	7470A	352446
LCS 310-352447/2-A	Lab Control Sample	Total/NA	Water	7470A	352447
310-230071-12 MS	MW-310	Total/NA	Water	7470A	352447
310-230071-12 MSD	MW-310	Total/NA	Water	7470A	352447

### Analysis Batch: 352699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	6020A	351518
310-230071-2	MW-302	Total/NA	Water	6020A	351518
310-230071-3	MW-303	Total/NA	Water	6020A	351518
310-230071-4	MW-304	Total/NA	Water	6020A	351518
310-230071-5	MW-305	Total/NA	Water	6020A	351518
310-230071-6	MW-306	Total/NA	Water	6020A	351518
310-230071-7	MW-306A	Total/NA	Water	6020A	351518
310-230071-8	MW-307	Total/NA	Water	6020A	351518
310-230071-9	MW-308	Total/NA	Water	6020A	351518
310-230071-10	MW-309	Total/NA	Water	6020A	351518

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# QC Association Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Metals (Continued)

### Analysis Batch: 352699 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-11	MW-309A	Total/NA	Water	6020A	351518
310-230071-12	MW-310	Total/NA	Water	6020A	351518
310-230071-13	MW-310A	Total/NA	Water	6020A	351518
310-230071-14	Field Blank	Total/NA	Water	6020A	351518
MB 310-351518/1-A	Method Blank	Total/NA	Water	6020A	351518
LCS 310-351518/2-A	Lab Control Sample	Total/NA	Water	6020A	351518
310-230071-1 MS	MW-301	Total/NA	Water	6020A	351518
310-230071-1 MSD	MW-301	Total/NA	Water	6020A	351518
310-230071-11 DU	MW-309A	Total/NA	Water	6020A	351518

### Analysis Batch: 352981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	6020A	351518
310-230071-2	MW-302	Total/NA	Water	6020A	351518
310-230071-3	MW-303	Total/NA	Water	6020A	351518
310-230071-4	MW-304	Total/NA	Water	6020A	351518
310-230071-5	MW-305	Total/NA	Water	6020A	351518
310-230071-6	MW-306	Total/NA	Water	6020A	351518
310-230071-7	MW-306A	Total/NA	Water	6020A	351518
310-230071-8	MW-307	Total/NA	Water	6020A	351518
310-230071-9	MW-308	Total/NA	Water	6020A	351518
310-230071-10	MW-309	Total/NA	Water	6020A	351518
310-230071-11	MW-309A	Total/NA	Water	6020A	351518
310-230071-12	MW-310	Total/NA	Water	6020A	351518
310-230071-13	MW-310A	Total/NA	Water	6020A	351518
310-230071-14	Field Blank	Total/NA	Water	6020A	351518
MB 310-351518/1-A	Method Blank	Total/NA	Water	6020A	351518
LCS 310-351518/2-A	Lab Control Sample	Total/NA	Water	6020A	351518
310-230071-1 MS	MW-301	Total/NA	Water	6020A	351518
310-230071-1 MSD	MW-301	Total/NA	Water	6020A	351518
310-230071-11 DU	MW-309A	Total/NA	Water	6020A	351518

## General Chemistry

### Analysis Batch: 351285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	SM 4500 H+ B	
310-230071-2	MW-302	Total/NA	Water	SM 4500 H+ B	
310-230071-3	MW-303	Total/NA	Water	SM 4500 H+ B	
310-230071-4	MW-304	Total/NA	Water	SM 4500 H+ B	
310-230071-5	MW-305	Total/NA	Water	SM 4500 H+ B	
310-230071-6	MW-306	Total/NA	Water	SM 4500 H+ B	
310-230071-7	MW-306A	Total/NA	Water	SM 4500 H+ B	
310-230071-8	MW-307	Total/NA	Water	SM 4500 H+ B	
310-230071-9	MW-308	Total/NA	Water	SM 4500 H+ B	
310-230071-10	MW-309	Total/NA	Water	SM 4500 H+ B	
310-230071-11	MW-309A	Total/NA	Water	SM 4500 H+ B	
310-230071-12	MW-310	Total/NA	Water	SM 4500 H+ B	
310-230071-13	MW-310A	Total/NA	Water	SM 4500 H+ B	
310-230071-14	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-351285/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Eurofins Cedar Falls

# QC Association Summary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## General Chemistry (Continued)

### Analysis Batch: 351285 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1 DU	MW-301	Total/NA	Water	SM 4500 H+ B	
310-230071-10 DU	MW-309	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 351551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	SM 2540C	
310-230071-2	MW-302	Total/NA	Water	SM 2540C	
310-230071-8	MW-307	Total/NA	Water	SM 2540C	
310-230071-9	MW-308	Total/NA	Water	SM 2540C	
MB 310-351551/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-351551/2	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 351735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-3	MW-303	Total/NA	Water	SM 2540C	
310-230071-4	MW-304	Total/NA	Water	SM 2540C	
310-230071-5	MW-305	Total/NA	Water	SM 2540C	
310-230071-6	MW-306	Total/NA	Water	SM 2540C	
310-230071-7	MW-306A	Total/NA	Water	SM 2540C	
310-230071-11	MW-309A	Total/NA	Water	SM 2540C	
MB 310-351735/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-351735/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-230071-6 DU	MW-306	Total/NA	Water	SM 2540C	

### Analysis Batch: 351982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-10	MW-309	Total/NA	Water	SM 2540C	
310-230071-12	MW-310	Total/NA	Water	SM 2540C	
MB 310-351982/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-351982/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-230071-10 DU	MW-309	Total/NA	Water	SM 2540C	

### Analysis Batch: 351988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-13	MW-310A	Total/NA	Water	SM 2540C	
310-230071-14	Field Blank	Total/NA	Water	SM 2540C	
MB 310-351988/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-351988/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-230071-13 DU	MW-310A	Total/NA	Water	SM 2540C	

## Field Service / Mobile Lab

### Analysis Batch: 352589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	Field Sampling	
310-230071-2	MW-302	Total/NA	Water	Field Sampling	
310-230071-3	MW-303	Total/NA	Water	Field Sampling	
310-230071-4	MW-304	Total/NA	Water	Field Sampling	
310-230071-5	MW-305	Total/NA	Water	Field Sampling	
310-230071-6	MW-306	Total/NA	Water	Field Sampling	
310-230071-7	MW-306A	Total/NA	Water	Field Sampling	

Eurofins Cedar Falls

# QC Association Summary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Field Service / Mobile Lab (Continued)

### Analysis Batch: 352589 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-8	MW-307	Total/NA	Water	Field Sampling	
310-230071-9	MW-308	Total/NA	Water	Field Sampling	
310-230071-10	MW-309	Total/NA	Water	Field Sampling	
310-230071-11	MW-309A	Total/NA	Water	Field Sampling	
310-230071-12	MW-310	Total/NA	Water	Field Sampling	
310-230071-13	MW-310A	Total/NA	Water	Field Sampling	

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

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-301**

**Lab Sample ID: 310-230071-1**

**Date Collected: 04/25/22 12:13**

**Matrix: Water**

**Date Received: 04/27/22 15:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/09/22 22:07	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/10/22 23:56	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 16:55	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:19	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351551	04/29/22 15:44	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:10	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/25/22 12:13	SLD	TAL CF

**Client Sample ID: MW-302**

**Lab Sample ID: 310-230071-2**

**Date Collected: 04/25/22 13:34**

**Matrix: Water**

**Date Received: 04/27/22 15:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/09/22 22:54	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 00:15	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:06	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:26	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351551	04/29/22 15:44	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:13	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/25/22 13:34	SLD	TAL CF

**Client Sample ID: MW-303**

**Lab Sample ID: 310-230071-3**

**Date Collected: 04/26/22 15:26**

**Matrix: Water**

**Date Received: 04/27/22 15:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/09/22 23:11	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 00:19	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:09	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:28	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351735	05/02/22 16:53	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:15	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/26/22 15:26	SLD	TAL CF

# Lab Chronicle

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-304**  
**Date Collected: 04/26/22 14:07**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/09/22 23:27	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 00:39	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:13	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:30	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351735	05/02/22 16:53	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:17	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/26/22 14:07	SLD	TAL CF

**Client Sample ID: MW-305**  
**Date Collected: 04/26/22 12:21**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/09/22 23:43	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 00:43	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:17	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:32	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351735	05/02/22 16:53	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:19	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/26/22 12:21	SLD	TAL CF

**Client Sample ID: MW-306**  
**Date Collected: 04/26/22 09:40**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-6**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/10/22 00:00	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 00:46	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:21	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:34	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351735	05/02/22 16:53	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:20	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/26/22 09:40	SLD	TAL CF



# Lab Chronicle

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-306A**

**Lab Sample ID: 310-230071-7**

**Date Collected: 04/26/22 10:35**

**Matrix: Water**

**Date Received: 04/27/22 15:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/10/22 00:16	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 00:50	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:25	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:36	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351735	05/02/22 16:53	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:22	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/26/22 10:35	SLD	TAL CF

**Client Sample ID: MW-307**

**Lab Sample ID: 310-230071-8**

**Date Collected: 04/25/22 15:06**

**Matrix: Water**

**Date Received: 04/27/22 15:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/10/22 00:32	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 00:54	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:29	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:39	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351551	04/29/22 15:44	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:24	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/25/22 15:06	SLD	TAL CF

**Client Sample ID: MW-308**

**Lab Sample ID: 310-230071-9**

**Date Collected: 04/25/22 17:09**

**Matrix: Water**

**Date Received: 04/27/22 15:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/10/22 00:49	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 00:58	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:48	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:41	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351551	04/29/22 15:44	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:25	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/25/22 17:09	SLD	TAL CF

# Lab Chronicle

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

**Client Sample ID: MW-309**  
**Date Collected: 04/27/22 09:38**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-10**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/10/22 01:05	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 01:02	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:52	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:43	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351982	05/04/22 14:04	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:31	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/27/22 09:38	SLD	TAL CF

**Client Sample ID: MW-309A**  
**Date Collected: 04/26/22 15:01**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-11**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/10/22 01:21	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 01:06	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 17:56	SAP	TAL CF
Total/NA	Prep	7470A			352446	05/09/22 15:08	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 14:45	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351735	05/02/22 16:53	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:34	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/26/22 15:01	SLD	TAL CF

**Client Sample ID: MW-310**  
**Date Collected: 04/27/22 11:18**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-12**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/10/22 02:11	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 01:14	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 18:03	SAP	TAL CF
Total/NA	Prep	7470A			352447	05/09/22 15:12	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 15:00	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351982	05/04/22 14:04	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:36	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/27/22 11:18	SLD	TAL CF

# Lab Chronicle

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Client Sample ID: MW-310A

## Lab Sample ID: 310-230071-13

Date Collected: 04/27/22 12:30

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	352737	05/10/22 02:27	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 01:34	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 18:07	SAP	TAL CF
Total/NA	Prep	7470A			352447	05/09/22 15:12	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 15:07	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351988	05/04/22 14:57	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:37	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	352589	04/27/22 12:30	SLD	TAL CF

## Client Sample ID: Field Blank

## Lab Sample ID: 310-230071-14

Date Collected: 04/27/22 13:35

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	352737	05/10/22 02:43	JNR	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352699	05/11/22 01:38	SAP	TAL CF
Total/NA	Prep	3005A			351518	05/02/22 09:15	ACM2	TAL CF
Total/NA	Analysis	6020A		1	352981	05/12/22 18:11	SAP	TAL CF
Total/NA	Prep	7470A			352447	05/09/22 15:12	EAM	TAL CF
Total/NA	Analysis	7470A		1	352628	05/10/22 15:09	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	351988	05/04/22 14:57	TGF	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	351285	04/27/22 19:39	JWH	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  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

## Laboratory: Eurofins Cedar Falls

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

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

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

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

# Method Summary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-1

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"

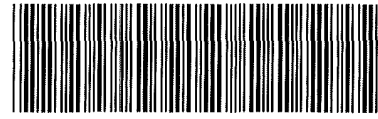
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

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



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310-230071 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS Engineers</u>			
City/State:	<u>Clive</u> <small>CITY</small>	<u>IA</u> <small>STATE</small>	Project:
<b>Receipt Information</b>			
Date/Time Received:	<u>4/27/22</u> <small>DATE</small>	<u>540</u> <small>TIME</small>	Received By: <u>JT</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<b>Temperature Record</b>			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>0</u>	Correction Factor (°C): <u>-0.1</u>	
• <b>Temp Blank Temperature</b> - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>1.8</u>	Corrected Temp (°C): <u>1.7</u>	
• <b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			







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Place COC scanning label  
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Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS Engineers</u>			
City/State:	<u>Clive</u>	<u>IA</u>	Project:
<b>Receipt Information</b>			
Date/Time Received:	<u>4/27/22</u>	<u>1540</u>	Received By: <u>JT</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<b>Temperature Record</b>			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>0</u>	Correction Factor (°C): <u>-0.1</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>1.6</u>	Corrected Temp (°C): <u>1.5</u>	
<b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			



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Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS Engineers</u>			
City/State: <u>Clive IA</u>		Project:	
<b>Receipt Information</b>			
Date/Time Received:	DATE: <u>4/27/22</u>	TIME: <u>5:40</u>	Received By: <u>ST</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?		If yes: Cooler ID:	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Multiple Coolers?		If yes: Cooler # <u>3</u> of <u>4</u>	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Cooler Custody Seals Present?		If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Sample Custody Seals Present?		If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Trip Blank Present?		If yes: Which VOA samples are in cooler? ↓	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<b>Temperature Record</b>			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>0</u>		Correction Factor (°C): <u>-0.1</u>	
* Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>3.4</u>		Corrected Temp (°C): <u>3.3</u>	
* Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			





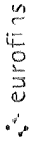
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### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS Engineers</u>			
City/State:	<u>Clive IA</u>	Project:	
<b>Receipt Information</b>			
Date/Time Received:	<u>4/27/22</u>	TIME	<u>5:40</u>
Received By:		<u>JT</u>	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>4</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<b>Temperature Record</b>			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>0</u>	Correction Factor (°C):	<u>0.1</u>
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>0.4</u>	Corrected Temp (°C):	<u>0.5</u>
<b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			

# Chain of Custody Record



<b>Client Information</b>		Lab PM Fredrick, Sandie		Carrier Tracking No(s) 310-70421-145611	
Client Contact: Rosa Cruz		E-Mail Sandra.Fredrick@et.eurofins.com		State of Origin	
Company SCS Engineers		PWSID		Job #	
Address: 8450 Hickman Road Suite 27		Due Date Requested:		Preservation Codes:	
City Clyve		TAT Requested (days)		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 Other	
State, Zip IA, 50325		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		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)	
Phone: 25222074		PO #: 25222074		Total Number of containers	
Email: rcruz@scsengineers.com		WO #		Special Instructions/Note:	
Project Name: Prairie Creek CCR 25222074		Project #: 31011020			
Site: 31011020		SSOW#			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=BTISSUE, A=AIR)	Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Analysis Requested	Total Number of containers
					Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D	N		
MW-301	9-25-22	12:13	G	Water	X		X			
MW-301A				Water						
MW-302	9-25-22	13:34	G	Water			X			
MW-303	9-26-22	15:26	G	Water			X			
MW-304	9-26-22	14:07	G	Water			X			
MW-305	9-26-22	12:21	G	Water			X			
MW-306	9-26-22	9:46	G	Water			X			
MW-306A	9-26-22	10:35	G	Water			X			
MW-307	9-25-22	15:06	G	Water			X			
MW-308	9-25-22	17:09	G	Water			X			
MW-309	9-27-22	9:58	G	Water			X			

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	
Deliverable Requested I II III IV Other (specify)	
Empty Kit Relinquished by	Time
Relinquished by: <i>[Signature]</i>	Date: 9-27-22 15:26
Relinquished by:	Date/Time:
Relinquished by:	Date/Time:
Relinquished by:	Date/Time:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	(Custody Seal No)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Special Instructions/QC Requirements:	
Method of Shipment:	Date/Time:
Received by:	Date/Time:
Received by:	Date/Time:
Received by: <i>[Signature]</i>	Date/Time: 9-27-22 13:00
Company:	Company:
Company:	Company:
Company:	Company:
Company:	Company:



**Eurofins Cedar Falls**

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

**Chain of Custody Record**

eurofins

<b>Client Information</b> Client Contact: Rosa Cruz Phone: 319-844-9346 E-Mail: Sandra.Fredrick@eurofins.com Lab PM: Fredrick, Sandie State of Origin: Carrier Tracking No(s): 310-70421-14561 2 Page: Page 2 of 2 Job #:		COC No: 310-70421-14561 2 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 Other:	
Address: 8450 Hickman Road Suite 27 City: Clive State, Zip: IA, 50325 Phone: 25222074 Email: rcruz@scsengineers.com Project Name: Prairie Creek CCR 25222074 Site:		PO #: 25222074 WO #: Project #: 31011020 SSOW#:	
Due Date Requested TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PWSID:		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> 6020A Metals Hg 2540C Calcd, 9056A_ORGFM_Z8D, SM4500_H+ 903.0 Radium 226 904.0 - Radium 228	
Sample Identification MW-309A MW-310 MW-310A Field Blank		Total Number of Containers: <input checked="" type="checkbox"/>	
Sample Date 4-26-22 4-27-22 4-27-22 4-27-22		Sample Time 15:01 11:18 12:30 13:35	
Sample Type (C=Comp, G=grab) G G G G		Matrix (Water, Solid, Oil, Tissue, Air) Water Water Water Water Water	
Preservation Code G G G G		Special Instructions/Note	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I II III IV Other (specify)			
Empty Kit Relinquished by: Relinquished by: Relinquished by: Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Date 4-27-22 15:20 4-27-22 15:40		Method of Shipment Date/Time: Date/Time: Date/Time: Date/Time:	
Relinquished by: Relinquished by: Relinquished by:		Company: Company: Company:	
Relinquished by: Relinquished by: Relinquished by:		Company: Company: Company:	
Relinquished by: Relinquished by: Relinquished by:		Company: Company: Company:	
Relinquished by: Relinquished by: Relinquished by:		Company: Company: Company:	



**Eurofins Cedar Falls**

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

**Chain of Custody Record**

eurofins

<b>Client Information</b> Client Contact: Rosa Cruz Phone: 515 864 9346 Company: PWSID SCS Engineers Address: 8450 Hickman Road Suite 27 City: Clive State, Zip: IA, 50325 Phone: 25222074 Email: rcruz@scsengineers.com Project Name: Prairie Creek CCR 25222074 Site:		Lab PM: Fredrick, Sandie E-Mail: Sandra.Fredrick@eurofins.com Carrier Tracking No(s): State of Origin:		COC No: 310-70421-14561 1 Page: Page 1 of 2 Job #:									
Due Date Requested TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: 25222074 WO #: Project #: 31011020 SOW#:		<b>Analysis Requested</b> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> 6020A Metals - Hg <input checked="" type="checkbox"/> 2540C Calc'd, 9056A_ORGM_Z8D, SM4500_H+ <input checked="" type="checkbox"/> 903.0 - Radium 226 <input checked="" type="checkbox"/> 904.0 - Radium 228 <input checked="" type="checkbox"/> Total Number of Containers <input checked="" type="checkbox"/>											
<b>Sample Identification</b> Sample ID MW-301 MW-301A MW-302 MW-303 MW-304 MW-305 MW-306 MW-306A MW-307 MW-308 MW-309		Sample Date 4-25-22 4-25-22 4-24-22 4-24-22 4-24-22 4-26-22 4-26-22 4-25-22 4-25-22 4-27-22		Sample Time 12:13 13:29 15:24 19:07 12:21 9:40 10:35 15:04 17:04 9:38		Sample Type (C=Comp, G=grab) G G G G G G G G G G		Matrix (W=Water, S=Solid, O=Other, H=Hazard) Water Water Water Water Water Water Water Water Water Water		Preservation Code 6 6 6 6 6 6 6 6 6 6		Special Instructions/Note: 6020A Metals - Hg 2540C Calc'd, 9056A_ORGM_Z8D, SM4500_H+ 903.0 - Radium 226 904.0 - Radium 228	
<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I II III IV Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements											
<b>Empty Kit Relinquished by</b> Relinquished by: <i>Rosa Cruz</i> Relinquished by: Relinquished by:		Date 4-27-22 15 26 Date/Time: Date/Time: Date/Time:		Method of Shipment Received by: Company Received by: Company Received by: Company									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No		Date/Time: 4/27/22 1540 Date/Time:		Company: Eurofins									



<b>Client Information</b>		Sampler: <u>Rosa Cruz</u>		Lab PM: <u>Fredrick, Sandie</u>		Carrier Tracking No(s)		COC No: 310-70421-145612	
Client Contact: Rosa Cruz		Phone: <u>515 8649340</u>		E-Mail: <u>Sandra.Fredrick@et.eurofins.com</u>		State of Origin		Page: Page 2 of 2	
Company SCS Engineers		PWSID:						Job #:	
Address: 8450 Hickman Road Suite 27		Due Date Requested						Preservation Codes:	
City		TAT Requested (days):						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 Other	
State, Zip: IA, 50325		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No						M Hexane N - None O - AsNaO2 P Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T TSP Dodecahydrate U Acetone V - MCAA W - pH 4-5 Z other (Specify)	
Phone:		PO #: <u>25222074</u>							
Email: <u>rcruz@scsengineers.com</u>		WO #:							
Project Name: Prairie Creek CCR 25222074		Project #: 31011020							
Site:		SSOW#:							

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Matrix (Water, Seawater, On-water, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - Metals Hg	903.0 - Radium 226	904.0 - Radium 228	Analysis Requested	Total Number of Containers	Special Instructions/Note
MW-309A	4-27-22	15:41	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		X	X		X	
MW-310	4-27-22	11:18	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		X	X		X	
MW-310A	4-27-22	12:30	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		X	X		X	
Field Blank	4-27-22	13:35	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		X	X		X	
				Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
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						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						

<b>Possible Hazard Identification</b>		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	
Deliverable Requested I II III IV Other (specify)			
Empty Kit Relinquished by		Date: _____ Time: _____	
Relinquished by <u>[Signature]</u>		Date/Time: <u>4-27-22 15:30</u>	
Relinquished by		Date/Time: _____	
Relinquished by		Date/Time: _____	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No	
Relinquished by <u>[Signature]</u>		Date/Time: <u>4-27-22 15:30</u>	
Relinquished by <u>[Signature]</u>		Date/Time: _____	
Relinquished by <u>[Signature]</u>		Date/Time: _____	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No	

Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project #25221074

Parameter	MW-301	MW-301A	MW-302	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A	MW-310	MW-310A	Field Blank	TOTAL
	Appendix III Parameters (Detection Monitoring)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Appendix IV Parameters (Assessment Monitoring)	Boron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Chloride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Sulfate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	TDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Antimony	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Barium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Beryllium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Cadmium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Chromium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Cobalt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Lead	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Lithium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Mercury	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Molybdenum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Selenium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Thallium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Radium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Field Parameters	Groundwater Elevation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Well Depth	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Specific Conductance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	ORP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Temperature	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Turbidity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Color	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Odor	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Total (Unfiltered)	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Magnesium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Manganese		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Potassium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Sodium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Dissolved (Filtered)	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	6
	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Field Parameters	Molybdenum															1
	Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14

COCS #1 (non-radium) & #2 (radium) - CCR Rule Parameters

COC #3 - MNA Parameters



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-230071-1

**Login Number: 230071**

**List Number: 1**

**Creator: Kizer, Preston V**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <math><6\text{mm}</math> (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**  
**Prairie Creek Generating Station / SCS Engineers Project #25222074.00**  
**April 2022**

Sample	Sample Date/Time	GW Elevation (ft amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity
MW-301	4/25/2022 1213	714.50	10.4	6.92	4.14	1155	120.0	20.6
MW-301A	4/29/2022 1145	707.77	12.9	6.94	27	583.3	116	20.3
MW-302	4/25/2022 1334	715.27	6.8	5.35	0.25	534.2	160.1	24.2
MW-303	4/26/2022 1526	703.85	8.7	7.07	0.10	756	-70.1	9.97
MW-304	4/26/2022 1407	703.82	8.3	7.0	0.1	954.0	-54.0	21.8
MW-305	4/26/2022 1221	703.76	7.6	7.1	0.9	1004	32.4	21.7
MW-306	4/26/2022 941	704.02	12.3	7.55	0.16	513.8	-119.8	18.9
MW-306A	4/26/2022 1035	704.16	12.1	7.21	0.14	1,036	-77.6	21.5
MW-307	4/25/2022 1506	708.27	10.2	9.47	0.09	235.3	8.0	14.8
MW-308	4/25/2022 1709	705.45	11.1	9.22	0.06	616.7	-113.8	16.6
MW-309	4/27/2022 938	703.56	11.7	7.24	0.10	948	-3.2	11.4
MW-309A	4/26/2022 1501	702.93	14.4	7.18	0.20	770	-135.7	8.18
MW-310	4/27/2022 1118	703.33	11.8	7.30	0.08	972	-125.3	10.2
MW-310A	4/27/2022 1230	703.68	14.6	7.25	0.09	982	-152.1	8.94

Abbreviations:

mg/L = milligrams per liter

NA = Not Analyzed

mV = millivolts amsl = above mean sea level

NM = Not measured

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

Date: 10/25/2021  
 Date: 5/4/2022  
 Date: 5/6/2022

C:\Users\fredricks\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\D8427408\[2204\_PCS\_CCR\_Field.xlsx]GW Field Paramete

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-230071-2

Client Project/Site: Prairie Creek CCR - 25222074

For:

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
5/26/2022 7:46:07 AM

Sandie Fredrick, Project Manager II  
(920)261-1660

[Sandra.Fredrick@et.eurofinsus.com](mailto:Sandra.Fredrick@et.eurofinsus.com)

### LINKS

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results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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# Case Narrative

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

## Job ID: 310-230071-2

### Laboratory: Eurofins Cedar Falls

#### Narrative

#### Job Narrative 310-230071-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 4/27/2022 3:40 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 0.5° C, 1.5° C, 1.7° C and 3.3° C.

#### RAD

Methods 903.0, 9315: Radium 226 Batch 160-562833:

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 (310-230071-1), MW-302 (310-230071-2), MW-303 (310-230071-3), MW-304 (310-230071-4), MW-305 (310-230071-5), MW-306 (310-230071-6), MW-306A (310-230071-7), MW-307 (310-230071-8), MW-308 (310-230071-9), MW-309 (310-230071-10), MW-309A (310-230071-11), MW-310 (310-230071-12), MW-310A (310-230071-13), Field Blank (310-230071-14), (LCS 160-562833/1-A), (LCSD 160-562833/2-A) and (MB 160-562833/23-A)

Methods 904.0, 9320: Radium-228 batch 562846

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 (310-230071-1), MW-302 (310-230071-2), MW-303 (310-230071-3), MW-304 (310-230071-4), MW-305 (310-230071-5), MW-306 (310-230071-6), MW-306A (310-230071-7), MW-307 (310-230071-8), MW-308 (310-230071-9), MW-309 (310-230071-10), MW-309A (310-230071-11), MW-310 (310-230071-12), MW-310A (310-230071-13), Field Blank (310-230071-14), (LCS 160-562846/1-A), (LCSD 160-562846/2-A) and (MB 160-562846/23-A)

Method PrecSep\_0: Radium-228 Prep Batch 160-562846

The following sample was prepared at a reduced aliquot due to Matrix: MW-302 (310-230071-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-562833

The following sample was prepared at a reduced aliquot due to Matrix: MW-302 (310-230071-2). 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: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-230071-1	MW-301	Water	04/25/22 12:13	04/27/22 15:40
310-230071-2	MW-302	Water	04/25/22 13:34	04/27/22 15:40
310-230071-3	MW-303	Water	04/26/22 15:26	04/27/22 15:40
310-230071-4	MW-304	Water	04/26/22 14:07	04/27/22 15:40
310-230071-5	MW-305	Water	04/26/22 12:21	04/27/22 15:40
310-230071-6	MW-306	Water	04/26/22 09:40	04/27/22 15:40
310-230071-7	MW-306A	Water	04/26/22 10:35	04/27/22 15:40
310-230071-8	MW-307	Water	04/25/22 15:06	04/27/22 15:40
310-230071-9	MW-308	Water	04/25/22 17:09	04/27/22 15:40
310-230071-10	MW-309	Water	04/27/22 09:38	04/27/22 15:40
310-230071-11	MW-309A	Water	04/26/22 15:01	04/27/22 15:40
310-230071-12	MW-310	Water	04/27/22 11:18	04/27/22 15:40
310-230071-13	MW-310A	Water	04/27/22 12:30	04/27/22 15:40
310-230071-14	Field Blank	Water	04/27/22 13:35	04/27/22 15:40

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# Detection Summary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

<b>Client Sample ID: MW-301</b>	<b>Lab Sample ID: 310-230071-1</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-302</b>	<b>Lab Sample ID: 310-230071-2</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-303</b>	<b>Lab Sample ID: 310-230071-3</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-304</b>	<b>Lab Sample ID: 310-230071-4</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-305</b>	<b>Lab Sample ID: 310-230071-5</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-306</b>	<b>Lab Sample ID: 310-230071-6</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-306A</b>	<b>Lab Sample ID: 310-230071-7</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-307</b>	<b>Lab Sample ID: 310-230071-8</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-308</b>	<b>Lab Sample ID: 310-230071-9</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-309</b>	<b>Lab Sample ID: 310-230071-10</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-309A</b>	<b>Lab Sample ID: 310-230071-11</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-310</b>	<b>Lab Sample ID: 310-230071-12</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-310A</b>	<b>Lab Sample ID: 310-230071-13</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: Field Blank</b>	<b>Lab Sample ID: 310-230071-14</b>
<input type="checkbox"/> No Detections.	

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-301**  
 Date Collected: 04/25/22 12:13  
 Date Received: 04/27/22 15:40

**Lab Sample ID: 310-230071-1**  
 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	0.379		0.116	0.121	1.00	0.0940	pCi/L	04/29/22 09:44	05/25/22 15:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					04/29/22 09:44	05/25/22 15:01	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	0.466		0.251	0.255	1.00	0.375	pCi/L	04/29/22 10:23	05/18/22 12:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	95.8		40 - 110					04/29/22 10:23	05/18/22 12:22	1
Y Carrier	88.2		40 - 110					04/29/22 10:23	05/18/22 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	0.845		0.277	0.282	5.00	0.375	pCi/L		05/25/22 23:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-302**  
 Date Collected: 04/25/22 13:34  
 Date Received: 04/27/22 15:40

**Lab Sample ID: 310-230071-2**  
 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	0.145	U	0.124	0.124	1.00	0.183	pCi/L	04/29/22 09:44	05/25/22 15:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	70.3		40 - 110					04/29/22 09:44	05/25/22 15:01	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	0.344	U	0.402	0.403	1.00	0.662	pCi/L	04/29/22 10:23	05/18/22 12:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	70.3		40 - 110					04/29/22 10:23	05/18/22 12:22	1
Y Carrier	86.7		40 - 110					04/29/22 10:23	05/18/22 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	0.489	U	0.421	0.422	5.00	0.662	pCi/L		05/25/22 23:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-303**  
 Date Collected: 04/26/22 15:26  
 Date Received: 04/27/22 15:40

**Lab Sample ID: 310-230071-3**  
 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	0.160		0.0844	0.0857	1.00	0.0959	pCi/L	04/29/22 09:44	05/25/22 15:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.3		40 - 110					04/29/22 09:44	05/25/22 15:01	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	0.115	U	0.231	0.231	1.00	0.395	pCi/L	04/29/22 10:23	05/18/22 12:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	87.3		40 - 110					04/29/22 10:23	05/18/22 12:22	1
Y Carrier	86.0		40 - 110					04/29/22 10:23	05/18/22 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	0.276	U	0.246	0.246	5.00	0.395	pCi/L		05/25/22 23:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-304**

**Lab Sample ID: 310-230071-4**

Date Collected: 04/26/22 14:07

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.239		0.101	0.103	1.00	0.0974	pCi/L	04/29/22 09:44	05/25/22 15:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.5		40 - 110					04/29/22 09:44	05/25/22 15:01	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	0.200	U	0.257	0.258	1.00	0.427	pCi/L	04/29/22 10:23	05/18/22 12:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	84.5		40 - 110					04/29/22 10:23	05/18/22 12:22	1
Y Carrier	89.7		40 - 110					04/29/22 10:23	05/18/22 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	0.439		0.276	0.278	5.00	0.427	pCi/L		05/25/22 23:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-305**

**Lab Sample ID: 310-230071-5**

Date Collected: 04/26/22 12:21

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.184		0.0911	0.0926	1.00	0.103	pCi/L	04/29/22 09:44	05/25/22 15:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.3		40 - 110					04/29/22 09:44	05/25/22 15:01	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	0.294	U	0.241	0.243	1.00	0.382	pCi/L	04/29/22 10:23	05/18/22 12:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	89.3		40 - 110					04/29/22 10:23	05/18/22 12:23	1
Y Carrier	89.7		40 - 110					04/29/22 10:23	05/18/22 12:23	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	0.478		0.258	0.260	5.00	0.382	pCi/L		05/25/22 23:30	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-306**

**Lab Sample ID: 310-230071-6**

Date Collected: 04/26/22 09:40

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0810	U	0.0720	0.0724	1.00	0.108	pCi/L	04/29/22 09:44	05/25/22 15:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					04/29/22 09:44	05/25/22 15:01	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	1.13		0.319	0.335	1.00	0.408	pCi/L	04/29/22 10:23	05/18/22 12:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	95.0		40 - 110					04/29/22 10:23	05/18/22 12:23	1
Y Carrier	85.2		40 - 110					04/29/22 10:23	05/18/22 12:23	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	1.21		0.327	0.343	5.00	0.408	pCi/L		05/25/22 23:30	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-306A**

**Lab Sample ID: 310-230071-7**

Date Collected: 04/26/22 10:35

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.375		0.134	0.138	1.00	0.140	pCi/L	04/29/22 09:44	05/25/22 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.0		40 - 110					04/29/22 09:44	05/25/22 15:03	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	0.484		0.255	0.259	1.00	0.374	pCi/L	04/29/22 10:23	05/18/22 12:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	84.0		40 - 110					04/29/22 10:23	05/18/22 12:23	1
Y Carrier	93.1		40 - 110					04/29/22 10:23	05/18/22 12:23	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	0.859		0.288	0.293	5.00	0.374	pCi/L		05/25/22 23:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-307**  
**Date Collected: 04/25/22 15:06**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-8**  
**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	0.0224	U	0.0803	0.0804	1.00	0.150	pCi/L	04/29/22 09:44	05/25/22 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.3		40 - 110					04/29/22 09:44	05/25/22 15:03	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	0.309	U	0.279	0.281	1.00	0.451	pCi/L	04/29/22 10:23	05/18/22 12:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	93.3		40 - 110					04/29/22 10:23	05/18/22 12:23	1
Y Carrier	90.5		40 - 110					04/29/22 10:23	05/18/22 12:23	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	0.331	U	0.290	0.292	5.00	0.451	pCi/L		05/25/22 23:30	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-308**  
 Date Collected: 04/25/22 17:09  
 Date Received: 04/27/22 15:40

**Lab Sample ID: 310-230071-9**  
 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	0.0556	U	0.0741	0.0743	1.00	0.124	pCi/L	04/29/22 09:44	05/25/22 15:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		40 - 110					04/29/22 09:44	05/25/22 15:04	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	0.243	U	0.225	0.226	1.00	0.361	pCi/L	04/29/22 10:23	05/18/22 12:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	90.5		40 - 110					04/29/22 10:23	05/18/22 12:24	1
Y Carrier	89.3		40 - 110					04/29/22 10:23	05/18/22 12:24	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	0.299	U	0.237	0.238	5.00	0.361	pCi/L		05/25/22 23:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-309**  
 Date Collected: 04/27/22 09:38  
 Date Received: 04/27/22 15:40

**Lab Sample ID: 310-230071-10**  
 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	0.112	U	0.0901	0.0907	1.00	0.135	pCi/L	04/29/22 09:44	05/25/22 15:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.0		40 - 110					04/29/22 09:44	05/25/22 15:04	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium 228</b>	<b>0.627</b>		0.266	0.272	1.00	0.383	pCi/L	04/29/22 10:23	05/18/22 12:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	96.0		40 - 110					04/29/22 10:23	05/18/22 12:18	1
Y Carrier	92.7		40 - 110					04/29/22 10:23	05/18/22 12:18	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
<b>Radium 226 and 228</b>	<b>0.739</b>		0.281	0.287	5.00	0.383	pCi/L		05/25/22 23:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-309A**

**Lab Sample ID: 310-230071-11**

Date Collected: 04/26/22 15:01

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.318		0.132	0.135	1.00	0.165	pCi/L	04/29/22 09:44	05/25/22 15:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.0		40 - 110					04/29/22 09:44	05/25/22 15:04	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	0.663		0.267	0.274	1.00	0.380	pCi/L	04/29/22 10:23	05/18/22 12:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	96.0		40 - 110					04/29/22 10:23	05/18/22 12:18	1
Y Carrier	91.2		40 - 110					04/29/22 10:23	05/18/22 12:18	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	0.981		0.298	0.305	5.00	0.380	pCi/L		05/25/22 23:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-310**

**Lab Sample ID: 310-230071-12**

Date Collected: 04/27/22 11:18

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.181		0.0900	0.0915	1.00	0.104	pCi/L	04/29/22 09:44	05/25/22 17:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.8		40 - 110					04/29/22 09:44	05/25/22 17:02	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	0.395		0.242	0.244	1.00	0.369	pCi/L	04/29/22 10:23	05/18/22 12:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	92.8		40 - 110					04/29/22 10:23	05/18/22 12:18	1
Y Carrier	93.1		40 - 110					04/29/22 10:23	05/18/22 12:18	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	0.576		0.258	0.261	5.00	0.369	pCi/L		05/25/22 23:30	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-310A**

**Lab Sample ID: 310-230071-13**

Date Collected: 04/27/22 12:30

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.337		0.123	0.127	1.00	0.112	pCi/L	04/29/22 09:44	05/25/22 17:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					04/29/22 09:44	05/25/22 17:03	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	0.325	U	0.223	0.225	1.00	0.344	pCi/L	04/29/22 10:23	05/18/22 12:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	93.5		40 - 110					04/29/22 10:23	05/18/22 12:18	1
Y Carrier	90.8		40 - 110					04/29/22 10:23	05/18/22 12:18	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	0.663		0.255	0.258	5.00	0.344	pCi/L		05/25/22 23:30	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-230071-14**

Date Collected: 04/27/22 13:35

Matrix: Water

Date Received: 04/27/22 15:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.00953	U	0.0653	0.0653	1.00	0.129	pCi/L	04/29/22 09:44	05/25/22 17:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.8		40 - 110					04/29/22 09:44	05/25/22 17:03	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	0.217	U	0.244	0.245	1.00	0.401	pCi/L	04/29/22 10:23	05/18/22 12:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	81.8		40 - 110					04/29/22 10:23	05/18/22 12:18	1
Y Carrier	90.1		40 - 110					04/29/22 10:23	05/18/22 12:18	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	0.253	0.254	5.00	0.401	pCi/L		05/25/22 23:30	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

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



# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-562833/23-A**  
**Matrix: Water**  
**Analysis Batch: 567255**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 562833**

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium 226	0.01870	U	0.0584	0.0584	1.00	0.111	pCi/L	04/29/22 09:44	05/25/22 17:03	1
Carrier	MB	MB	Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	93.3		40 - 110			04/29/22 09:44	05/25/22 17:03	1		

**Lab Sample ID: LCS 160-562833/1-A**  
**Matrix: Water**  
**Analysis Batch: 567255**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 562833**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium 226	11.3	11.16		1.22	1.00	0.126	pCi/L	98	75 - 125
Carrier	LCS	LCS	Limits			Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier							
Ba Carrier	81.3		40 - 110						

**Lab Sample ID: LCSD 160-562833/2-A**  
**Matrix: Water**  
**Analysis Batch: 567255**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 562833**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
				Uncert. (2σ+/-)							
Radium 226	11.3	10.93		1.15	1.00	0.100	pCi/L	96	75 - 125	0.1	1
Carrier	LCSD	LCSD	Limits			Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier									
Ba Carrier	88.5		40 - 110								

## Method: 904.0 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-562846/23-A**  
**Matrix: Water**  
**Analysis Batch: 566379**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 562846**

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium 228	0.05905	U	0.207	0.207	1.00	0.362	pCi/L	04/29/22 10:23	05/18/22 12:18	1
Carrier	MB	MB	Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba	93.3		40 - 110			04/29/22 10:23	05/18/22 12:18	1		
Y Carrier	89.3		40 - 110			04/29/22 10:23	05/18/22 12:18	1		

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

## Method: 904.0 - Radium-228 (GFPC) (Continued)

**Lab Sample ID: LCS 160-562846/1-A**  
**Matrix: Water**  
**Analysis Batch: 566206**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 562846**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium 228	8.61	10.48		1.24	1.00	0.465	pCi/L	122	75 - 125
<b>LCS LCS</b>									
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>						
Ba	81.3		40 - 110						
Y Carrier	83.7		40 - 110						

**Lab Sample ID: LCSD 160-562846/2-A**  
**Matrix: Water**  
**Analysis Batch: 566206**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 562846**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium 228	8.61	9.526		1.12	1.00	0.402	pCi/L	111	75 - 125	0.41	1
<b>LCSD LCSD</b>											
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>								
Ba	88.5		40 - 110								
Y Carrier	87.5		40 - 110								

# QC Association Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

## Rad

### Prep Batch: 562833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	PrecSep-21	
310-230071-2	MW-302	Total/NA	Water	PrecSep-21	
310-230071-3	MW-303	Total/NA	Water	PrecSep-21	
310-230071-4	MW-304	Total/NA	Water	PrecSep-21	
310-230071-5	MW-305	Total/NA	Water	PrecSep-21	
310-230071-6	MW-306	Total/NA	Water	PrecSep-21	
310-230071-7	MW-306A	Total/NA	Water	PrecSep-21	
310-230071-8	MW-307	Total/NA	Water	PrecSep-21	
310-230071-9	MW-308	Total/NA	Water	PrecSep-21	
310-230071-10	MW-309	Total/NA	Water	PrecSep-21	
310-230071-11	MW-309A	Total/NA	Water	PrecSep-21	
310-230071-12	MW-310	Total/NA	Water	PrecSep-21	
310-230071-13	MW-310A	Total/NA	Water	PrecSep-21	
310-230071-14	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-562833/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-562833/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-562833/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 562846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230071-1	MW-301	Total/NA	Water	PrecSep_0	
310-230071-2	MW-302	Total/NA	Water	PrecSep_0	
310-230071-3	MW-303	Total/NA	Water	PrecSep_0	
310-230071-4	MW-304	Total/NA	Water	PrecSep_0	
310-230071-5	MW-305	Total/NA	Water	PrecSep_0	
310-230071-6	MW-306	Total/NA	Water	PrecSep_0	
310-230071-7	MW-306A	Total/NA	Water	PrecSep_0	
310-230071-8	MW-307	Total/NA	Water	PrecSep_0	
310-230071-9	MW-308	Total/NA	Water	PrecSep_0	
310-230071-10	MW-309	Total/NA	Water	PrecSep_0	
310-230071-11	MW-309A	Total/NA	Water	PrecSep_0	
310-230071-12	MW-310	Total/NA	Water	PrecSep_0	
310-230071-13	MW-310A	Total/NA	Water	PrecSep_0	
310-230071-14	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-562846/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-562846/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-562846/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: SCS Engineers  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

**Client Sample ID: MW-301**  
**Date Collected: 04/25/22 12:13**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567255	05/25/22 15:01	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566206	05/18/22 12:22	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

**Client Sample ID: MW-302**  
**Date Collected: 04/25/22 13:34**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567255	05/25/22 15:01	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566206	05/18/22 12:22	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

**Client Sample ID: MW-303**  
**Date Collected: 04/26/22 15:26**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567255	05/25/22 15:01	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566206	05/18/22 12:22	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

**Client Sample ID: MW-304**  
**Date Collected: 04/26/22 14:07**  
**Date Received: 04/27/22 15:40**

**Lab Sample ID: 310-230071-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567255	05/25/22 15:01	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566206	05/18/22 12:22	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

## Client Sample ID: MW-305

Lab Sample ID: 310-230071-5

Date Collected: 04/26/22 12:21

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567255	05/25/22 15:01	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566206	05/18/22 12:23	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

## Client Sample ID: MW-306

Lab Sample ID: 310-230071-6

Date Collected: 04/26/22 09:40

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567255	05/25/22 15:01	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566206	05/18/22 12:23	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

## Client Sample ID: MW-306A

Lab Sample ID: 310-230071-7

Date Collected: 04/26/22 10:35

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567256	05/25/22 15:03	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566206	05/18/22 12:23	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

## Client Sample ID: MW-307

Lab Sample ID: 310-230071-8

Date Collected: 04/25/22 15:06

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567256	05/25/22 15:03	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566206	05/18/22 12:23	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

## Client Sample ID: MW-308

Lab Sample ID: 310-230071-9

Date Collected: 04/25/22 17:09

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567256	05/25/22 15:04	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566206	05/18/22 12:24	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

## Client Sample ID: MW-309

Lab Sample ID: 310-230071-10

Date Collected: 04/27/22 09:38

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567256	05/25/22 15:04	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566379	05/18/22 12:18	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

## Client Sample ID: MW-309A

Lab Sample ID: 310-230071-11

Date Collected: 04/26/22 15:01

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567256	05/25/22 15:04	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566379	05/18/22 12:18	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

## Client Sample ID: MW-310

Lab Sample ID: 310-230071-12

Date Collected: 04/27/22 11:18

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567255	05/25/22 17:02	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566379	05/18/22 12:18	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL



# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

## Client Sample ID: MW-310A

Lab Sample ID: 310-230071-13

Date Collected: 04/27/22 12:30

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567255	05/25/22 17:03	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566379	05/18/22 12:18	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	EMH	TAL SL

## Client Sample ID: Field Blank

Lab Sample ID: 310-230071-14

Date Collected: 04/27/22 13:35

Matrix: Water

Date Received: 04/27/22 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			562833	04/29/22 09:44	MS	TAL SL
Total/NA	Analysis	903.0		1	567255	05/25/22 17:03	SCB	TAL SL
Total/NA	Prep	PrecSep_0			562846	04/29/22 10:23	MS	TAL SL
Total/NA	Analysis	904.0		1	566379	05/18/22 12:18	CLP	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	567285	05/25/22 23:30	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  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

## 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: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

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.

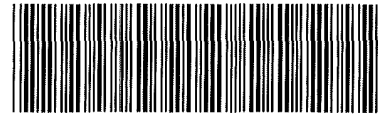
#### Laboratory References:

TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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- 13
- 14
- 15



Environment Testing  
America



310-230071 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS Engineers</u>			
City/State:	<u>Clive</u> <small>CITY</small>	<u>IA</u> <small>STATE</small>	Project:
<b>Receipt Information</b>			
Date/Time Received:	<u>4/27/22</u> <small>DATE</small>	<u>5:40</u> <small>TIME</small>	Received By: <u>JT</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<b>Temperature Record</b>			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>0</u>	Correction Factor (°C): <u>-0.1</u>	
• <b>Temp Blank Temperature</b> - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>1.8</u>	Corrected Temp (°C): <u>1.7</u>	
• <b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			





Environment Testing  
America

Place COC scanning label  
here

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS Engineers</u>			
City/State:	<u>Clive</u>	<u>IA</u>	Project:
<b>Receipt Information</b>			
Date/Time Received:	<u>4/27/22</u>	<u>1540</u>	Received By: <u>JT</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<b>Temperature Record</b>			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>0</u>	Correction Factor (°C): <u>-0.1</u>	
• Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>1.6</u>	Corrected Temp (°C): <u>1.5</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			



Environment Testing  
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Place COC scanning label  
here

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS Engineers</u>			
City/State: <u>Clive IA</u>		Project:	
<b>Receipt Information</b>			
Date/Time Received:	DATE <u>4/27/22</u>	TIME <u>5:40</u>	Received By: <u>ST</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:
Multiple Coolers?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>4</u>
Cooler Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
<b>Temperature Record</b>			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>0</u>		Correction Factor (°C): <u>-0.1</u>	
* Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>3.4</u>		Corrected Temp (°C): <u>3.3</u>	
<b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			





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### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS Engineers</u>			
City/State:	<u>Clive IA</u>	Project:	
<b>Receipt Information</b>			
Date/Time Received:	<u>4/27/22</u>	TIME	<u>5:40</u>
Received By:		<u>JT</u>	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>4</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<b>Temperature Record</b>			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>0</u>	Correction Factor (°C):	<u>0.1</u>
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>0.4</u>	Corrected Temp (°C):	<u>0.5</u>
<b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			

# Chain of Custody Record

<b>Client Information</b>		Lab PM Fredrick, Sandie		Carrier Tracking No(s)		COC No. 310-70421-145611																																												
Client Contact: Rosa Cruz		E-Mail Sandra.Fredrick@et.eurofins.com		State of Origin.		Page: Page 1 of 2																																												
Company SCS Engineers		PWSID		Job #:																																														
Address: 8450 Hickman Road Suite 27		Due Date Requested:		<b>Analysis Requested</b>																																														
City Clive		TAT Requested (days)																																																
State, Zip IA, 50325		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>6020A Metals Hg</td> <td><input checked="" type="checkbox"/></td> <td>D</td> <td>N</td> <td>D</td> <td>D</td> <td rowspan="10" style="vertical-align: top;">                 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                  Other:             </td> </tr> <tr> <td>2540C, Calcd, 9056A_ORGFM_2BD, 5M4500_H+</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>903.0 - Radium 226</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>904.0 - Radium 228</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Field Filtered Sample (Yes or No)</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Perform MS/MSD (Yes or No)</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="6" style="text-align: right;">Total Number of containers</td> </tr> </table>				6020A Metals Hg	<input checked="" type="checkbox"/>	D	N	D	D	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 Other:	2540C, Calcd, 9056A_ORGFM_2BD, 5M4500_H+	<input checked="" type="checkbox"/>					903.0 - Radium 226	<input checked="" type="checkbox"/>					904.0 - Radium 228	<input checked="" type="checkbox"/>					Field Filtered Sample (Yes or No)	<input checked="" type="checkbox"/>					Perform MS/MSD (Yes or No)	<input checked="" type="checkbox"/>					Total Number of containers					
6020A Metals Hg	<input checked="" type="checkbox"/>	D	N					D	D	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 Other:																																								
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Perform MS/MSD (Yes or No)	<input checked="" type="checkbox"/>																																																	
Total Number of containers																																																		
PO #: 25222074		Matrix (W=water, S=solid, O=waste/oil)		Special Instructions/Note:  																																														
WO #:		Sample Type (C=Comp, G=grab)																																																
Project #: 31011020		Sample Time																																																
SSOW#:		Sample Date																																																
		Preservation Code:																																																
		Water																																																
		Water																																																
		Water																																																
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# Chain of Custody Record

euofins

<b>Client Information</b>		Lab PM: Fredrick, Sandie		Carrier Tracking No(s):		COC No: 310-70421-14561 2																																									
Client Contact: Rosa Cruz		E-Mail: Sandra.Fredrick@euofins.com		State of Origin:		Page: Page 2 of 2																																									
Company: SCS Engineers		PWSID:		Analysis Requested																																											
Address: 8450 Hickman Road Suite 27		Due Date Requested:		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">Field Filtered Sample (Yes or No)</td> <td colspan="2">Perform MS/MSD (Yes or No)</td> <td colspan="2">Total Number of Containers</td> <td colspan="2">Special Instructions/Note</td> </tr> <tr> <td colspan="2">6020A Metals Hg</td> <td colspan="2">2540C Calcd, 9056A_ORGFM_28D, SM4500_H+</td> <td colspan="2">903.0 Radium 226</td> <td colspan="2">904.0 - Radium 228</td> </tr> <tr> <td colspan="2">D</td> <td colspan="2">N</td> <td colspan="2">D</td> <td colspan="2">D</td> </tr> <tr> <td colspan="2">X</td> <td colspan="2">X</td> <td colspan="2">X</td> <td colspan="2">X</td> </tr> <tr> <td colspan="2">X</td> <td colspan="2">X</td> <td colspan="2">X</td> <td colspan="2">X</td> </tr> </table>				Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of Containers		Special Instructions/Note		6020A Metals Hg		2540C Calcd, 9056A_ORGFM_28D, SM4500_H+		903.0 Radium 226		904.0 - Radium 228		D		N		D		D		X		X		X		X		X		X		X		X	
Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)						Total Number of Containers		Special Instructions/Note																																					
6020A Metals Hg		2540C Calcd, 9056A_ORGFM_28D, SM4500_H+						903.0 Radium 226		904.0 - Radium 228																																					
D		N						D		D																																					
X		X						X		X																																					
X		X		X		X																																									
City: Clive		TAT Requested (days):		Preservation Codes																																											
State, Zip: IA, 50325		Compliance Project: Δ Yes Δ No		A HCL M Hexane B- NaOH N None C- Zn Acetate O AsNaO2 P Na2O4S D- Nitric Acid E NaHSO4 F MeOH G Amchlor H- Ascorbic Acid I Ice J DI Water K EDTA L- EDA W- pH 4-5 Z- other (specify)																																											
Phone:		PO #: 25222074		Other																																											
Email: rcruz@scsengineers.com		WO #: 31011020																																													
Project Name: Prairie Creek CCR 25222074		Site:																																													

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Oil, Air)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note
MW-309A	4-26-22	15:01	G	Water		X	X		
MW-310	4-27-22	11:18	G	Water		X	X		
MW-310A	4-27-22	12:30	G	Water		X	X		
Field Blank	4-27-22	13:35	G	Water		X	X		

**Possible Hazard Identification**  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological  
 Deliverable Requested I II III IV Other (specify)

**Empty Kit Relinquished by:** \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: 4-27-22 15:20 Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact:  Yes  No  
 Custody Seal No: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_



**Eurofins Cedar Falls**

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

**Chain of Custody Record**

eurofins

<b>Client Information</b> Client Contact: Rosa Cruz Phone: 515 864 9346 Company: PWSID		Lab PM: Fredrick, Sandie E-Mail: Sandra.Fredrick@eurofins.com		Carrier Tracking No(s): State of Origin:		COC No: 310-70421-14561 1 Page: Page 1 of 2 Job #:	
Address: 8450 Hickman Road Suite 27 City: Clive State, Zip: IA, 50325 Phone: 25222074 Email: rcruz@scsengineers.com Project Name: Prairie Creek CCR 25222074 Site:		Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: 25222074 WO #:		<b>Analysis Requested</b>		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 Other:	
Sample Date: 4-25-22 Sample Time: 12:13 Sample Type (C=Comp, G=grab): G Matrix (W=Water, S=solid, O=Other): Water		Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/> Yes Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/> Yes 6020A Metals - Hg 2540C Calcd, 9056A_ORGM_Z8D, SM4500_H+ 903.0 - Radium 226 904.0 - Radium 228		Total Number of Containers: <input checked="" type="checkbox"/>		Special Instructions/Note:	
MW-301	4-25-22	12:13	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-301A				Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-302	4-25-22	13:39	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-303	4-26-22	15:26	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-304	4-26-22	19:07	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-305	4-26-22	12:21	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-306	4-26-22	9:40	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-306A	4-26-22	10:35	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-307	4-25-22	15:06	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-308	4-25-22	17:04	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
MW-309	4-27-22	9:38	G	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I II III IV Other (specify)							
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Special Instructions/QC Requirements							
Empty Kit Relinquished by:				Method of Shipment:			
Relinquished by: <i>Rosa Cruz</i>				Received by:			
Date/Time: 4-27-22 15:26				Date/Time:			
Relinquished by:				Received by:			
Date/Time:				Date/Time:			
Relinquished by:				Received by: <i>Congor Muehlenberg</i>			
Date/Time:				Date/Time: 4/27/22 1540			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No				Cooler Temperature(s) °C and Other Remarks:			
Custody Seal No:				Company: Eurofins			

**Eurofins Cedar Falls**

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

**Chain of Custody Record**



<b>Client Information</b> Client Contact: Rosa Cruz Company: SCS Engineers Address: 8450 Hickman Road Suite 27 City: Clive State, Zip: IA, 50325 Phone: 25222074 Email: rcruz@scsengineers.com Project Name: Prairie Creek CCR 25222074 Site:		Lab PM: Fredrick, Sandie E-Mail: Sandra.Fredrick@et.eurofinsus.com Carrier Tracking No(s): State of Origin:		COC No: 310-70421-145612 Page: Page 2 of 2 Job #:			
Due Date Requested TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: 25222074 WO #: 31011020 Project #: 31011020 SOW#:		Analysis Requested Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> 6020A - Metals Hg <input checked="" type="checkbox"/> 903.0 - Radium 226 <input checked="" type="checkbox"/> 904.0 - Radium 228 <input checked="" type="checkbox"/> Total Number of Containers:					
Sample Identification MW-309A MW-310 MW-310A Field Blank		Sample Date 4-26-22 4-27-22 4-27-22 4-27-22	Sample Time 15:41 11:18 12:30 13:35	Sample Type (C=Comp, G=grab) G G G G	Matrix (Water, Seawater, Other) Water Water Water Water Water	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 Other	Special Instructions/Note 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)
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I II III IV Other (specify)							
Empty Kit Relinquished by: <i>[Signature]</i> Date: 4-27-22 15:30 Relinquished by: <i>[Signature]</i> Date/Time: Relinquished by: <i>[Signature]</i> Date/Time: Relinquished by: <i>[Signature]</i> Date/Time:							
Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No C: 13 Cooler Temperature(s) °C and Other Remarks:							



**Eurofins Cedar Falls**

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

**Chain of Custody Record**



eurofins

Environmental Testing  
LABORATORY

<b>Client Information (Sub Contract Lab)</b> Company: TestAmerica Laboratories, Inc. Address: 13715 Rider Trail North, City: Earth City State, Zip: MO, 63045 Phone: 314-298-8566(Tel) 314-298-8757(Fax) Email: Project Name: Prairie Creek CCR - 25222074 Site:		Lab PM: Fredrick, Sandie E-Mail Sandra.Fredrick@et.eurofins.com Carrier Tracking No(s) 310-49128 1 State of Origin Iowa Page 1 of 2 Job # 310-230071-2									
Due Date Requested: 5/26/2022 TAT Requested (days):		Accreditations Required (See note) State Program - Iowa									
Sample ID (Lab ID) MW-301 (310-230071-1)	Sample Date 4/25/22	Sample Time 12:13 Central	Sample Type (C=Comp, G=grab) Preservation Code: Water	Matrix (Newer, Sealed, On-water/soil, BT= Tissue, A= Air) Water	Field Filtered Sample (Yes or No) X	Perform MS/MSD (Yes or No) X	903.0/PreSep_21 Radium-226 (GFPc) X	904.0/PreSep_0 Radium-228 (GFPc) X	Radium-228 Ra226, 228GFPc, Pl Combined Radium-226 and	Total Number of Containers 2	Special Instructions/Note: DO NOT SHIP ON ICE TO ST. LOUIS
MW-302 (310-230071-2)	4/25/22	13:34 Central	Water	Water	X	X	X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-303 (310-230071-3)	4/26/22	15:26 Central	Water	Water	X	X	X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-304 (310-230071-4)	4/26/22	14:07 Central	Water	Water	X	X	X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-305 (310-230071-5)	4/26/22	12:21 Central	Water	Water	X	X	X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-306 (310-230071-6)	4/26/22	09:40 Central	Water	Water	X	X	X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-306A (310-230071-7)	4/26/22	10:35 Central	Water	Water	X	X	X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-307 (310-230071-8)	4/25/22	15:06 Central	Water	Water	X	X	X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS
MW-308 (310-230071-9)	4/25/22	17:09 Central	Water	Water	X	X	X	X	X	2	DO NOT SHIP ON ICE TO ST. LOUIS

Note: Since laboratory accreditations are subject to change, Eurofins Environmental Testing North Central, LLC places the ownership of method, analysis & accreditation compliance upon our 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/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environmental Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environmental Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environmental Testing North Central, LLC.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
 Empty Kit Relinquished by: Date: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: 4/27/22  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Custody Seal No.: \_\_\_\_\_  
 Custody Seals Intact:  Yes  No  
 Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements: \_\_\_\_\_

Method of Shipment: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: APR 28 2022 08:50 Company: GHSA  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_



Ver: 06/08/2021





# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-230071-2

**Login Number: 230071**

**List Number: 1**

**Creator: Kizer, Preston V**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <math><6\text{mm}</math> (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: 310-230071-2

**Login Number: 230071**

**List Number: 2**

**Creator: Worthington, Sierra M**

**List Source: Eurofins St. Louis**

**List Creation: 04/28/22 11:58 AM**

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  
 Project/Site: Prairie Creek CCR - 25222074

Job ID: 310-230071-2

## Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y
310-230071-1	MW-301	95.8	
310-230071-2	MW-302	70.3	
310-230071-3	MW-303	87.3	
310-230071-4	MW-304	84.5	
310-230071-5	MW-305	89.3	
310-230071-6	MW-306	95.0	
310-230071-7	MW-306A	84.0	
310-230071-8	MW-307	93.3	
310-230071-9	MW-308	90.5	
310-230071-10	MW-309	96.0	
310-230071-11	MW-309A	96.0	
310-230071-12	MW-310	92.8	
310-230071-13	MW-310A	93.5	
310-230071-14	Field Blank	81.8	
LCS 160-562833/1-A	Lab Control Sample	81.3	
LCSD 160-562833/2-A	Lab Control Sample Dup	88.5	
MB 160-562833/23-A	Method Blank	93.3	

**Tracer/Carrier Legend**

Ba = Ba Carrier

## Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
310-230071-1	MW-301	95.8	88.2
310-230071-2	MW-302	70.3	86.7
310-230071-3	MW-303	87.3	86.0
310-230071-4	MW-304	84.5	89.7
310-230071-5	MW-305	89.3	89.7
310-230071-6	MW-306	95.0	85.2
310-230071-7	MW-306A	84.0	93.1
310-230071-8	MW-307	93.3	90.5
310-230071-9	MW-308	90.5	89.3
310-230071-10	MW-309	96.0	92.7
310-230071-11	MW-309A	96.0	91.2
310-230071-12	MW-310	92.8	93.1
310-230071-13	MW-310A	93.5	90.8
310-230071-14	Field Blank	81.8	90.1
LCS 160-562846/1-A	Lab Control Sample	81.3	83.7
LCSD 160-562846/2-A	Lab Control Sample Dup	88.5	87.5
MB 160-562846/23-A	Method Blank	93.3	89.3

**Tracer/Carrier Legend**

Ba = Ba

Y = Y Carrier

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-230384-1

Client Project/Site: Prarie Creek - 25222074 MNA  
Revision: 1

For:  
SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
5/27/2022 10:35:57 AM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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# Case Narrative

Client: SCS Engineers  
Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

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**Job ID: 310-230384-1**

---

**Laboratory: Eurofins Cedar Falls**

## Narrative

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**Job Narrative**  
**310-230384-1**

## Comments

No additional comments.

## Revision

The report being provided is a revision of the original report sent on 5/23/2022. The report (revision 1) is being revised due to: Revised - removal of calcium

## Receipt

The sample was received on 5/2/2022 4:35 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.2° C.

## Metals

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

## General Chemistry

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



# Sample Summary

Client: SCS Engineers  
Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-230384-1	MW-301A	Water	04/29/22 11:45	05/02/22 16:35

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

# Detection Summary

Client: SCS Engineers  
 Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

**Client Sample ID: MW-301A**

**Lab Sample ID: 310-230384-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	2500		100	36	ug/L	1		6020A	Total/NA
Magnesium	19000		500	150	ug/L	1		6020A	Total/NA
Manganese	380		10	3.6	ug/L	1		6020A	Total/NA
Potassium	1300		500	150	ug/L	1		6020A	Total/NA
Sodium	11000		1000	610	ug/L	1		6020A	Total/NA
Iron	2300		100	36	ug/L	1		6020A	Dissolved
Manganese	380		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

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

**Client Sample ID: MW-301A**

**Lab Sample ID: 310-230384-1**

Date Collected: 04/29/22 11:45

Matrix: Water

Date Received: 05/02/22 16:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2500		100	36	ug/L		05/06/22 09:00	05/21/22 17:09	1
Magnesium	19000		500	150	ug/L		05/06/22 09:00	05/21/22 17:09	1
Manganese	380		10	3.6	ug/L		05/06/22 09:00	05/21/22 17:09	1
Potassium	1300		500	150	ug/L		05/06/22 09:00	05/21/22 17:09	1
Sodium	11000		1000	610	ug/L		05/06/22 09:00	05/21/22 17:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2300		100	36	ug/L		05/06/22 09:00	05/21/22 19:32	1
Manganese	380		10	3.6	ug/L		05/06/22 09:00	05/21/22 19:32	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	290		10	4.6	mg/L			05/12/22 11:28	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			05/12/22 11:28	1
Total Alkalinity as CaCO3	290		10	4.6	mg/L			05/12/22 11:28	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

## Glossary

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

# QC Sample Results

Client: SCS Engineers  
Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

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

**Lab Sample ID: MB 310-352159/1-A**  
**Matrix: Water**  
**Analysis Batch: 353952**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 352159**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		05/06/22 09:00	05/21/22 18:47	1
Manganese	<3.6		10	3.6	ug/L		05/06/22 09:00	05/21/22 18:47	1

**Lab Sample ID: LCS 310-352159/2-A**  
**Matrix: Water**  
**Analysis Batch: 353952**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 352159**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	200	198		ug/L		99	80 - 120
Manganese	100	93.6		ug/L		94	80 - 120

**Lab Sample ID: MB 310-352210/1-A**  
**Matrix: Water**  
**Analysis Batch: 353952**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 352210**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		05/06/22 09:00	05/21/22 15:52	1
Magnesium	<150		500	150	ug/L		05/06/22 09:00	05/21/22 15:52	1
Manganese	<3.6		10	3.6	ug/L		05/06/22 09:00	05/21/22 15:52	1
Potassium	<150		500	150	ug/L		05/06/22 09:00	05/21/22 15:52	1
Sodium	<610		1000	610	ug/L		05/06/22 09:00	05/21/22 15:52	1

**Lab Sample ID: LCS 310-352210/2-A**  
**Matrix: Water**  
**Analysis Batch: 353952**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 352210**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	2.00	1.75		mg/L		88	80 - 120
Iron	200	212		ug/L		106	80 - 120
Magnesium	2000	1910		ug/L		95	80 - 120
Manganese	100	97.6		ug/L		98	80 - 120
Potassium	2000	1930		ug/L		97	80 - 120
Sodium	2000	2240		ug/L		112	80 - 120

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 310-352881/1**  
**Matrix: Water**  
**Analysis Batch: 352881**

**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			05/12/22 11:28	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/12/22 11:28	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			05/12/22 11:28	1

Eurofins Cedar Falls

# QC Sample Results

Client: SCS Engineers  
Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

## Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 310-352881/2  
Matrix: Water  
Analysis Batch: 352881

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	980		mg/L		98	90 - 110

- 1
- 2
- 3
- 4
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- 6
- 7
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- 9
- 10
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# QC Association Summary

Client: SCS Engineers  
Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

## Metals

### Prep Batch: 352159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230384-1	MW-301A	Dissolved	Water	3005A	
MB 310-352159/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-352159/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Prep Batch: 352210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230384-1	MW-301A	Total/NA	Water	3005A	
MB 310-352210/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-352210/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 353952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230384-1	MW-301A	Dissolved	Water	6020A	352159
310-230384-1	MW-301A	Total/NA	Water	6020A	352210
MB 310-352159/1-A	Method Blank	Total/NA	Water	6020A	352159
MB 310-352210/1-A	Method Blank	Total/NA	Water	6020A	352210
LCS 310-352159/2-A	Lab Control Sample	Total/NA	Water	6020A	352159
LCS 310-352210/2-A	Lab Control Sample	Total/NA	Water	6020A	352210

## General Chemistry

### Analysis Batch: 352881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230384-1	MW-301A	Total/NA	Water	SM 2320B	
MB 310-352881/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-352881/2	Lab Control Sample	Total/NA	Water	SM 2320B	



# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

**Client Sample ID: MW-301A**

**Lab Sample ID: 310-230384-1**

**Date Collected: 04/29/22 11:45**

**Matrix: Water**

**Date Received: 05/02/22 16:35**

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Dissolved	Prep	3005A			352159	05/06/22 09:00	ACM2	TAL CF
Dissolved	Analysis	6020A		1	353952	05/21/22 19:32	SAP	TAL CF
Total/NA	Prep	3005A			352210	05/06/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	353952	05/21/22 17:09	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	352881	05/12/22 11:28	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  
Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

## Laboratory: Eurofins Cedar Falls

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

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

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

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

# Method Summary

Client: SCS Engineers  
Project/Site: Prarie Creek - 25222074 MNA

Job ID: 310-230384-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	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.

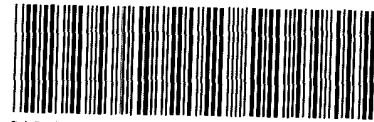
**Laboratory References:**

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





Environment Testing  
America



310-230384 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS</u>			
City/State: <u>CITY</u> <u>Clare</u>	STATE <u>IA</u>	Project:	
<b>Receipt Information</b>			
Date/Time Received:	DATE <u>3-2-22</u>	TIME <u>4:39</u>	Received By: <u>CC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes: Cooler ID: _____			
Multiple Coolers? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Cooler # _____ of _____			
Cooler Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Sample Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Which VOA samples are in cooler? ↓			
<b>Temperature Record</b>			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>N</u>		Correction Factor (°C): <u>0</u>	
* Temp Blank Temperature <input type="checkbox"/> If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.2</u>		Corrected Temp (°C): <u>0.2</u>	
<b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			



# Chain of Custody Record 459417

Environment Testing  
TestAmerica



Sandra.Fredrick@t.testamericainc.com

Address

Regulatory Program:  DW  NPDES  RCRA  Other

TAL-8210

<b>Client Contact</b> Company Name: <u>SCS Engineers</u> Address: <u>8450 Hickman Rd Suite 27</u> City/State/Zip: <u>Clive Iowa 50325</u> Phone: _____ Fax: _____ Project Name: <u>fair creek 25222674</u> Site: _____ PO#: <u>25222674</u>		<b>Project Manager: <u>Fredrick Sandra</u></b> Tel/Email: <u>Sandra.Fredrick@t.testamericainc.com</u> Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		<b>Site Contact:</b> Lab Contact: _____ Perform MS / MSD (Y / N) _____ Filtered Sample (Y / N) _____		Date: _____ Carrier: _____ COC No _____ of _____ COCs Sampler: <u>2526 Cr 2</u> For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No _____	
Sample Identification <u>MW-361A</u> Sample Date: <u>4/27/21</u> Sample Time: <u>11:45</u> Sample Type (C=Comp, G=Grab): <u>G</u> Matrix: _____ # of Cont.: _____		X <u>23206-Alkalinity - carb blank</u> X <u>60204-Total Metals (G)</u> X <u>60204-DISS Metals (2-4)</u>		Sample Specific Notes			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____ Possible Hazard Identification: _____ Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months		Special Instructions/QC Requirements & Comments: _____			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Relinquished by: <u>[Signature]</u> Relinquished by: _____ Relinquished by: _____		Custody Seal No _____ Company: <u>SCS Engineers</u> Date/Time: <u>5-2-22 6:00 AM</u>		Cooler Temp (°C) Obs'd _____ Corrd _____ Therm ID No _____ Received by: _____ Company: _____ Received by: _____ Company: _____ Received in Laboratory by: <u>[Signature]</u> Date/Time: <u>5-2-22 10:35</u>			



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project #25221074

Parameter	MW-301	MW-301A	MW-302	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A	MW-310	MW-310A	Field Blank	TOTAL
	Boron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Chloride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Sulfate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
TDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Antimony	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Barium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Beryllium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Cadmium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Chromium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Cobalt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Lead	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Lithium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Mercury	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Molybdenum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Selenium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Thallium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Radium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Groundwater Elevation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Well Depth	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Specific Conductance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
ORP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Temperature	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Turbidity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Color	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Odor	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Magnesium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Potassium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Sodium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	6
Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Molybdenum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1
Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-230384-1

**Login Number: 230384**

**List Number: 1**

**Creator: Kizer, Preston V**

**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	







# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 1/24/2023 10:02:09 AM Revision 1

## JOB DESCRIPTION

Prairie Creek - 25222074

## JOB NUMBER

310-230386-1

# Eurofins Cedar Falls

## Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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

## Authorization



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Revision 1

Authorized for release by  
Sandie Fredrick, Project Manager II  
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# Case Narrative

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

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**Job ID: 310-230386-1**

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**Laboratory: Eurofins Cedar Falls**

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**Narrative**

**Job Narrative**  
**310-230386-1**

**Comments**

No additional comments.

**Revision**

The report being provided is a revision of the original report sent on 5/23/2022. The report (revision 1) is being revised due to: Revised report due to client requesting removal of dissolved oxygen results.

**Receipt**

The sample was received on 5/2/2022 4:35 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.2° C.

**HPLC/IC**

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

**Metals**

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

**General Chemistry**

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



# Sample Summary

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-230386-1	MW-301A	Water	04/29/22 11:45	05/02/22 16:35

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Detection Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

**Client Sample ID: MW-301A**

**Lab Sample ID: 310-230386-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	4.8	J	5.0	2.0	mg/L	5		9056A	Total/NA
Arsenic	3.3		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	150		2.0	0.88	ug/L	1		6020A	Total/NA
Boron	74	J	100	58	ug/L	1		6020A	Total/NA
Calcium	68		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.91		0.50	0.19	ug/L	1		6020A	Total/NA
Molybdenum	2.5		2.0	1.2	ug/L	1		6020A	Total/NA
Total Dissolved Solids	230		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	707.77				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	116				millivolts	1		Field Sampling	Total/NA
pH, Field	6.94				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	583.3				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.9				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	20.3				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

**Client Sample ID: MW-301A**

**Lab Sample ID: 310-230386-1**

Date Collected: 04/29/22 11:45

Matrix: Water

Date Received: 05/02/22 16:35

**Method: SW846 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.3		5.0	2.3	mg/L			05/17/22 03:32	5
Fluoride	<0.22		0.50	0.22	mg/L			05/17/22 03:32	5
<b>Sulfate</b>	<b>4.8</b>	<b>J</b>	5.0	2.0	mg/L			05/17/22 03:32	5

**Method: SW846 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		05/06/22 09:00	05/21/22 17:13	1
<b>Arsenic</b>	<b>3.3</b>		2.0	0.75	ug/L		05/06/22 09:00	05/21/22 17:13	1
<b>Barium</b>	<b>150</b>		2.0	0.88	ug/L		05/06/22 09:00	05/21/22 17:13	1
Beryllium	<0.27		1.0	0.27	ug/L		05/06/22 09:00	05/21/22 17:13	1
<b>Boron</b>	<b>74</b>	<b>J</b>	100	58	ug/L		05/06/22 09:00	05/21/22 17:13	1
Cadmium	<0.055		0.10	0.055	ug/L		05/06/22 09:00	05/21/22 17:13	1
<b>Calcium</b>	<b>68</b>		0.50	0.19	mg/L		05/06/22 09:00	05/21/22 17:13	1
Chromium	<1.1		5.0	1.1	ug/L		05/06/22 09:00	05/21/22 17:13	1
<b>Cobalt</b>	<b>0.91</b>		0.50	0.19	ug/L		05/06/22 09:00	05/21/22 17:13	1
Lead	<0.24		0.50	0.24	ug/L		05/06/22 09:00	05/21/22 17:13	1
Lithium	<2.5		10	2.5	ug/L		05/06/22 09:00	05/21/22 17:13	1
<b>Molybdenum</b>	<b>2.5</b>		2.0	1.2	ug/L		05/06/22 09:00	05/21/22 17:13	1
Selenium	<0.96		5.0	0.96	ug/L		05/06/22 09:00	05/21/22 17:13	1
Thallium	<0.26		1.0	0.26	ug/L		05/06/22 09:00	05/21/22 17:13	1

**Method: SW846 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		05/12/22 14:01	05/13/22 12:06	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids (SM 2540C)</b>	<b>230</b>		50	26	mg/L			05/05/22 14:26	1
<b>pH (SM 4500 H+ B)</b>	<b>7.0</b>	<b>HF</b>	0.1	0.1	SU			05/02/22 19:57	1

**Method: EPA Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>707.77</b>				ft			04/29/22 11:45	1
<b>Oxidation Reduction Potential</b>	<b>116</b>				millivolts			04/29/22 11:45	1
<b>pH, Field</b>	<b>6.94</b>				SU			04/29/22 11:45	1
<b>Specific Conductance, Field</b>	<b>583.3</b>				umhos/cm			04/29/22 11:45	1
<b>Temperature, Field</b>	<b>12.9</b>				Degrees C			04/29/22 11:45	1
<b>Turbidity, Field</b>	<b>20.3</b>				NTU			04/29/22 11:45	1



# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

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

# QC Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: MB 310-353529/3**  
**Matrix: Water**  
**Analysis Batch: 353529**

**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			05/16/22 22:42	1
Fluoride	<0.044		0.10	0.044	mg/L			05/16/22 22:42	1
Sulfate	<0.40		1.0	0.40	mg/L			05/16/22 22:42	1

**Lab Sample ID: LCS 310-353529/4**  
**Matrix: Water**  
**Analysis Batch: 353529**

**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	9.77		mg/L		98	90 - 110
Fluoride	2.00	2.02		mg/L		101	90 - 110
Sulfate	10.0	10.2		mg/L		102	90 - 110

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

**Lab Sample ID: MB 310-352210/1-A**  
**Matrix: Water**  
**Analysis Batch: 353952**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 352210**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.69		2.0	0.69	ug/L		05/06/22 09:00	05/21/22 15:52	1
Arsenic	<0.75		2.0	0.75	ug/L		05/06/22 09:00	05/21/22 15:52	1
Barium	<0.88		2.0	0.88	ug/L		05/06/22 09:00	05/21/22 15:52	1
Beryllium	<0.27		1.0	0.27	ug/L		05/06/22 09:00	05/21/22 15:52	1
Boron	<58		100	58	ug/L		05/06/22 09:00	05/21/22 15:52	1
Cadmium	<0.055		0.10	0.055	ug/L		05/06/22 09:00	05/21/22 15:52	1
Calcium	<0.19		0.50	0.19	mg/L		05/06/22 09:00	05/21/22 15:52	1
Chromium	<1.1		5.0	1.1	ug/L		05/06/22 09:00	05/21/22 15:52	1
Cobalt	<0.19		0.50	0.19	ug/L		05/06/22 09:00	05/21/22 15:52	1
Lead	<0.24		0.50	0.24	ug/L		05/06/22 09:00	05/21/22 15:52	1
Lithium	<2.5		10	2.5	ug/L		05/06/22 09:00	05/21/22 15:52	1
Molybdenum	<1.2		2.0	1.2	ug/L		05/06/22 09:00	05/21/22 15:52	1
Selenium	<0.96		5.0	0.96	ug/L		05/06/22 09:00	05/21/22 15:52	1
Thallium	<0.26		1.0	0.26	ug/L		05/06/22 09:00	05/21/22 15:52	1

**Lab Sample ID: LCS 310-352210/2-A**  
**Matrix: Water**  
**Analysis Batch: 353952**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 352210**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	200	208		ug/L		104	80 - 120
Arsenic	200	197		ug/L		99	80 - 120
Barium	100	107		ug/L		107	80 - 120
Beryllium	100	102		ug/L		102	80 - 120
Boron	200	205		ug/L		103	80 - 120
Cadmium	100	112		ug/L		112	80 - 120
Calcium	2.00	1.75		mg/L		88	80 - 120
Chromium	100	110		ug/L		110	80 - 120
Cobalt	100	107		ug/L		107	80 - 120

Eurofins Cedar Falls

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

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

Lab Sample ID: LCS 310-352210/2-A  
 Matrix: Water  
 Analysis Batch: 353952

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 352210

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	200	226		ug/L		113	80 - 120
Lithium	200	206		ug/L		103	80 - 120
Molybdenum	200	198		ug/L		99	80 - 120
Selenium	400	389		ug/L		97	80 - 120
Thallium	200	227		ug/L		114	80 - 120

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-352906/1-A  
 Matrix: Water  
 Analysis Batch: 353064

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 352906

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		05/12/22 14:01	05/13/22 11:28	1

Lab Sample ID: LCS 310-352906/2-A  
 Matrix: Water  
 Analysis Batch: 353064

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 352906

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.67	1.65		ug/L		99	80 - 120

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-352140/1  
 Matrix: Water  
 Analysis Batch: 352140

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			05/05/22 14:28	1

Lab Sample ID: LCS 310-352140/2  
 Matrix: Water  
 Analysis Batch: 352140

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	934		mg/L		93	90 - 110

## Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-351745/1  
 Matrix: Water  
 Analysis Batch: 351745

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	7.1		SU		101	98 - 102

# QC Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

## Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: 310-230386-1 DU  
Matrix: Water  
Analysis Batch: 351745

Client Sample ID: MW-301A  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.0	HF	6.9		SU		0.1	20

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

## HPLC/IC

### Analysis Batch: 353529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230386-1	MW-301A	Total/NA	Water	9056A	
MB 310-353529/3	Method Blank	Total/NA	Water	9056A	
LCS 310-353529/4	Lab Control Sample	Total/NA	Water	9056A	

## Metals

### Prep Batch: 352210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230386-1	MW-301A	Total/NA	Water	3005A	
MB 310-352210/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-352210/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Prep Batch: 352906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230386-1	MW-301A	Total/NA	Water	7470A	
MB 310-352906/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-352906/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 353064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230386-1	MW-301A	Total/NA	Water	7470A	352906
MB 310-352906/1-A	Method Blank	Total/NA	Water	7470A	352906
LCS 310-352906/2-A	Lab Control Sample	Total/NA	Water	7470A	352906

### Analysis Batch: 353952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230386-1	MW-301A	Total/NA	Water	6020A	352210
MB 310-352210/1-A	Method Blank	Total/NA	Water	6020A	352210
LCS 310-352210/2-A	Lab Control Sample	Total/NA	Water	6020A	352210

## General Chemistry

### Analysis Batch: 351745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230386-1	MW-301A	Total/NA	Water	SM 4500 H+ B	
LCS 310-351745/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-230386-1 DU	MW-301A	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 352140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230386-1	MW-301A	Total/NA	Water	SM 2540C	
MB 310-352140/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-352140/2	Lab Control Sample	Total/NA	Water	SM 2540C	

## Field Service / Mobile Lab

### Analysis Batch: 352589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230386-1	MW-301A	Total/NA	Water	Field Sampling	

Eurofins Cedar Falls

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

**Client Sample ID: MW-301A**

**Lab Sample ID: 310-230386-1**

**Date Collected: 04/29/22 11:45**

**Matrix: Water**

**Date Received: 05/02/22 16:35**

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Analysis	9056A		5	353529	ZRI4	EET CF	05/17/22 03:32
Total/NA	Prep	3005A			352210	QTZ5	EET CF	05/06/22 09:00
Total/NA	Analysis	6020A		1	353952	DHM5	EET CF	05/21/22 17:13
Total/NA	Prep	7470A			352906	XXW3	EET CF	05/12/22 14:01
Total/NA	Analysis	7470A		1	353064	XXW3	EET CF	05/13/22 12:06
Total/NA	Analysis	SM 2540C		1	352140	ENB7	EET CF	05/05/22 14:26
Total/NA	Analysis	SM 4500 H+ B		1	351745	DN3P	EET CF	05/02/22 19:57
Total/NA	Analysis	Field Sampling		1	352589	BJ0R	EET CF	04/29/22 11:45

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

## Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	06-20-22

- 1
- 2
- 3
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# Method Summary

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230386-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020A	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
Field Sampling	Field Sampling	EPA	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF

#### Protocol References:

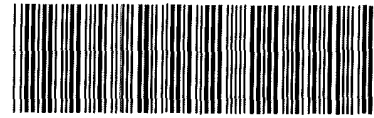
EPA = US Environmental Protection Agency

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

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

#### Laboratory References:

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



### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS</u>			
City/State:	<u>CITY</u> <u>Clare</u>	STATE <u>MI</u>	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE <u>3-7-23</u>	TIME <u>4:35</u>	Received By: <u>CC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <u>1635</u> <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # ____ of ____	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<b>Temperature Record</b>			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>N</u>		Correction Factor (°C): <u>0</u>	
* Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.2</u>		Corrected Temp (°C): <u>0.2</u>	
<b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			



TAL-8210

Regulatory Program:  DW  NPDES  RCRA  Other

Client Contact: \_\_\_\_\_  
 Project Manager: **Fredrick Sandra**  
 Tell/Email: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Carrier: \_\_\_\_\_  
 COC No. \_\_\_\_\_ of \_\_\_\_\_ COCs

Company Name: **SCS Engineers**  
 Address: **8450 Hickman Rd Suite 27**  
 City/State/Zip: **Lincoln NW 50325**  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_  
 Project Name: **private creek 25772674**  
 Site: \_\_\_\_\_  
 P O #: \_\_\_\_\_

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Site Contact		Sample Specific Notes
								Lab Contact	Date	
MW-301A	4-29-22	11:45	6			X	X	6020A-Methys-HG		

Analysis Turnaround Time:  CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below:  2 weeks  1 week  2 days  1 day

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other \_\_\_\_\_

Possible Hazard Identification: \_\_\_\_\_  
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Special Instructions/QC Requirements & Comments:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Custody Seal No. \_\_\_\_\_  
 Relinquished by: *[Signature]* Yes  No   
 Relinquished by: **SCS Engineers** Date/Time: **4-29-22 6:00PM**  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project #25221074

Parameter	MW-301	MW-301A	MW-302	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A	MW-310	MW-310A	Field Blank	TOTAL	
Appendix III Parameters (Detection Monitoring)	Boron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Chloride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Sulfate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	TDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Antimony	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Barium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Beryllium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Cadmium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Chromium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Cobalt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Appendix IV Parameters (Assessment Monitoring)	Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Lead		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Lithium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Mercury		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Molybdenum		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Selenium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Thallium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Radium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Groundwater Elevation		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
pH		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
Well Depth		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
Specific Conductance		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
Dissolved Oxygen		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
ORP		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
Field Parameters		Temperature	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Turbidity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Color	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Odor	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Magnesium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Potassium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Sodium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	6	
	Dissolved (Filtered)	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
		Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Molybdenum		X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	
Field Parameters	Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	

COCs #1 (non-radium) & #2 (radium) - CCR Rule Parameters

COC #3 - MNA Parameters



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-230386-1

**Login Number: 230386**

**List Number: 1**

**Creator: Kizer, Preston V**

**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.	N/A	
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**  
**Prairie Creek Generating Station / SCS Engineers Project #25222074.00**  
**April 2022**

Sample	Sample Date/Time	GW Elevation (ft amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity
MW-301	4/25/2022 1213	714.50	10.4	6.92	4.14	1155	120.0	20.6
MW-301A	4/29/2022 1145	707.77	12.9	6.94	27	583.3	116	20.3
MW-302	4/25/2022 1334	715.27	6.8	5.35	0.25	534.2	160.1	24.2
MW-303	4/26/2022 1526	703.85	8.7	7.07	0.10	756	-70.1	9.97
MW-304	4/26/2022 1407	703.82	8.3	7.0	0.1	954.0	-54.0	21.8
MW-305	4/26/2022 1221	703.76	7.6	7.1	0.9	1004	32.4	21.7
MW-306	4/26/2022 941	704.02	12.3	7.55	0.16	513.8	-119.8	18.9
MW-306A	4/26/2022 1035	704.16	12.1	7.21	0.14	1,036	-77.6	21.5
MW-307	4/25/2022 1506	708.27	10.2	9.47	0.09	235.3	8.0	14.8
MW-308	4/25/2022 1709	705.45	11.1	9.22	0.06	616.7	-113.8	16.6
MW-309	4/27/2022 938	703.56	11.7	7.24	0.10	948	-3.2	11.4
MW-309A	4/26/2022 1501	702.93	14.4	7.18	0.20	770	-135.7	8.18
MW-310	4/27/2022 1118	703.33	11.8	7.30	0.08	972	-125.3	10.2
MW-310A	4/27/2022 1230	703.68	14.6	7.25	0.09	982	-152.1	8.94

Abbreviations:  
mg/L = milligrams per liter  
NA = Not Analyzed

mV = millivolts amsl = above mean sea level  
NM = Not measured

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

Date: 10/25/2021  
Date: 5/4/2022  
Date: 5/6/2022

C:\Users\fredricks\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\D8427408\[2204\_PCS\_CCR\_Field.xlsx]GW Field Paramete

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-230388-1  
Client Project/Site: Prairie Creek - 25222074

For:  
SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
6/2/2022 4:00:46 PM

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

### LINKS

Review your project  
results through



Have a Question?



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.





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# Case Narrative

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

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## Job ID: 310-230388-1

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### Laboratory: Eurofins Cedar Falls

#### Narrative

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#### Job Narrative 310-230388-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 5/2/2022 4:35 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.2° C.

#### RAD

Methods 903.0, 9315: Radium-226 batch 564071

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-301A (310-230388-1), (LCS 160-564071/1-A), (LCSD 160-564071/2-A) and (MB 160-564071/23-A)

Methods 904.0, 9320: Radium-228 batch 564074

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-301A (310-230388-1), (LCS 160-564074/1-A), (LCSD 160-564074/2-A) and (MB 160-564074/23-A)

Method PrecSep\_0: Radium-228 Prep Batch 160-564074

The following sample was prepared at a reduced aliquot due to Matrix: MW-301A (310-230388-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-564074

The following sample was prepared at a reduced aliquot due to Matrix: MW-301A (310-230388-1). 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: Prairie Creek - 25222074

Job ID: 310-230388-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-230388-1	MW-301A	Water	04/29/22 11:45	05/02/22 16:35

1

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# Detection Summary

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

**Client Sample ID: MW-301A**

**Lab Sample ID: 310-230388-1**

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

**Client Sample ID: MW-301A**

**Lab Sample ID: 310-230388-1**

Date Collected: 04/29/22 11:45

Matrix: Water

Date Received: 05/02/22 16:35

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.283	U	0.208	0.210	1.00	0.286	pCi/L	05/06/22 09:17	06/01/22 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.0		40 - 110					05/06/22 09:17	06/01/22 11:01	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	0.414	U	0.359	0.361	1.00	0.559	pCi/L	05/06/22 09:58	05/31/22 12:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	88.0		40 - 110					05/06/22 09:58	05/31/22 12:25	1
Y Carrier	92.7		40 - 110					05/06/22 09:58	05/31/22 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
<b>Radium 226 and 228</b>	<b>0.698</b>		0.415	0.418	5.00	0.559	pCi/L		06/02/22 15:37	1

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# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

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

# QC Sample Results

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-564071/23-A**  
**Matrix: Water**  
**Analysis Batch: 567929**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 564071**

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium 226	0.04129	U	0.134	0.134	1.00	0.254	pCi/L	05/06/22 09:17	06/01/22 11:01	1
Carrier	MB	MB	Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	89.5		40 - 110			05/06/22 09:17	06/01/22 11:01	1		

**Lab Sample ID: LCS 160-564071/1-A**  
**Matrix: Water**  
**Analysis Batch: 567929**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 564071**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium 226	11.3	9.596		1.18	1.00	0.215	pCi/L	85	75 - 125
Carrier	LCS	LCS	Limits			Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier							
Ba Carrier	98.0		40 - 110						

**Lab Sample ID: LCSD 160-564071/2-A**  
**Matrix: Water**  
**Analysis Batch: 567929**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 564071**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
				Uncert. (2σ+/-)							
Radium 226	11.3	10.02		1.24	1.00	0.258	pCi/L	88	75 - 125	0.18	1
Carrier	LCSD	LCSD	Limits			Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier									
Ba Carrier	90.5		40 - 110								

## Method: 904.0 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-564074/23-A**  
**Matrix: Water**  
**Analysis Batch: 567671**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 564074**

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium 228	0.01395	U	0.258	0.258	1.00	0.480	pCi/L	05/06/22 09:58	05/31/22 12:25	1
Carrier	MB	MB	Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba	89.5		40 - 110			05/06/22 09:58	05/31/22 12:25	1		
Y Carrier	89.3		40 - 110			05/06/22 09:58	05/31/22 12:25	1		



# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

## Method: 904.0 - Radium-228 (GFPC) (Continued)

**Lab Sample ID: LCS 160-564074/1-A**  
**Matrix: Water**  
**Analysis Batch: 567672**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 564074**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
Radium 228	8.57	9.599		1.25	1.00	0.445	pCi/L	112	75 - 125	
<b>LCS LCS</b>										
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>							
Ba	98.0		40 - 110							
Y Carrier	85.2		40 - 110							

**Lab Sample ID: LCSD 160-564074/2-A**  
**Matrix: Water**  
**Analysis Batch: 567672**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 564074**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		RER	RER Limit
Radium 228	8.57	9.223		1.23	1.00	0.432	pCi/L	108	75 - 125	0.15	1	
<b>LCSD LCSD</b>												
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>									
Ba	90.5		40 - 110									
Y Carrier	87.9		40 - 110									

# QC Association Summary

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

## Rad

### Prep Batch: 564071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230388-1	MW-301A	Total/NA	Water	PrecSep-21	
MB 160-564071/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-564071/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-564071/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 564074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-230388-1	MW-301A	Total/NA	Water	PrecSep_0	
MB 160-564074/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-564074/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-564074/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

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# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

**Client Sample ID: MW-301A**

**Lab Sample ID: 310-230388-1**

**Date Collected: 04/29/22 11:45**

**Matrix: Water**

**Date Received: 05/02/22 16:35**

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	PrecSep-21			564071	05/06/22 09:17	LPS	TAL SL
Total/NA	Analysis	903.0		1	567929	06/01/22 11:01	FLC	TAL SL
Total/NA	Prep	PrecSep_0			564074	05/06/22 09:58	MS	TAL SL
Total/NA	Analysis	904.0		1	567671	05/31/22 12:25	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	568124	06/02/22 15:37	SCB	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  
 Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

## 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: Prairie Creek - 25222074

Job ID: 310-230388-1

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





Environment Testing  
America



310-230388 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <u>SCS</u>			
City/State:	CITY <u>Clare</u>	STATE <u>MI</u>	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE <u>3-2-22</u>	TIME <u>1439</u>	Received By: <u>CC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <u>1639</u> <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # ____ of ____
Cooler Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
<b>Temperature Record</b>			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>N</u>		Correction Factor (°C): <u>0</u>	
* Temp Blank Temperature If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.2</u>		Corrected Temp (°C): <u>0.2</u>	
<b>Sample Container Temperature</b>			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
a) If yes: Is there evidence that the chilling process began?		<input type="checkbox"/> Yes	<input type="checkbox"/> 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?)		<input type="checkbox"/> Yes	<input type="checkbox"/> No
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			



Sandra.fredrick@t.eurofins.us.com

TAL-8210

Address \_\_\_\_\_

Regulatory Program:  DW  NPDES  RCRA  Other \_\_\_\_\_

Company Name	Client Contact	Project Manager	Site Contact	Carrier	Date	COC No	of	COCs			
ICS (Engineers)	ICS (Engineers)	Fredrick, Sandra	Sandra Fredrick								
Address	840 Hickman Ln Suite 27										
City/State/Zip	Lowell MA 03225										
Phone											
Fax											
Project Name	Frank Creek										
Site											
P O #	2522679										
Sample Identification	MW-301A	Sample Date	4-29-2019	Sample Time	11:45	Sample Type	(C=Comp, G=Grab) 6	Matrix		# of Cont.	
		Filtered Sample (Y/N)	X	Perform MS/MSD (Y/N)	X	Lab Contact:				Sampler	
		Analysis Turnaround Time	CALENDAR DAYS	WORKING DAYS						For Lab Use Only:	
		TAT if different from Below	<input type="checkbox"/> 2 weeks	<input type="checkbox"/> 1 week	<input type="checkbox"/> 2 days	<input type="checkbox"/> 1 day				Walk-in Client:	
										Lab Sampling	
										Job / SDG No	
										Sample Specific Notes	

**Preservation Used:** 1= Ice, 2= HCl; 3= H<sub>2</sub>SO<sub>4</sub>; 4= HNO<sub>3</sub>; 5= NaOH; 6= Other  
**Possible Hazard Identification.**  
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

**Special Instructions/QC Requirements & Comments:**  
 Return to Client  Disposed by Lab  Archive for \_\_\_\_\_ Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Cooler Temp (°C) Obs'd \_\_\_\_\_ Corr'd \_\_\_\_\_  
 Received by: \_\_\_\_\_ Company \_\_\_\_\_  
 Received in Laboratory by: \_\_\_\_\_ Company \_\_\_\_\_

Custody Seal No \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Yes  No   
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_





Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
 Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project #25221074

Parameter	MW-301	MW-301A	MW-302	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A	MW-310	MW-310A	Field Blank	TOTAL	
Appendix III Parameters (Detection Monitoring)	Boron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Chloride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Sulfate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	TDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Antimony	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Barium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Beryllium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Cadmium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Chromium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Cobalt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
	Appendix IV Parameters (Assessment Monitoring)	Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Lead		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Lithium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Mercury		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Molybdenum		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Selenium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Thallium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Radium		X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Groundwater Elevation		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
pH		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
Well Depth		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
Specific Conductance		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
Dissolved Oxygen		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
ORP		X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
Field Parameters		Temperature	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
	Turbidity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Color	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Odor	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Magnesium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Potassium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Sodium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	6	
	Dissolved (Filtered)	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
		Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Molybdenum		X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	
Field Parameters	Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	
	Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	

COCs #1 (non-radium) & #2 (radium) - CCR Rule Parameters

COC #3 - MNA Parameters



# Chain of Custody Record



Environment Testing  
 America



<b>Client Information (Sub Contract Lab)</b>		Lab PM Fredrick, Sandie		Carrier Tracking Not(s)		COC No. 310-49324.1	
Client Contact Shipping/Receiving		E-Mail Sandra.Fredrick@et.eurofins.com		State of Origin Iowa		Page Page 1 of 1	
Company TestAmerica Laboratories, Inc.		Accreditations Required (See note) State Program - Iowa		Job # 310-230388-1		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 - EDTA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Other:	
Address: 13715 Rider Trail North, City Earth City State, Zip MO, 63045 Phone: 314-298-8566(Tel) 314-298-8757(Fax) Email:		Due Date Requested: 6/1/2022 TAT Requested (days):		Analysis Requested		Special Instructions/Note: DO NOT SHIP ON ICE TO ST. LOUIS	
Project Name Prairie Creek - 25222074 Site:		PO # WO # Project # 31011020 SSOW#		Field Filtered Sample (Yes or No)		Total Number of Containers	
Sample Identification - Client ID (Lab ID) MW-301A (310-230388-1)		Sample Date 4/29/22		Sample Time 11:45 Central		Matrix (W=water, S=solid, O=waste/oil, BT=BIOSUB, A=Air)	
Sample Type (C=Comp, G=grab)		Sample Time 11:45 Central		Preservation Code: Water		Perform MS/MSD (Yes or No)	
Sample Date 4/29/22		Sample Time 11:45 Central		Preservation Code: Water		903.0/PreSep_21 Radium-226 (GFC)	
Sample Date 4/29/22		Sample Time 11:45 Central		Preservation Code: Water		904.0/PreSep_0 Radium-228 (GFC)	
Sample Date 4/29/22		Sample Time 11:45 Central		Preservation Code: Water		R226_228GFC_P/ Combined Radium-226 and	
Sample Date 4/29/22		Sample Time 11:45 Central		Preservation Code: Water		Radium-228	
Sample Date 4/29/22		Sample Time 11:45 Central		Preservation Code: Water		Total Number of Containers	
Sample Date 4/29/22		Sample Time 11:45 Central		Preservation Code: Water		2	
Sample Date 4/29/22		Sample Time 11:45 Central		Preservation Code: Water		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/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 compliance to Eurofins Environment Testing North Central, LLC

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

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

Special Instructions/QC Requirements:

Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	5/3/22	16:10	FED EX
Relinquished by:			
Relinquished by:			
Custody Seals Intact:	Custody Seal No.:		
Δ Yes Δ No			

Received by: *Suzanne Worthington* Date/Time: MAY 04 2022 09:00 Company: *EAASR*

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Cooler Temperature(s) °C and Other Remarks:

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-230388-1

**Login Number: 230388**

**List Number: 1**

**Creator: Kizer, Preston V**

**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.	N/A	
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: 310-230388-1

**Login Number: 230388**

**List Source: Eurofins St. Louis**

**List Number: 2**

**List Creation: 05/05/22 12:54 PM**

**Creator: Worthington, Sierra M**

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  
Project/Site: Prairie Creek - 25222074

Job ID: 310-230388-1

## Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)							
310-230388-1	MW-301A	88.0							
LCS 160-564071/1-A	Lab Control Sample	98.0							
LCSD 160-564071/2-A	Lab Control Sample Dup	90.5							
MB 160-564071/23-A	Method Blank	89.5							

#### Tracer/Carrier Legend

Ba = Ba Carrier

## Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)						
310-230388-1	MW-301A	88.0	92.7						
LCS 160-564074/1-A	Lab Control Sample	98.0	85.2						
LCSD 160-564074/2-A	Lab Control Sample Dup	90.5	87.9						
MB 160-564074/23-A	Method Blank	89.5	89.3						

#### Tracer/Carrier Legend

Ba = Ba

Y = Y Carrier

## C3 May 2022 Supplemental Assessment Monitoring

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-232482-1

Client Project/Site: Prairie Creek Generating Station - 25222074

For:

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
6/14/2022 5:33:18 PM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.





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# Case Narrative

Client: SCS Engineers  
Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

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**Job ID: 310-232482-1**

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**Laboratory: Eurofins Cedar Falls**

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**Narrative**

**Job Narrative**  
**310-232482-1**

**Comments**

No additional comments.

**Receipt**

The sample was received on 5/27/2022 9:45 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.4° C.

**Metals**

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

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# Sample Summary

Client: SCS Engineers  
Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-232482-1	MW-312	Water	05/25/22 15:50	05/27/22 09:45

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# Detection Summary

Client: SCS Engineers  
 Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

**Client Sample ID: MW-312**

**Lab Sample ID: 310-232482-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	10		2.0	0.75	ug/L	1		6020A	Total/NA
Molybdenum	7.0		2.0	1.2	ug/L	1		6020A	Total/NA
Oxidation Reduction Potential	201.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.10				mg/L	1		Field Sampling	Total/NA
pH, Field	6.90				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	843				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	17.8				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	3.84				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

**Client Sample ID: MW-312**

**Lab Sample ID: 310-232482-1**

Date Collected: 05/25/22 15:50

Matrix: Water

Date Received: 05/27/22 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10		2.0	0.75	ug/L		06/03/22 09:00	06/08/22 03:44	1
Molybdenum	7.0		2.0	1.2	ug/L		06/03/22 09:00	06/08/22 03:44	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	201.1				millivolts			05/25/22 15:50	1
Oxygen, Dissolved, Client Supplied	0.10				mg/L			05/25/22 15:50	1
pH, Field	6.90				SU			05/25/22 15:50	1
Specific Conductance, Field	843				umhos/cm			05/25/22 15:50	1
Temperature, Field	17.8				Degrees C			05/25/22 15:50	1
Turbidity, Field	3.84				NTU			05/25/22 15:50	1



# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

## Glossary

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

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

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

**Lab Sample ID: MB 310-355085/1-A**  
**Matrix: Water**  
**Analysis Batch: 355631**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 355085**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.75		2.0	0.75	ug/L		06/03/22 09:00	06/08/22 01:20	1
Molybdenum	<1.2		2.0	1.2	ug/L		06/03/22 09:00	06/08/22 01:20	1

**Lab Sample ID: LCS 310-355085/2-A**  
**Matrix: Water**  
**Analysis Batch: 355631**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 355085**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	194		ug/L		97	80 - 120
Molybdenum	200	200		ug/L		100	80 - 120

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

## Metals

### Prep Batch: 355085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-232482-1	MW-312	Total/NA	Water	3005A	
MB 310-355085/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-355085/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 355631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-232482-1	MW-312	Total/NA	Water	6020A	355085
MB 310-355085/1-A	Method Blank	Total/NA	Water	6020A	355085
LCS 310-355085/2-A	Lab Control Sample	Total/NA	Water	6020A	355085

## Field Service / Mobile Lab

### Analysis Batch: 356364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-232482-1	MW-312	Total/NA	Water	Field Sampling	

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

**Client Sample ID: MW-312**

**Lab Sample ID: 310-232482-1**

**Date Collected: 05/25/22 15:50**

**Matrix: Water**

**Date Received: 05/27/22 09:45**

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	3005A			355085	06/03/22 09:00	QTZ5	TAL CF
Total/NA	Analysis	6020A		1	355631	06/08/22 03:44	A6US	TAL CF
Total/NA	Analysis	Field Sampling		1	356364	05/25/22 15:50	SJF	TAL CF

**Laboratory References:**

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

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# Accreditation/Certification Summary

Client: SCS Engineers  
Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

## Laboratory: Eurofins Cedar Falls

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

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

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

# Method Summary

Client: SCS Engineers  
Project/Site: Prairie Creek Generating Station - 25222074

Job ID: 310-232482-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3005A	Preparation, Total Metals	SW846	TAL CF

**Protocol References:**

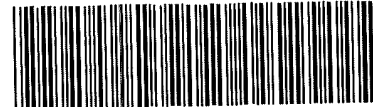
EPA = US Environmental Protection Agency

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





Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: SCS Engineers			
City/State:	CITY Madison	STATE WI	Project:
<b>Receipt Information</b>			
Date/Time Received:	DATE 5-27-22	TIME 0945	Received By: HED/MPH
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes: Cooler ID:</i>			
Multiple Coolers? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes: Cooler # _____ of _____</i>			
Cooler Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes: Cooler custody seals intact?</i> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Sample Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes: Sample custody seals intact?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No			
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes: Which VOA samples are in cooler? ↓</i>			
<b>Temperature Record</b>			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: R		Correction Factor (°C): +0.2	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1 1L Nitric	CONTAINER 2	
Uncorrected Temp (°C):	-0.6		
Corrected Temp (°C):	-0.4		
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) <i>If yes: Is there evidence that the chilling process began?</i> <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
<b>Additional Comments</b>			



# Chain of Custody Record



<b>Client Information</b>		Sampler: Adam Watson		Lab PM: Fredrick, Sandie		Carrier Tracking No(s):		COOC No:	
Client Contact: Mr. Tom Kanowski		Phone: 608-250-9985		E-Mail: sandra.fredrick@eurofinset.com		State of Origin:		Page: Page 1 of 1	
Company: SCS Engineers		PWSID:		Due Date Requested:		Analysis Requested		Job #:	
Address: 2830 Dairy Drive		TAT Requested (days):		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Field Filtered Sample (Yes or No)		Preservation Codes	
City: Madison		PO #: 25221076		WO #: 25221076		Perform MS/MSD (Yes or No)		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 Other	
State, Zip WI, 53718		Project #:		Sample Date		Matrix (W=water, S=solid, O=soil, BT=biological)		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)	
Phone:		SSOW#:		Sample Time		Sample Type (C=Comp, G=grab)		Special Instructions/Note:	
Email: tkanowski@scsengineers.com		Project Name: Sutherland Generating Station 25221076		5/25/22		Preservation Code: Water			
Site:		Sample Date		1550		Mo, As		Total Number of Containers	
Sample Identification		Sample Date		5/25/22		<input checked="" type="checkbox"/> D		<input checked="" type="checkbox"/>	
MW-312		Sample Time		1550		<input checked="" type="checkbox"/> N		<input checked="" type="checkbox"/>	
Possible Hazard Identification		Sample Date							
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Time							
Deliverable Requested I, II, III, IV, Other (specify)		Sample Date							
Empty Kit Relinquished by		Sample Time							
Relinquished by Adam Watson		Date: 5/26/2022 at 1400		Company: SCS Engineers		Received by:		Date/Time:	
Relinquished by		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by		Date/Time:		Company:		Received by:		Date/Time: 5-27-22 0945	
Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Custody Seal No.		Cooler Temperature(s) °C and Other Remarks:					
Special Instructions/QC Requirements:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Method of Shipment:		Time:		Date/Time:		Company:			



## Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-232482-1

SDG Number:

**Login Number: 232482**

**List Number: 1**

**Creator: Homolar, Dana J**

**List Source: Eurofins Cedar Falls**

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





## Fredrick, Sandie

---

**From:** Blodgett, Meghan <mblodgett@scsengineers.com>  
**Sent:** Wednesday, June 8, 2022 9:33 PM  
**To:** Fredrick, Sandie  
**Cc:** Kron, Nicole; Matzuk, Ryan  
**Subject:** RE: Eurofins Environment Testing North Central, LLC Sample Login Confirmation files from 310-232482 Sutherland Generating Station - 25221076

EXTERNAL EMAIL\*

Sandie,

There was a mistake on the COC for this one. The site is Prairie Creek Generating Station, not Sutherland Generating Station.

Field data for the MW-312 sample are:

Temperature (deg C): 17.8  
pH (SU): 6.90  
Dissolved oxygen (mg/L): 0.10  
Specific Conductivity ( $\mu\text{s}/\text{cm}$ ): 843  
ORP (m/v): 201.1  
Turbidity (NTU): 3.84

Meghan Blodgett  
SCS Engineers  
Madison, WI  
608-345-9221 (C)  
[mblodgett@scsengineers.com](mailto:mblodgett@scsengineers.com)  
[www.scsengineers.com](http://www.scsengineers.com)

---

**From:** Sandie Fredrick <Sandra.Fredrick@et.eurofinsus.com>  
**Sent:** Tuesday, May 31, 2022 2:06 PM  
**To:** Blodgett, Meghan <mblodgett@scsengineers.com>; Kron, Nicole <NKron@scsengineers.com>; Matzuk, Ryan <RMatzuk@scsengineers.com>; Clark, Sherren <SClark@scsengineers.com>; Karwoski, Thomas <TKarwoski@scsengineers.com>  
**Subject:** Eurofins Environment Testing North Central, LLC Sample Login Confirmation files from 310-232482 Sutherland Generating Station - 25221076

This email originated from outside of SCS Engineers. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello All,

Attached, please find the Sample Confirmation files for job 310-232482; Sutherland Generating Station - 25221076

Please feel free to contact me if you have any questions.

Thank you.

**Sandie Fredrick**  
Project Manager

Eurofins Environment Testing North Central, LLC  
Phone: 920-261-1660

E-mail: [Sandra.Fredrick@et.eurofinsus.com](mailto:Sandra.Fredrick@et.eurofinsus.com)  
[www.eurofinsus.com/env](http://www.eurofinsus.com/env)



Reference: [310-569963]  
Attachments: 3

\* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

## C4 July 2022 Supplemental Assessment Monitoring

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-236186-1

Client Project/Site: Alliant Prairie Creek - 25222074  
Revision: 1

For:  
SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



---

Authorized for release by:  
10/18/2022 6:07:58 PM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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# Case Narrative

Client: SCS Engineers  
Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

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**Job ID: 310-236186-1**

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**Laboratory: Eurofins Cedar Falls**

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**Narrative**

**Job Narrative**  
**310-236186-1**

**Comments**

No additional comments.

**Revision**

The report being provided is a revision of the original report sent on 8/5/2022. The report (revision 1) is being revised due to: QC missing for metals on report.

**Receipt**

The samples were received on 7/19/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.4° C.

**Metals**

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

**General Chemistry**

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



# Sample Summary

Client: SCS Engineers  
Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-236186-1	Field Blank	Water	07/15/22 13:20	07/19/22 09:50
310-236186-2	MW312	Ground Water	07/15/22 13:30	07/19/22 09:50

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# Detection Summary

Client: SCS Engineers  
 Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

## Client Sample ID: Field Blank

Lab Sample ID: 310-236186-1

No Detections.

## Client Sample ID: MW312

Lab Sample ID: 310-236186-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	13		2.0	0.75	ug/L	1		6020A	Total/NA
Calcium	100		0.50	0.19	mg/L	1		6020A	Total/NA
Iron	5600		100	36	ug/L	1		6020A	Total/NA
Magnesium	22000		500	150	ug/L	1		6020A	Total/NA
Manganese	1600		10	3.6	ug/L	1		6020A	Total/NA
Potassium	2200		500	150	ug/L	1		6020A	Total/NA
Sodium	30000		1000	610	ug/L	1		6020A	Total/NA
Arsenic	11		2.0	0.75	ug/L	1		6020A	Dissolved
Iron	4700		100	36	ug/L	1		6020A	Dissolved
Lithium	3.9	J	10	2.5	ug/L	1		6020A	Dissolved
Manganese	1300		10	3.6	ug/L	1		6020A	Dissolved
Molybdenum	9.8		2.0	1.2	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	280		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	280		10	4.6	mg/L	1		SM 2320B	Total/NA
Ground Water Elevation	703.80				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-46.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.14				mg/L	1		Field Sampling	Total/NA
pH, Field	6.97				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	793				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	21.5				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.00				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-236186-1**

**Date Collected: 07/15/22 13:20**

**Matrix: Water**

**Date Received: 07/19/22 09:50**

**Method: SW846 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.75		2.0	0.75	ug/L		07/25/22 10:15	07/27/22 16:21	1
Calcium	<0.19		0.50	0.19	mg/L		07/25/22 10:15	07/27/22 16:21	1
Cobalt	<0.19		0.50	0.19	ug/L		07/25/22 10:15	07/27/22 16:21	1
Iron	<36		100	36	ug/L		07/25/22 10:15	07/27/22 16:21	1
Lithium	<2.5		10	2.5	ug/L		07/25/22 10:15	07/27/22 16:21	1
Magnesium	<150		500	150	ug/L		07/25/22 10:15	07/27/22 16:21	1
Manganese	<3.6		10	3.6	ug/L		07/25/22 10:15	07/27/22 16:21	1
Molybdenum	<1.2		2.0	1.2	ug/L		07/25/22 10:15	07/27/22 16:21	1
Potassium	<150		500	150	ug/L		07/25/22 10:15	07/27/22 16:21	1
Sodium	<610		1000	610	ug/L		07/25/22 10:15	07/27/22 16:21	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	<2.3		5.0	2.3	mg/L			07/28/22 12:36	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<2.3		5.0	2.3	mg/L			07/28/22 12:36	1
Total Alkalinity as CaCO3 (SM 2320B)	<2.3		5.0	2.3	mg/L			07/28/22 12:36	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

**Client Sample ID: MW312**

**Lab Sample ID: 310-236186-2**

Date Collected: 07/15/22 13:30

Matrix: Ground Water

Date Received: 07/19/22 09:50

**Method: SW846 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13		2.0	0.75	ug/L		07/25/22 10:15	07/27/22 16:24	1
Calcium	100		0.50	0.19	mg/L		07/25/22 10:15	07/27/22 16:24	1
Iron	5600		100	36	ug/L		07/25/22 10:15	07/27/22 16:24	1
Magnesium	22000		500	150	ug/L		07/25/22 10:15	07/27/22 16:24	1
Manganese	1600		10	3.6	ug/L		07/25/22 10:15	07/27/22 16:24	1
Potassium	2200		500	150	ug/L		07/25/22 10:15	07/27/22 16:24	1
Sodium	30000		1000	610	ug/L		07/25/22 10:15	07/27/22 16:24	1

**Method: SW846 6020A - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	11		2.0	0.75	ug/L		07/21/22 09:30	07/21/22 23:20	1
Cobalt	<0.19		0.50	0.19	ug/L		07/21/22 09:30	07/21/22 23:20	1
Iron	4700		100	36	ug/L		07/21/22 09:30	08/03/22 22:49	1
Lithium	3.9	J	10	2.5	ug/L		07/21/22 09:30	08/03/22 22:49	1
Manganese	1300		10	3.6	ug/L		07/21/22 09:30	08/03/22 22:49	1
Molybdenum	9.8		2.0	1.2	ug/L		07/21/22 09:30	07/21/22 23:20	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	280		10	4.6	mg/L			07/28/22 08:28	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<4.6		10	4.6	mg/L			07/28/22 08:28	1
Total Alkalinity as CaCO3 (SM 2320B)	280		10	4.6	mg/L			07/28/22 08:28	1

**Method: EPA Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	703.80				ft			07/15/22 13:30	1
Oxidation Reduction Potential	-46.1				millivolts			07/15/22 13:30	1
Oxygen, Dissolved, Client Supplied	0.14				mg/L			07/15/22 13:30	1
pH, Field	6.97				SU			07/15/22 13:30	1
Specific Conductance, Field	793				umhos/cm			07/15/22 13:30	1
Temperature, Field	21.5				Degrees C			07/15/22 13:30	1
Turbidity, Field	0.00				NTU			07/15/22 13:30	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

## Qualifiers

### Metals

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

## Glossary

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

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

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

**Lab Sample ID: MB 310-360110/1-A**  
**Matrix: Water**  
**Analysis Batch: 360281**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 360110**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.75		2.0	0.75	ug/L		07/21/22 09:30	07/21/22 21:20	1
Cobalt	<0.19		0.50	0.19	ug/L		07/21/22 09:30	07/21/22 21:20	1
Lithium	<2.5		10	2.5	ug/L		07/21/22 09:30	07/21/22 21:20	1
Manganese	<3.6		10	3.6	ug/L		07/21/22 09:30	07/21/22 21:20	1
Molybdenum	<1.2		2.0	1.2	ug/L		07/21/22 09:30	07/21/22 21:20	1

**Lab Sample ID: MB 310-360110/1-A**  
**Matrix: Water**  
**Analysis Batch: 360548**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 360110**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		07/21/22 09:30	07/25/22 21:08	1

**Lab Sample ID: LCS 310-360110/2-A**  
**Matrix: Water**  
**Analysis Batch: 360281**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 360110**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	178		ug/L		89	80 - 120
Cobalt	100	92.0		ug/L		92	80 - 120
Lithium	200	185		ug/L		93	80 - 120
Manganese	100	88.1		ug/L		88	80 - 120
Molybdenum	200	215		ug/L		107	80 - 120

**Lab Sample ID: LCS 310-360110/2-A**  
**Matrix: Water**  
**Analysis Batch: 360548**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 360110**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	200	193		ug/L		96	80 - 120

**Lab Sample ID: MB 310-360425/1-A**  
**Matrix: Water**  
**Analysis Batch: 360790**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 360425**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.75		2.0	0.75	ug/L		07/25/22 10:15	07/27/22 14:54	1
Calcium	<0.19		0.50	0.19	mg/L		07/25/22 10:15	07/27/22 14:54	1
Cobalt	<0.19		0.50	0.19	ug/L		07/25/22 10:15	07/27/22 14:54	1
Iron	<36		100	36	ug/L		07/25/22 10:15	07/27/22 14:54	1
Lithium	<2.5		10	2.5	ug/L		07/25/22 10:15	07/27/22 14:54	1
Magnesium	<150		500	150	ug/L		07/25/22 10:15	07/27/22 14:54	1
Manganese	<3.6		10	3.6	ug/L		07/25/22 10:15	07/27/22 14:54	1
Molybdenum	<1.2		2.0	1.2	ug/L		07/25/22 10:15	07/27/22 14:54	1
Potassium	<150		500	150	ug/L		07/25/22 10:15	07/27/22 14:54	1
Sodium	<610		1000	610	ug/L		07/25/22 10:15	07/27/22 14:54	1

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

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

Lab Sample ID: LCS 310-360425/2-A  
 Matrix: Water  
 Analysis Batch: 360790

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 360425

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	200	198		ug/L		99	80 - 120
Calcium	2.00	1.82		mg/L		91	80 - 120
Cobalt	100	101		ug/L		101	80 - 120
Iron	200	211		ug/L		106	80 - 120
Lithium	200	210		ug/L		105	80 - 120
Magnesium	2000	1840		ug/L		92	80 - 120
Manganese	100	95.9		ug/L		96	80 - 120
Molybdenum	200	206		ug/L		103	80 - 120
Potassium	2000	1960		ug/L		98	80 - 120
Sodium	2000	1940		ug/L		97	80 - 120

## Method: 2320B - Alkalinity (Low Level)

Lab Sample ID: MB 310-360886/1  
 Matrix: Water  
 Analysis Batch: 360886

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			07/28/22 12:36	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			07/28/22 12:36	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			07/28/22 12:36	1

Lab Sample ID: LCS 310-360886/2  
 Matrix: Water  
 Analysis Batch: 360886

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	927		mg/L		93	90 - 110

## Method: SM 2320B - Alkalinity

Lab Sample ID: MB 310-360828/1  
 Matrix: Water  
 Analysis Batch: 360828

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			07/28/22 08:28	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			07/28/22 08:28	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			07/28/22 08:28	1

Lab Sample ID: LCS 310-360828/2  
 Matrix: Water  
 Analysis Batch: 360828

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	940		mg/L		94	90 - 110

Eurofins Cedar Falls

# QC Association Summary

Client: SCS Engineers  
Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

## Metals

### Prep Batch: 360110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-236186-2	MW312	Dissolved	Ground Water	3005A	
MB 310-360110/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-360110/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 360281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-236186-2	MW312	Dissolved	Ground Water	6020A	360110
MB 310-360110/1-A	Method Blank	Total/NA	Water	6020A	360110
LCS 310-360110/2-A	Lab Control Sample	Total/NA	Water	6020A	360110

### Prep Batch: 360425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-236186-1	Field Blank	Total/NA	Water	3005A	
310-236186-2	MW312	Total/NA	Ground Water	3005A	
MB 310-360425/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-360425/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 360548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-360110/1-A	Method Blank	Total/NA	Water	6020A	360110
LCS 310-360110/2-A	Lab Control Sample	Total/NA	Water	6020A	360110

### Analysis Batch: 360790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-360425/1-A	Method Blank	Total/NA	Water	6020A	360425
LCS 310-360425/2-A	Lab Control Sample	Total/NA	Water	6020A	360425

### Analysis Batch: 360797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-236186-1	Field Blank	Total/NA	Water	6020A	360425
310-236186-2	MW312	Total/NA	Ground Water	6020A	360425

### Analysis Batch: 361605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-236186-2	MW312	Dissolved	Ground Water	6020A	360110

## General Chemistry

### Analysis Batch: 360828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-236186-2	MW312	Total/NA	Ground Water	SM 2320B	
MB 310-360828/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-360828/2	Lab Control Sample	Total/NA	Water	SM 2320B	

### Analysis Batch: 360886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-236186-1	Field Blank	Total/NA	Water	2320B	
MB 310-360886/1	Method Blank	Total/NA	Water	2320B	
LCS 310-360886/2	Lab Control Sample	Total/NA	Water	2320B	

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

## Field Service / Mobile Lab

### Analysis Batch: 360169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-236186-2	MW312	Total/NA	Ground Water	Field Sampling	

1

2

3

4

5

6

7

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9

10

11

12

13

14

15

# Lab Chronicle

Client: SCS Engineers  
 Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

## Client Sample ID: Field Blank

## Lab Sample ID: 310-236186-1

Date Collected: 07/15/22 13:20

Matrix: Water

Date Received: 07/19/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			360425	DHM5	EET CF	07/25/22 10:15
Total/NA	Analysis	6020A		1	360797	A6US	EET CF	07/27/22 16:21
Total/NA	Analysis	2320B		1	360886	MAQ3	EET CF	07/28/22 12:36

## Client Sample ID: MW312

## Lab Sample ID: 310-236186-2

Date Collected: 07/15/22 13:30

Matrix: Ground Water

Date Received: 07/19/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			360110	DHM5	EET CF	07/21/22 09:30
Dissolved	Analysis	6020A		1	360281	A6US	EET CF	07/21/22 23:20
Dissolved	Prep	3005A			360110	DHM5	EET CF	07/21/22 09:30
Dissolved	Analysis	6020A		1	361605	A6US	EET CF	08/03/22 22:49
Total/NA	Prep	3005A			360425	DHM5	EET CF	07/25/22 10:15
Total/NA	Analysis	6020A		1	360797	A6US	EET CF	07/27/22 16:24
Total/NA	Analysis	SM 2320B		1	360828	MAQ3	EET CF	07/28/22 08:28
Total/NA	Analysis	Field Sampling		1	360169	SJF	EET CF	07/15/22 13:30

### Laboratory References:

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

# Accreditation/Certification Summary

Client: SCS Engineers  
Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

## Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-02-22

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

# Method Summary

Client: SCS Engineers  
Project/Site: Alliant Prairie Creek - 25222074

Job ID: 310-236186-1

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

#### Protocol References:

EPA = US Environmental Protection Agency

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

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

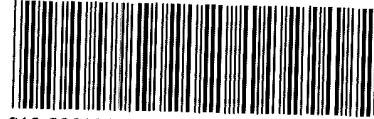
#### Laboratory References:

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





Environment Testing  
America



310-236186 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>			
Client: <i>EUROFINS Chicago</i>			
City/State:	<i>CITY UNIVERSITY PARK</i>	STATE <i>IL</i>	Project:
<b>Receipt Information</b>			
Date/Time Received	DATE <i>7-19-22</i>	TIME <i>450</i>	Received By: <i>EM</i>
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<b>Temperature Record</b>			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <i>N</i>		Correction Factor (°C): <i>0</i>	
• <b>Temp Blank Temperature</b> – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
• <b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u> <i>250mL Plastic</i>	<u>CONTAINER 2</u> <i>→</i>	
Uncorrected Temp (°C):	<i>24</i>	<i>3.1</i>	
Corrected Temp (°C):	<i>24</i>	<i>3.1</i>	
<b>Exceptions Noted</b>			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
<b>Additional Comments</b>			

**Chain of Custody Record**



<b>Client Information</b>		Sampler: <u>Paul Graber</u>		Lab PM: <u>Fredrick, Sandie</u>		Carrier Tracking No(s):		COC No: <u>500-103725-44482.1</u>	
Client Contact: <u>Meg Bloodgett</u>		Phone:		E-Mail: <u>Sandra.Fredrick@eurofins.com</u>		State of Origin:		Page: <u>Page 1 of 1</u>	
Company: <u>SCS Engineers</u>		PWSID:		Analysis Requested: <u>As, Cd, Fe, Li, Mn, Mo, Ni, Pb, Se, V, Zn</u>		Job #:		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 Other	
Address: <u>2830 Dairy Dr</u>		Due Date Requested:		Field Filtered Sample (Yes or No): <u>X</u>		Form MS/MSD (Yes or No): <u>X</u>		Total Number of Containers: <u>X</u>	
City: <u>Madison</u>		TAT Requested (days):		Matrix: <u>Water</u>		Special Instructions/Note:		M Hexane N None O - AsNaO2 P Na2OAS Q Na2SD3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Y Trizma Z - other (specify)	
State Zip: <u>WI 53718</u>		Compliance Project: <u>Yes</u> <input type="checkbox"/> <u>No</u> <input type="checkbox"/>		Sample Type (C=comp, G=grab): <u>G</u>		Sample Date: <u>7/15/22 13:30</u>		Special Instructions/Note:	
Phone:		SO #: <u>ADD Project number here</u>		Sample Time: <u>13:30</u>		Sample Date: <u>7/15/22 13:30</u>		Special Instructions/Note:	
Email: <u>MBloodgett@csengineers.com</u>		WO #:		Preservation Code: <u>Water</u>		Sample Date: <u>7/15/22 13:30</u>		Special Instructions/Note:	
Project Name: <u>Alliant - Prairie Creek</u>		Project #: <u>50006561</u>		Matrix: <u>Water</u>		Sample Date: <u>7/15/22 13:30</u>		Special Instructions/Note:	
Site: <u>Alliant - Prairie Creek</u>		SSOW#:		Matrix: <u>Water</u>		Sample Date: <u>7/15/22 13:30</u>		Special Instructions/Note:	
Sample Identification: <u>Field Blank</u>		Sample Date: <u>7/15/22 13:30</u>		Sample Type: <u>G</u>		Sample Date: <u>7/15/22 13:30</u>		Special Instructions/Note:	
Sample Identification: <u>MW 312</u>		Sample Date: <u>7/15/22 13:30</u>		Sample Type: <u>G</u>		Sample Date: <u>7/15/22 13:30</u>		Special Instructions/Note:	
Sample Identification: <u>MW 312</u>		Sample Date: <u>7/15/22 13:30</u>		Sample Type: <u>G</u>		Sample Date: <u>7/15/22 13:30</u>		Special Instructions/Note:	

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-236186-1

**Login Number: 236186**

**List Number: 1**

**Creator: Costello, Mackenzie K**

**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**  
**Prairie Creek Generating Station / SCS Engineers Project #25222074.00**  
**July 2022**

Sample	Sample Date/Time	GW Elevation (ft amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity
MW-312	7/15/2022, 1330	703.80	21.5	6.97	0.14	793	-46.1	0.00

Abbreviations:

mg/L = milligrams per liter

NA = Not Analyzed

mV = millivolts amsl = above mean sea level

NM = Not measured

Created by:           MDB          

Date:           10/25/2021          


Last revision by:           MDB          

Date:           7/15/2022          

Checked by:           AJR          

Date:           7/20/2022          

C:\Users\hld0\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\USG3GGGC\[2207\_PCS\_CCR\_Field.xlsx]GW Field Parameters



Appendix D  
Historical Results

**Single Location**

**Name: IPL - Prairie Creek Generating Station**

Location ID: MW-301		Number of Sampling Dates: 19																		
Parameter Name	Units	12/20/2016	1/23/2017	2/23/2017	3/28/2017	4/26/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	4/22/2019	10/28/2019	4/27/2020	10/19/2020	4/27/2021	10/21/2021	4/25/2022
Boron	ug/L	<50	<50	25.2	23.8	37.3	40.8	24.6	28.9	26.8	22.8	30.9	30.6	<110	<110	<73	<80	<58	<58	<58
Calcium	mg/L	137	140	148	144	112	106	136	142	139	155	154	163	130	160	140	150	130	160	180
Chloride	mg/L	19.5	24.1	24.4	23.3	19.2	19.1	26.2	30.4	33.6	51.4	57.4	62	43	46	40	67	58	98	85
Fluoride	mg/L	0.13	0.079	0.13	0.1	0.1	<0.1	0.15	0.21	0.17	0.2	0.16	0.22	<0.23	<0.23	<0.23	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	6.78	6.8	6.57	6.9	6.41	6.41	7	6.97	7.46	7.51	6.81	7.63	6.99	6.69	7.09	6.89	6.81	6.9	6.92
Sulfate	mg/L	108	101	99.2	107	82.5	74.7	108	101	95.5	117	113	131	100	110	110	98	93	100	89
Total Dissolved Solids	mg/L	556	587	611	615	495	479	642	640	621	784	747	743	610	680	640	660	550	690	680
Antimony	ug/L	0.28	0.2	0.057	0.06	0.034	0.065	0.088	0.18	--	0.041	<0.15	<0.078	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69
Arsenic	ug/L	0.7	0.69	0.55	0.54	0.55	0.5	0.62	1.8	--	0.54	1.1	0.67	<0.75	<0.75	<0.88	<0.88	<0.75	0.88	0.8
Barium	ug/L	250	257	264	264	211	205	265	291	--	282	281	261	230	270	260	270	250	270	280
Beryllium	ug/L	<0.08	<0.08	0.075	0.012	0.023	0.016	<0.012	0.14	--	<0.012	--	<0.089	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.029	0.059	0.066	0.072	0.063	0.061	0.073	0.12	--	0.069	0.096	0.075	<0.077	0.064	0.066	0.073	0.062	0.11	0.072
Chromium	ug/L	3.9	4.3	4.5	4.4	4.7	3.4	3.9	9.9	--	4.1	5.8	5.2	3.6	5.4	4.7	4.9	4.2	5.2	5.3
Cobalt	ug/L	<0.5	<0.5	0.25	0.11	0.28	0.18	0.057	2.1	--	0.028	0.52	0.084	0.12	0.12	0.23	<0.091	0.15	<0.19	<0.19
Lead	ug/L	<0.19	0.23	0.16	0.086	0.4	0.25	0.058	1.9	--	<0.033	0.66	0.17	<0.27	<0.27	0.27	<0.11	<0.21	0.37	<0.24
Lithium	ug/L	14.9	13.4	11.1	12.6	8.6	6.1	8.9	16.8	--	13.6	5.4	13.3	8.5	12	11	15	13	13	17
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.1	<0.1	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	0.61	0.34	0.38	0.45	0.23	0.26	0.33	0.44	--	0.35	0.44	<0.57	<1.1	<1.1	<1.1	<1.1	<1.3	<1.3	<1.2
Selenium	ug/L	0.97	1.2	0.98	1	0.72	0.69	1.1	1.2	--	1.3	1.3	0.95	1.1	1.7	<1	--	<0.96	1.1	2.9
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	0.12	0.043	0.081	0.3	--	<0.036	--	<0.099	<0.27	<0.27	<0.26	--	<0.26	<0.26	0.27
Total Radium	pCi/L	1.06	0.957	1.42	1.42	1.14	0.877	2.53	1.52	--	1	1.07	1.09	--	0.708	0.477	0.975	0.844	0.606	0.845
Radium-226	pCi/L	0	0.404	0.438	0.665	0.479	0.379	0.793	0.576	--	0.484	0.429	0.478	--	0.259	0.283	0.656	0.287	0.256	0.379
Radium-228	pCi/L	1.06	0.553	0.981	0.75	0.662	0.498	1.74	0.946	--	0.516	0.643	0.612	--	<0.512	<0.311	0.319	0.557	0.35	0.466
pH at 25 Degrees C	Std. Units	7	8	7.2	6.8	6.8	7.1	7.3	7.2	7.4	7	7.1	7.1	6.9	6.9	6.9	7	6.9	7	7.1
Field Oxidation Potential	mV	91.3	54.7	175.5	120.8	141.5	155	143.1	90.3	191	32.7	237	60	38.2	-7.3	208.3	67.9	168.4	180.3	120
Field Specific Conductance	umhos/cm	1370	895	918	1350	1400	694	901	1326	949	1060	1105	1052	987	1036	954	983	931	1205	1155
Field Temperature	deg C	11.7	11.2	10.7	10.2	9.9	10.45	11.1	12.2	12.6	10.5	12.3	14.9	10.53	11.34	11.1	11.8	10.4	12.3	10.4
Groundwater Elevation	feet	716.05	716.05	715.87	715.8	716.7	717.08	716.1	715.35	714.36	713.95	714.3	715.74	716.44	715.86	715.8	714.77	715.84	713.44	714.5
Oxygen, Dissolved	mg/L	2.54	2.75	2.42	3.22	3.88	4.19	2.46	3.21	2.4	38.3	3.6	4.03	6.68	4.63	3.5	3.69	3.76	4.67	4.14
Turbidity	NTU	3.57	6.66	4.57	11.36	1.61	0.78	0.61	95.83	124.2	0.72	17.05	9.97	6.92	2.8	6.52	6.01	2.04	9.7	20.6
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	470	340	420	430
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<2.3	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	470	340	420	430
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	150000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	73	82	52	<36
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	44000	41000	48000	52000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<4	<4.4	<4.4	<3.6
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<50	<36	<36	<36
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<4	<4.4	<4.4	<3.6
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	930	1300	930	930
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14000	14000	15000	17000

## Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-301A						
Number of Sampling Dates: 5						
Parameter Name	Units	9/15/2020	10/21/2020	4/28/2021	10/22/2021	4/29/2022
Boron	ug/L	<80	<80	71	61	74
Calcium	mg/L	72	76	68	59	68
Chloride	mg/L	4.1	2.6	<2.2	<2.2	<2.3
Fluoride	mg/L	<0.23	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	7.5	6.85	7.17	7.15	6.94
Sulfate	mg/L	6.4	7.8	5.3	7	4.8
Total Dissolved Solids	mg/L	440	310	250	200	230
Antimony	ug/L	<0.51	<0.51	<1.1	<1.1	<0.69
Arsenic	ug/L	3.7	1.9	0.87	1.4	3.3
Barium	ug/L	290	190	160	130	150
Beryllium	ug/L	0.98	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	0.49	0.054	<0.051	0.075	<0.055
Chromium	ug/L	5.1	1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	9.4	2	1.2	0.96	0.91
Lead	ug/L	5.6	1	0.21	0.49	<0.24
Lithium	ug/L	4.2	4.1	<2.5	<2.5	<2.5
Mercury	ug/L	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	2.1	3.1	3.1	3.1	2.5
Selenium	ug/L	<1	--	<0.96	<0.96	<0.96
Thallium	ug/L	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	8.3	1.47	0.823	1.27	0.698
Radium-226	pCi/L	3.93	0.441	0.35	0.323	0.283
Radium-228	pCi/L	4.37	1.03	0.473	0.948	0.414
pH at 25 Degrees C	Std. Units	6.9	7	7.1	7.2	7
Field Oxidation Potential	mV	131.6	-92.6	11.7	37.5	116
Field Specific Conductance	umhos/cm	470.5	551.4	930	537.9	583.3
Field Temperature	deg C	16	11.6	9.7	13.3	12.9
Groundwater Elevation	feet	--	--	716.76	707.07	707.77
Oxygen, Dissolved	mg/L	7.77	1.77	1.68	2.39	--
Turbidity	NTU	284.7	--	2.04	32.2	20.3
Bicarbonate Alkalinity as CaCO3	mg/L	--	330	310	320	290
Carbonate Alkalinity as CaCO3	mg/L	--	<3.8	<4.6	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	330	310	320	290
Calcium, total	ug/L	--	75000	--	--	--
Iron, total	ug/L	--	1000	200	790	2500
Magnesium, total	ug/L	--	23000	21000	16000	19000
Manganese, total	ug/L	--	700	300	420	380
Iron, dissolved	ug/L	--	97	130	<36	2300
Manganese, dissolved	ug/L	--	690	290	320	380
Potassium, total	ug/L	--	2100	1700	1300	1300
Sodium, total	ug/L	--	14000	12000	9400	11000

# Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-302		Number of Sampling Dates: 19																		
Parameter Name	Units	12/20/2016	1/23/2017	2/23/2017	3/28/2017	4/26/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	4/22/2019	10/28/2019	4/27/2020	10/19/2020	4/27/2021	10/21/2021	4/25/2022
Boron	ug/L	<50	<50	30.1	33.7	36.5	51.6	51.8	45.1	36.5	22.4	38.1	65	<110	<110	<73	<80	<58	<58	100
Calcium	mg/L	107	106	95	95	102	41.4	66.7	93.1	109	125	106	63.3	67	81	86	110	76	130	65
Chloride	mg/L	22.6	21.4	19.2	21.6	19.9	8.1	9.6	20.7	36.4	69.4	33.6	20.2	19	23	28	49	23	82	7.2
Fluoride	mg/L	0.16	0.079	0.1	<0.1	0.12	<0.1	0.15	0.2	0.19	0.23	0.17	0.21	<0.23	<0.23	<0.23	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	6.36	6.72	6.38	6.66	6.44	6.27	6.6	6.23	7.71	6.98	6.55	6.5	6.64	6.37	6.27	6.67	6.96	7.15	5.35
Sulfate	mg/L	77.7	75.6	69.7	72.9	66.4	28.9	49.5	70	82.9	69.6	72.2	55.1	56	72	66	78	57	89	140
Total Dissolved Solids	mg/L	465	463	416	432	445	203	341	432	505	718	503	314	320	420	400	480	330	500	340
Antimony	ug/L	0.32	0.14	0.049	0.067	0.028	0.077	0.067	0.11	--	0.048	0.17	0.092	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69
Arsenic	ug/L	2.3	1.7	1.6	2.7	2.4	3.2	1.6	1.9	--	0.79	9	4.5	2.1	7	4.4	2	3.4	0.9	1.2
Barium	ug/L	200	194	166	187	176	109	133	175	--	213	254	141	130	220	210	200	160	220	110
Beryllium	ug/L	<0.08	<0.08	0.078	0.023	<0.012	0.019	<0.012	<0.012	--	<0.012	--	<0.089	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.029	<0.029	0.04	0.036	0.042	0.021	0.035	0.03	--	0.041	0.084	<0.033	<0.077	0.053	0.098	0.062	0.065	0.08	0.38
Chromium	ug/L	3.3	2.1	1.7	1.4	1.5	0.8	0.91	1.5	--	1.2	4.4	0.78	<0.98	2.1	2.8	2.2	1.4	2	<1.1
Cobalt	ug/L	2.7	2.2	3	4.7	2.1	2.1	1.2	1.4	--	3.2	1.6	3.2	2.1	1.2	0.56	0.33	0.37	<0.19	31
Lead	ug/L	0.55	<0.19	0.14	0.2	0.083	0.16	0.034	<0.033	--	0.035	1.2	0.13	<0.27	<0.27	<0.27	<0.11	<0.21	<0.21	0.26
Lithium	ug/L	8.7	7.7	3.4	5.3	4.9	<2.9	<2.9	11.9	--	5.4	<4.6	4.6	4.7	5.3	3.8	8.2	6.3	6.9	5
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.1	<0.1	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	0.76	0.43	0.45	0.38	0.52	0.28	0.38	0.38	--	0.99	0.78	0.67	<1.1	<1.1	<1.1	<1.1	<1.3	<1.3	<1.2
Selenium	ug/L	0.55	0.36	0.37	0.43	0.44	0.28	0.44	0.46	--	0.54	1.4	0.37	<1	1.1	<1	--	0.96	<0.96	3.7
Thallium	ug/L	<0.5	<0.5	0.05	0.044	0.058	<0.036	<0.036	0.18	--	0.039	--	<0.099	<0.27	<0.27	<0.26	--	<0.26	<0.26	0.37
Total Radium	pCi/L	0.597	0.138	0.655	0.447	0.713	1.3	1.12	1.21	--	0.699	3.61	1.09	--	0.562	0.392	1.22	1.31	0.77	0.489
Radium-226	pCi/L	0	0.138	0.267	0.239	0.311	0.49	0.265	0.211	--	0.507	2.15	0.54	--	0.228	0.113	0.54	0.778	0.195	0.145
Radium-228	pCi/L	0.597	-0.321	0.388	0.208	0.402	0.809	0.852	0.997	--	0.192	1.46	0.554	--	<0.385	<0.307	0.684	0.533	0.575	0.344
pH at 25 Degrees C	Std. Units	6.8	7.2	6.6	6.4	6.8	6.9	7.3	6.6	6.8	6.9	6.9	7	6.8	6.6	6.7	6.8	6.8	6.7	5.5
Field Oxidation Potential	mV	-9.4	-12.1	40.7	-44.7	54.5	29.2	53.3	90.2	181	-10.9	61	-32	-0.2	-5.8	30	21.5	24.1	122.3	160.1
Field Specific Conductance	umhos/cm	1182	712.2	624.9	1053	1283	317	481.6	876	824	708.6	786	515	533	587	587.9	761	889	969	534.2
Field Temperature	deg C	10.6	7.8	6.5	6.4	8.1	10.59	12.8	15.3	15	7.5	16	16.7	7.86	13.74	8.1	13.6	9	14.1	6.8
Groundwater Elevation	feet	715.39	715.77	715.55	715.45	716.07	716.27	715.22	714.47	713.92	713.53	713.83	716.72	715.69	715.27	715.17	713.75	715.36	713.09	715.27
Oxygen, Dissolved	mg/L	2.57	2.78	1.73	2.22	2.43	0.9	1.23	1.69	1.4	3.1	1.7	0.5	3.34	1.8	1.39	2.22	0.12	3.47	0.25
Turbidity	NTU	19.02	0.95	0.8	4.89	0.82	1.52	0.5	0.61	4.75	1.75	8.95	10.52	90.3	6.92	27.5	8.15	2.7	15.3	24.2
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	310	210	340	88
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<2.3	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	310	210	340	88
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2200	3400	400	810
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33000	24000	39000	13000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	89	82	5	4400
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	430	500	<36	140
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	77	81	<4.4	3800
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	640	480	690	3900
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16000	12000	16000	18000

**Single Location**

**Name: IPL - Prairie Creek Generating Station**

Location ID: MW-303		Number of Sampling Dates: 19																		
Parameter Name	Units	12/20/2016	1/23/2017	2/23/2017	3/28/2017	4/26/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	4/22/2019	10/29/2019	4/27/2020	10/20/2020	4/27/2021	10/21/2021	4/26/2022
Boron	ug/L	767	773	851	852	705	644	603	650	598	772	753	932	800	940	790	1300	920	1100	850
Calcium	mg/L	68.7	71.4	85.4	82.7	71.5	67.8	63.5	66.2	59.9	102	85.4	99.9	130	120	110	110	89	110	110
Chloride	mg/L	17.6	18.7	19.6	18.9	20.2	21	19.7	19.4	19.9	26.1	20.2	23.9	33	20	18	13	12	13	11
Fluoride	mg/L	0.55	0.55	0.44	0.48	0.54	0.45	0.53	0.7	0.8	0.5	0.6	0.71	0.35	0.51	0.69	0.67	0.42	0.4	<0.22
Field pH	Std. Units	7.37	7.55	7.09	7.57	7.18	7.11	7.2	7.22	7.94	7.23	7.2	7.13	7.31	7.12	6.78	7.08	6.96	7.16	7.07
Sulfate	mg/L	72.6	72.7	82.4	80.4	65.1	56	76.2	83.5	60	146	83.3	74.7	88	95	120	130	110	130	100
Total Dissolved Solids	mg/L	346	375	413	414	372	367	365	397	329	580	475	515	650	580	630	580	440	480	490
Antimony	ug/L	2	1.7	1.2	1	1	0.86	0.84	1.6	--	0.61	1.1	0.72	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69
Arsenic	ug/L	20.8	23.1	23.4	25	22.9	23.6	24.2	30	--	26.9	35.1	44.5	26	52	48	56	39	46	36
Barium	ug/L	68.8	66	75.4	74.6	67.6	66.6	65.8	62.5	--	87.5	82.7	94.3	150	120	130	120	90	110	96
Beryllium	ug/L	<0.08	<0.08	0.072	0.013	<0.012	<0.012	<0.012	<0.012	--	<0.012	--	<0.089	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.029	<0.029	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	--	<0.018	0.24	<0.033	<0.077	<0.039	0.066	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	1.1	0.6	0.28	<0.054	0.14	0.21	0.18	0.29	--	0.19	0.62	0.55	<0.98	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	<0.5	<0.5	0.4	0.3	0.3	0.3	0.35	0.3	--	0.31	0.66	0.43	1.3	0.87	1.1	0.43	0.48	0.43	0.42
Lead	ug/L	0.36	<0.19	0.037	<0.033	0.095	0.12	0.12	0.057	--	0.078	0.48	0.31	0.3	0.43	1.7	0.18	<0.21	<0.21	<0.24
Lithium	ug/L	19	20.5	17.7	19.8	14.6	15.4	13.1	18.8	--	19	15.4	19.9	17	17	14	21	16	17	18
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.1	<0.1	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	37.8	30.5	26.7	26.7	23.2	20.6	25.6	35.2	--	23.1	20.7	21.7	12	20	8.4	17	12	14	11
Selenium	ug/L	<0.18	<0.18	<0.086	0.14	0.15	0.11	0.11	0.33	--	0.24	0.46	0.21	<1	<1	<1	--	<0.96	<0.96	1.3
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	<0.036	0.089	<0.036	0.18	--	<0.036	--	<0.099	<0.27	<0.27	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.925	0.647	0.375	0.53	0.71	0.977	1.55	0.995	--	1.26	0.847	1.08	--	<0.522	1.41	0.56	0.519	0.963	0.276
Radium-226	pCi/L	0.545	0.535	0	0.192	0.0625	0.112	0.383	0.537	--	0.242	-0.126	0.62	--	0.164	<0.324	0.508	0.0943	0.231	0.16
Radium-228	pCi/L	0.38	0.112	0.375	0.338	0.647	0.865	1.17	0.458	--	1.02	0.847	0.457	--	<0.522	1.11	0.0517	0.425	0.732	0.115
pH at 25 Degrees C	Std. Units	7	8	7.4	7.2	7.3	7.4	7.8	7.5	7.5	7.4	7.4	7.5	7.4	7.2	7.2	7.2	7.3	7.2	7.3
Field Oxidation Potential	mV	-58.2	-58.1	4.1	-118.3	-6.4	-12.2	192.3	79.8	-85	-92.8	-126	-87	-110.3	-139.1	-143.2	-147.8	11.7	-89.8	-70.1
Field Specific Conductance	umhos/cm	916	602.3	663.2	1024	1107	549	941	834	564	836	764	881	1084	981	922	853	734	911	756
Field Temperature	deg C	13	11.7	10.9	11.3	11.7	13.26	13.9	15.1	16.4	9.5	16	17.4	9.59	14.47	9.3	15.1	9	16.2	8.7
Groundwater Elevation	feet	703.36	704.64	704.46	703.81	705.07	705.37	703.96	702.83	702.95	705.36	702.62	707.86	703.83	704.1	703.1	702.16	702.75	701.84	703.85
Oxygen, Dissolved	mg/L	0.18	0.17	0.13	0.12	0.13	0.26	0.27	0.05	0	1.7	0.1	0.2	1.14	0.35	0.14	0.08	0.19	0.24	0.1
Turbidity	NTU	9.52	0.5	0.3	0.01	0.19	0.34	2.72	0.11	3.58	1.08	4.99	17.2	18.4	3.02	25.9	0.8	2.1	10.4	9.97
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	370	290	430	360
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<2.3	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	370	290	430	360
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3400	3100	3600	3500
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35000	31000	35000	35000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	1400	1500	1600
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	53	39	44	32
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3100	3100	2900	3000
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	1400	1400	1400
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4800	3900	4700	4100
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34000	30000	34000	34000

**Single Location**

**Name: IPL - Prairie Creek Generating Station**

Location ID: MW-304		Number of Sampling Dates: 20																			
Parameter Name	Units	12/21/2016	1/24/2017	2/23/2017	3/28/2017	4/26/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	3/11/2019	4/22/2019	10/29/2019	4/27/2020	10/20/2020	4/27/2021	10/21/2021	4/26/2022
Boron	ug/L	372	323	277	224	218	212	310	412	386	384	841	661	--	770	610	770	860	790	810	740
Calcium	mg/L	71	68.2	73.6	63.6	66.6	63.5	62.9	55.4	49.3	73.5	93	89	--	130	96	110	98	120	130	140
Chloride	mg/L	20.2	20.6	21.4	23.7	21.7	22.1	20.1	22.9	23.4	24.6	36.6	33.6	--	27	20	15	12	12	15	10
Fluoride	mg/L	0.84	0.8	0.72	0.78	0.87	0.79	0.86	0.84	0.78	0.58	0.55	0.61	--	0.41	0.51	0.67	0.56	0.41	0.53	<0.22
Field pH	Std. Units	7.09	7.25	7.01	7.58	7.23	7.23	7.4	7.34	8.16	7.31	6.92	7.5	5.82	7.08	6.9	6.84	6.84	6.9	7.07	7
Sulfate	mg/L	93.8	96.1	107	109	111	115	132	85.9	55.1	77.3	193	167	--	140	110	110	110	140	220	160
Total Dissolved Solids	mg/L	396	399	402	411	406	418	468	359	298	423	630	541	--	680	490	590	500	610	620	660
Antimony	ug/L	2.4	2.1	1.9	1.9	1.9	2.1	2.2	2.6	--	1.3	1.3	1.4	--	1.2	1.5	1	1	<1.1	1.1	1.4
Arsenic	ug/L	11.4	11.7	12	10.1	9.4	16.6	10.2	8.6	--	15	12.3	14.4	12.9	11	14	11	14	13	16	14
Barium	ug/L	65.3	59.8	56.4	51.6	46.6	95	51.1	48.7	--	95	121	110	--	140	110	120	110	120	120	120
Beryllium	ug/L	<0.08	<0.08	0.064	<0.012	<0.012	<0.012	<0.012	<0.012	--	<0.012	--	<0.089	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.029	<0.029	<0.018	<0.018	<0.018	0.018	0.023	<0.018	--	<0.018	<0.07	<0.033	--	<0.077	0.074	<0.039	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	0.58	0.5	0.41	<0.054	0.99	0.2	0.16	0.32	--	0.15	0.34	0.31	--	<0.98	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.75	0.72	0.79	0.83	0.63	0.74	0.83	0.55	--	0.57	1.1	0.75	--	1.4	1.2	1.1	1.1	0.91	0.9	0.73
Lead	ug/L	<0.19	<0.19	0.11	0.043	0.061	0.1	0.042	0.034	--	0.045	0.24	<0.13	--	<0.27	0.27	<0.27	<0.11	<0.21	0.24	<0.24
Lithium	ug/L	12.1	12	10.6	8.2	9.6	8.6	9.9	14.4	--	10.8	6.9	13.4	--	17	13	11	17	14	14	16
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	--	<0.1	<0.1	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	33.5	29.3	27.5	28.4	28.3	28.5	32.6	33.8	--	19.8	25.4	27.6	--	23	31	26	28	25	31	24
Selenium	ug/L	1.1	1	1.4	1.2	1.5	1.8	1.7	0.85	--	0.12	0.23	0.16	--	<1	<1	<1	--	<0.96	<0.96	1
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	0.12	0.037	0.068	<0.036	--	<0.036	--	<0.099	--	<0.27	<0.27	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	1.74	0.439	0.162	0.311	0.632	0.964	1.15	0.384	--	1.26	0.768	1.31	--	--	<0.513	0.707	0.958	0.726	0.407	0.439
Radium-226	pCi/L	0.522	0.131	0.162	0.261	0.497	0.412	0.0708	0.355	--	0.589	0.271	0.175	--	--	<0.141	0.232	0.152	0.219	0.523	0.239
Radium-228	pCi/L	1.22	0.308	-0.0742	0.0497	0.135	0.552	1.08	0.0285	--	0.666	0.497	1.13	--	--	<0.513	0.475	0.807	0.507	-0.116	0.2
pH at 25 Degrees C	Std. Units	6.9	7.9	7.4	7.2	7.3	7.6	8	7.3	7.6	7.2	7.2	7.2	--	7.2	7	7	7	7.2	7.1	7.2
Field Oxidation Potential	mV	-72.9	-66.6	-80	-111.7	-15.1	-17.7	79.1	-40.9	-123	-151	-89	-18.1	-84.2	-62	-74.3	-85	-99.3	-15.8	-60.7	-54
Field Specific Conductance	umhos/cm	993	622.8	621.3	1028	1144	602	1124	856	532	514	934	812	537	1125	816	841	771	968	1053	954
Field Temperature	deg C	16.1	12.6	10.8	9.9	10.3	11.9	14.4	18.7	20.6	11.8	18.1	18.8	8.8	9.64	15.67	10.1	15.7	9.1	16.1	8.3
Groundwater Elevation	feet	703.42	704.56	704.65	703.99	705.08	705.37	704.16	702.96	703.17	705.54	702.62	707.81	704.24	703.93	704.15	702.84	702.13	702.8	701.8	703.82
Oxygen, Dissolved	mg/L	0.07	0.12	0.14	0.15	0.13	0.2	0.23	0.18	0	0.1	0.2	0.21	0.86	0.93	0.28	0.14	0.08	0.21	0.25	0.1
Turbidity	NTU	3.65	0.91	0.43	1.13	2.23	1.4	1.76	3.9	12.65	3.98	10.26	9.07	8.73	4.99	2.96	1.63	0.02	1.2	8.5	21.8
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	350	380	380	430
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	<4.6	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	350	380	380	430
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	92000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2000	3100	1600	3600
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	29000	40000	39000	47000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1200	1400	1300	1800
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	13	15	13
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2000	3100	1500	2900
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1200	1400	1200	1500
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5200	5000	5600	5300
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	40000	50000	39000	49000



# Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-305																					
Number of Sampling Dates: 20																					
Parameter Name	Units	12/21/2016	1/24/2017	2/23/2017	3/28/2017	4/27/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	3/11/2019	4/22/2019	10/29/2019	4/27/2020	10/20/2020	4/27/2021	10/20/2021	4/26/2022
Boron	ug/L	363	353	316	274	229	243	342	537	462	437	589	634	--	790	890	1000	1300	1100	1100	890
Calcium	mg/L	65.1	67.8	71.3	58.4	65	68.5	61.4	58.7	51.4	61	71.1	82.7	--	94	130	120	130	120	140	140
Chloride	mg/L	18	18.6	19.2	21	19.5	19.8	19.3	18	18.6	18.9	18.9	18.3	--	17	18	16	15	13	21	13
Fluoride	mg/L	0.63	0.56	0.53	0.55	0.66	0.57	0.68	0.65	0.63	0.61	0.62	0.61	--	0.45	0.31	0.51	0.37	<0.28	<0.28	<0.22
Field pH	Std. Units	7.32	7.51	7.13	7.65	7.42	7.42	7.49	7.58	8.08	7.65	7.12	7.05	6.92	7.12	6.89	6.82	7.07	7.07	7.21	7.1
Sulfate	mg/L	72.1	79.8	79	88.7	104	104	112	59.4	44	61.9	98.2	98.9	--	150	210	240	230	260	330	280
Total Dissolved Solids	mg/L	370	359	389	383	383	400	416	347	307	348	434	424	--	520	650	710	660	650	730	740
Antimony	ug/L	2.7	2.7	2	2	2.1	2.5	2.4	2.6	--	1.6	1.6	1.1	--	0.92	1	0.74	0.79	<1.1	<1.1	1.2
Arsenic	ug/L	15.4	15.4	16	15.2	13.9	14.7	14.9	16.7	--	14.3	13	6.6	11.6	5.9	7.3	6.2	9.8	7.9	12	7.3
Barium	ug/L	71.4	67.4	65.3	60.1	56.5	60.7	61.9	59	--	63.7	90.3	95.6	--	110	130	110	140	120	150	120
Beryllium	ug/L	<0.08	<0.08	0.064	0.016	<0.012	<0.012	<0.012	<0.012	--	<0.012	--	<0.089	--	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.029	<0.029	<0.018	<0.018	0.034	0.038	0.03	0.024	--	0.032	<0.07	0.04	--	0.081	0.053	0.072	<0.049	0.064	0.067	<0.055
Chromium	ug/L	0.55	0.49	0.44	<0.054	1.9	0.2	0.2	0.5	--	0.18	0.28	0.14	--	<0.98	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	<0.5	<0.5	0.56	0.6	0.43	0.34	0.53	0.36	--	0.42	0.64	0.6	--	0.63	0.77	1.1	0.73	0.67	0.61	0.29
Lead	ug/L	<0.19	<0.19	0.07	<0.033	0.058	0.08	0.061	0.048	--	<0.033	0.42	<0.13	--	<0.27	0.56	<0.27	<0.11	<0.21	<0.21	<0.24
Lithium	ug/L	15.5	13.5	9.7	8.6	9.6	7.1	8.1	16.4	--	10.7	9.5	13.3	--	15	14	12	20	17	17	19
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	--	<0.1	<0.1	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	30.7	31	29	28.3	28.3	28.2	32.2	33.2	--	27.9	29	32	--	26	32	38	58	54	84	47
Selenium	ug/L	1.3	1.2	0.92	1	1.5	2	2.4	1.4	--	0.22	0.24	0.23	--	<1	<1	<1	--	<0.96	<0.96	1.8
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	0.051	<0.036	<0.036	0.38	--	<0.036	--	<0.099	--	<0.27	<0.27	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.665	0.567	0.209	0.396	0.463	0.339	2.59	0.492	--	2.07	1.38	1.38	--	--	<0.484	<0.333	0.525	0.461	0.586	0.478
Radium-226	pCi/L	0	0.374	0	0.192	0	0.215	0.431	-0.062	--	0.108	0.172	0.512	--	--	0.16	0.148	0.297	0.182	0.314	0.184
Radium-228	pCi/L	0.665	0.193	0.209	0.204	0.463	0.124	2.16	0.492	--	1.96	1.21	0.864	--	--	<0.484	<0.333	0.228	0.279	0.271	0.294
pH at 25 Degrees C	Std. Units	7.1	8	7.6	7.3	7.5	7.7	7.8	7.5	7.6	7.6	7.4	7.4	--	7.3	7.1	7.1	7.2	7.4	7.4	7.3
Field Oxidation Potential	mV	-22.4	-40.4	17.2	-52.8	-31.4	3.9	110.2	-6.8	-11	-31.9	-80	168	-78.9	4.7	-11.9	20.5	-86.4	87.1	6.5	32.4
Field Specific Conductance	umhos/cm	938	599.5	602.3	938	1107	605	1063	831	537	423.7	679	719	526	810	980	971	930	977	1117	1004
Field Temperature	deg C	14.4	12	11	10.8	11.2	12.23	14.6	18	19.9	10.9	18.5	18.3	7.54	9.48	15.87	9.6	15.5	9.3	16	7.6
Groundwater Elevation	feet	703.46	704.59	704.67	704.09	705.04	705.29	704.11	702.91	703.21	705.61	702.56	707.73	704.05	703.93	704.17	703.02	702.02	702.66	701.75	703.76
Oxygen, Dissolved	mg/L	0.16	0.16	0.1	0.19	0.16	0.17	0.2	0.16	0	0.08	0.19	0.2	1.58	1.1	0.3	0.7	0.1	0.1	0.22	0.9
Turbidity	NTU	0.65	1.14	0.4	0.46	0.66	0.22	1.16	0.29	2.29	0.65	3.43	9.54	3.61	4.58	1.79	3.97	0.02	1.1	11.5	21.7
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	340	290	350	230
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<1.9	<4.2	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	340	290	350	230
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	220	59	150	<36
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	36000	38000	43000	42000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1200	1200	1200	750
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	7.4	11	7
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	180	47	97	<36
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1100	1300	1100	660
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5400	4400	5400	4000
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	46000	53000	55000	64000

# Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-306		Number of Sampling Dates: 19																		
Parameter Name	Units	12/21/2016	1/24/2017	2/23/2017	3/28/2017	4/27/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	4/22/2019	10/29/2019	4/27/2020	10/20/2020	4/27/2021	10/20/2021	4/26/2022
Boron	ug/L	2990	3050	3160	3060	3080	2890	3080	2850	2910	2930	2770	2890	3000	2400	2800	2800	2500	2200	2100
Calcium	mg/L	52.4	48.4	51.2	48.8	52.8	49.1	47.5	47.7	48.1	56.2	58.7	65.1	59	61	54	54	57	57	55
Chloride	mg/L	45.4	40.3	36.8	38.1	32.4	34.5	32.6	31.7	28.7	28.6	28.9	30.3	25	23	22	19	17	19	17
Fluoride	mg/L	0.26	0.23	0.26	0.25	0.29	0.24	0.28	0.33	0.3	0.3	0.26	0.32	<0.23	<0.23	0.38	0.29	<0.28	<0.28	<0.22
Field pH	Std. Units	7.53	7.71	7.31	7.84	7.5	7.53	7.77	7.36	8.45	7.47	7.45	7.4	7.58	7.63	6.94	7.66	7.47	7.4	7.55
Sulfate	mg/L	142	128	130	133	137	136	144	132	139	151	195	233	160	140	110	120	140	120	110
Total Dissolved Solids	mg/L	444	398	423	421	426	430	421	402	403	454	506	494	440	400	420	360	360	320	330
Antimony	ug/L	0.25	0.091	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	--	<0.026	<0.15	<0.078	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69
Arsenic	ug/L	0.82	0.58	0.5	0.61	0.55	0.6	0.59	0.57	--	0.58	0.7	0.72	1.9	1.6	1.3	1.1	1	0.87	<0.75
Barium	ug/L	53	47.4	47.7	47.2	47.8	50.1	48.8	46.1	--	54.4	59.3	62.1	110	82	73	67	72	56	54
Beryllium	ug/L	<0.08	<0.08	0.068	0.021	<0.012	<0.012	<0.012	<0.012	--	<0.012	--	<0.089	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.029	<0.029	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	--	0.043	0.085	0.075	<0.077	0.095	0.09	0.1	0.11	0.099	<0.055
Chromium	ug/L	0.65	<0.34	0.34	<0.054	0.14	0.16	0.18	0.46	--	0.21	0.55	0.11	<0.98	<0.98	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	<0.5	<0.5	0.16	0.11	0.077	0.068	0.078	0.065	--	0.071	0.43	0.079	0.49	0.26	0.2	0.17	0.28	<0.19	<0.19
Lead	ug/L	<0.19	<0.19	0.075	0.13	0.15	0.3	0.068	0.037	--	0.075	1	<0.13	0.4	0.31	0.48	0.42	0.87	0.23	<0.24
Lithium	ug/L	<4.9	<4.9	<2.9	<2.9	3.5	<2.9	<2.9	4	--	<4.6	<4.6	<4.6	3	<2.7	<2.3	<2.5	<2.5	<2.5	3.3
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.1	<0.1	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	272	277	282	287	278	275	272	278	--	271	234	235	200	230	250	260	240	220	220
Selenium	ug/L	<0.18	<0.18	<0.086	<0.086	<0.086	0.091	<0.086	<0.086	--	<0.086	<0.16	<0.085	<1	<1	<1	--	<0.96	<0.96	<0.96
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	<0.036	<0.036	<0.036	0.22	--	<0.036	--	<0.099	<0.27	<0.27	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.843	0.481	0.391	1.07	0.785	0.831	1.14	1.05	--	0.645	1.21	1.42	--	<0.476	0.578	0.387	0.205	0.899	1.21
Radium-226	pCi/L	0	0	-0.245	0.493	0.525	0.452	0.37	0.652	--	0.394	0.541	0.157	--	<0.134	<0.14	0.135	0.205	0.257	0.081
Radium-228	pCi/L	0.843	0.481	0.391	0.575	0.26	0.379	0.774	0.398	--	0.251	0.669	1.26	--	<0.476	<0.46	0.252	-0.062	0.642	1.13
pH at 25 Degrees C	Std. Units	7.2	7.8	7.7	7.2	7.4	7.7	7.8	7.6	7.6	7.6	7.7	7.6	7.6	7.6	7.6	7.7	7.7	7.7	7.7
Field Oxidation Potential	mV	-80.4	-88.9	-48.1	-140.5	-64.3	-111.6	36.6	-31.2	-128	-94	-81	-41.1	-97.6	-145.7	-142	-199.7	-104.7	-124.2	-119.8
Field Specific Conductance	umhos/cm	1079	644	629	1023	1165	624	1067	828	636	663	731	736	703	633	539.7	538.5	580	562.5	513.8
Field Temperature	deg C	13.2	13.4	13.4	13.6	13.1	13.49	13.5	13.6	14.7	13.6	16.4	15.6	12.87	12.56	13.2	12.5	13.4	12.9	12.3
Groundwater Elevation	feet	703.32	704.49	704.59	703.99	704.98	705.34	703.94	702.74	703.16	705.51	702.68	707.88	704.23	704.4	703.35	702.26	702.75	702.02	704.02
Oxygen, Dissolved	mg/L	0.11	0.23	0.13	0.12	0.17	0.15	0.21	0.04	0.8	3	1.4	0.45	0.99	0.29	0.18	0.13	0.34	0.24	0.16
Turbidity	NTU	1.97	2.25	0.79	0.77	0.43	0.3	0.59	1.04	3.45	0.62	14.59	1.74	21.3	8.16	3.92	19.93	1.2	12.7	18.9
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	160	130	200	130
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<1.9	<3.1	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	160	130	200	130
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	54000	--	--	--
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1800	1700	1800	1700
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12000	12000	12000	13000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110	100	110	100
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1500	1500	1600	1400
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100	100	96	93
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	250	240	210	230
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	860	880	820	900
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	54000	52000	47000	55000

## Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-306A						
Number of Sampling Dates: 5						
Parameter Name	Units	9/15/2020	10/20/2020	4/27/2021	10/20/2021	4/26/2022
Boron	ug/L	2100	2400	2400	2100	2200
Calcium	mg/L	150	150	150	150	150
Chloride	mg/L	63	65	66	70	62
Fluoride	mg/L	<0.23	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	7.87	7.29	7.24	7.21	7.21
Sulfate	mg/L	330	350	350	360	320
Total Dissolved Solids	mg/L	840	800	790	760	780
Antimony	ug/L	<0.51	0.64	<1.1	<1.1	<0.69
Arsenic	ug/L	<0.88	<0.88	<0.75	<0.75	<0.75
Barium	ug/L	180	170	160	130	130
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	0.073	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	1.9	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	1.3	0.49	0.15	<0.19	<0.19
Lead	ug/L	1.8	0.79	<0.21	<0.21	<0.24
Lithium	ug/L	4.1	6.3	5.8	5.3	7.8
Mercury	ug/L	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	8.6	13	16	15	17
Selenium	ug/L	<1	--	<0.96	<0.96	<0.96
Thallium	ug/L	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.427	0.898	0.642	0.368	0.859
Radium-226	pCi/L	0.453	0.413	0.257	0.253	0.375
Radium-228	pCi/L	-0.0262	0.485	0.385	0.115	0.484
pH at 25 Degrees C	Std. Units	7.3	7.4	7.5	7.3	7.4
Field Oxidation Potential	mV	-100.3	-139.7	-17.8	-66.1	-77.6
Field Specific Conductance	umhos/cm	1180	1054	873	1109	1036
Field Temperature	deg C	14.1	12.7	13.6	13.1	12.1
Groundwater Elevation	feet	--	--	703.63	702.31	704.16
Oxygen, Dissolved	mg/L	0.13	0.13	0.11	0.26	0.14
Turbidity	NTU	118.1	20.8	2.4	10.4	21.5
Bicarbonate Alkalinity as CaCO3	mg/L	--	200	200	320	230
Carbonate Alkalinity as CaCO3	mg/L	--	<3.8	<4.6	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	200	200	320	230
Calcium, total	ug/L	--	140000	--	--	--
Iron, total	ug/L	--	2800	1800	1700	1900
Magnesium, total	ug/L	--	45000	46000	45000	49000
Manganese, total	ug/L	--	410	360	380	390
Iron, dissolved	ug/L	--	1700	1700	1600	1600
Manganese, dissolved	ug/L	--	360	380	340	350
Potassium, total	ug/L	--	1600	1600	1700	1700
Sodium, total	ug/L	--	33000	34000	33000	40000

## Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-307								
Number of Sampling Dates: 7								
Parameter Name	Units	4/23/2019	10/28/2019	5/27/2020	10/19/2020	4/26/2021	10/21/2021	4/25/2022
Boron	ug/L	840	730	630	890	1000	960	650
Calcium	mg/L	22	18	16	21	21	16	27
Chloride	mg/L	15	3.5	4.2	<2	10	2.5	31
Fluoride	mg/L	0.54	0.67	0.49	0.29	0.31	0.4	<0.22
Field pH	Std. Units	10.05	9.58	8.28	9.26	7.2	8.84	9.47
Sulfate	mg/L	52	32	32	30	42	36	36
Total Dissolved Solids	mg/L	150	140	38	80	82	26	100
Antimony	ug/L	0.92	1.2	0.83	1	<1.1	<1.1	0.72
Arsenic	ug/L	3.8	7.4	6.1	6.7	6.5	6.2	4.2
Barium	ug/L	30	34	26	45	36	35	52
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.077	<0.039	<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	0.091	<0.091	<0.091	<0.091	<0.091	<0.19	<0.19
Lead	ug/L	<0.27	<0.27	<0.27	<0.11	<0.21	<0.21	<0.24
Lithium	ug/L	10	15	8.3	16	9.4	10	12
Mercury	ug/L	<0.1	<0.1	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	5.8	5.2	7	5.2	8.5	6.6	8.4
Selenium	ug/L	<1	<1	<1	--	2.5	<0.96	2.5
Thallium	ug/L	<0.27	<0.27	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	--	<0.377	<0.458	0.233	0.043	0.242	0.331
Radium-226	pCi/L	--	<0.135	<0.139	-0.043	0.043	0.141	0.0224
Radium-228	pCi/L	--	<0.377	<0.458	0.233	-0.0204	0.101	0.309
pH at 25 Degrees C	Std. Units	9.8	9.6	9.2	9.4	9.6	9.2	9.2
Field Oxidation Potential	mV	-53.1	-29.9	109.8	-123.4	11.6	130.8	8
Field Specific Conductance	umhos/cm	225	157	243.5	145.2	857	142.5	235.3
Field Temperature	deg C	11.72	18.43	12.6	18.7	9	17.4	10.2
Groundwater Elevation	feet	709.86	708.57	708.14	706.56	706.38	706.29	708.27
Oxygen, Dissolved	mg/L	1.54	0.27	0.19	0.09	0.11	0.24	0.09
Turbidity	NTU	15.6	2.16	2.98	2.09	2.8	10.7	14.8
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	41	9.9	82	39
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<1.9	9.9	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	--	--	41	20	82	39
Calcium, total	ug/L	--	--	--	19000	--	--	--
Iron, total	ug/L	--	--	--	<50	<36	<36	<36
Magnesium, total	ug/L	--	--	--	2300	1300	1400	2300
Manganese, total	ug/L	--	--	--	<4	<4.4	<4.4	<3.6
Iron, dissolved	ug/L	--	--	--	<50	<36	<36	<36
Manganese, dissolved	ug/L	--	--	--	<4	<4.4	<4.4	<3.6
Potassium, total	ug/L	--	--	--	1600	1400	1300	1700
Sodium, total	ug/L	--	--	--	4600	9500	5500	10000

## Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-308										
Number of Sampling Dates: 9										
Parameter Name	Units	4/23/2019	10/28/2019	5/27/2020	10/19/2020	4/26/2021	7/14/2021	10/21/2021	2/22/2022	4/25/2022
Boron	ug/L	5700	6100	6100	6400	5900	--	6100	--	4300
Calcium	mg/L	59	60	68	54	65	--	53	--	76
Chloride	mg/L	15	13	11	8.4	7.9	--	8.1	--	8.3
Fluoride	mg/L	0.77	0.26	0.54	<0.23	<0.28	--	<0.28	--	<0.22
Field pH	Std. Units	9.24	9.19	7.86	9.23	7.15	9.65	9.17	8.99	9.22
Sulfate	mg/L	190	190	180	150	200	--	140	--	170
Total Dissolved Solids	mg/L	450	460	390	370	430	--	270	--	400
Antimony	ug/L	1.4	1.7	0.7	1.4	<1.1	--	3	--	0.84
Arsenic	ug/L	45	63	58	50	53	--	48	--	44
Barium	ug/L	39	38	38	53	50	--	36	--	54
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27	<0.27	--	<0.27	--	<0.27
Cadmium	ug/L	<0.077	0.077	0.04	0.071	0.055	--	<0.051	--	<0.055
Chromium	ug/L	<0.98	<0.98	<1.1	<4.4	<1.1	--	<1.1	--	<1.1
Cobalt	ug/L	<0.091	<0.091	<0.091	<0.36	<0.091	--	<0.19	--	<0.19
Lead	ug/L	<0.27	<0.27	<0.27	<0.11	<0.21	--	0.29	--	<0.24
Lithium	ug/L	29	31	35	47	39	47	39	37	50
Mercury	ug/L	<0.1	<0.1	<0.1	--	<0.15	--	<0.15	--	<0.11
Molybdenum	ug/L	58	58	64	58	53	--	58	--	73
Selenium	ug/L	<1	2.2	<1	--	<0.96	--	<0.96	--	5.9
Thallium	ug/L	<0.27	<0.27	<0.26	--	<0.26	--	<0.26	--	<0.26
Total Radium	pCi/L	--	<0.488	<0.488	1.05	0.361	--	0.219	--	0.299
Radium-226	pCi/L	--	<0.127	<0.204	-0.21	0.0686	--	0.102	--	0.0556
Radium-228	pCi/L	--	<0.488	<0.488	1.05	0.292	--	0.116	--	0.243
pH at 25 Degrees C	Std. Units	8.9	9.2	9.1	9.4	9.1	--	9.2	--	9.1
Field Oxidation Potential	mV	-62.5	-58.1	-22.4	-178	10.7	-228.9	-170.3	210.7	-113.8
Field Specific Conductance	umhos/cm	659	618	1008	318.1	743	551.7	507.2	486	616.7
Field Temperature	deg C	12.11	15.05	12.7	14.9	9	15.3	14.6	12.2	11.1
Groundwater Elevation	feet	706.19	706.31	705.64	703.87	705.05	703.38	703.21	702.84	705.45
Oxygen, Dissolved	mg/L	1.16	0.43	0.1	0.21	0.16	0.13	0.2	0.14	0.06
Turbidity	NTU	2.13	2.44	2.33	1.08	9.5	0.14	9.8	0	16.6
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	82	89	--	52	--	49
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	41	39	--	62	--	98
Total Alkalinity as CaCO3	mg/L	--	--	--	120	130	--	110	--	150
Calcium, total	ug/L	--	--	--	43000	--	--	--	--	--
Iron, total	ug/L	--	--	--	<50	<36	--	<36	--	<36
Magnesium, total	ug/L	--	--	--	3100	7000	--	2600	--	8100
Manganese, total	ug/L	--	--	--	47	85	--	38	--	92
Arsenic, dissolved	ug/L	--	--	--	44	50	--	50	--	43
Iron, dissolved	ug/L	--	--	--	<50	<36	--	<36	--	<36
Manganese, dissolved	ug/L	--	--	--	52	85	--	36	--	79
Potassium, total	ug/L	--	--	--	5300	6800	--	6900	--	8600
Sodium, total	ug/L	--	--	--	33000	46000	--	42000	--	53000

## Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-309								
Number of Sampling Dates: 7								
Parameter Name	Units	10/29/2019	1/9/2020	4/27/2020	10/21/2020	4/27/2021	10/22/2021	4/27/2022
Boron	ug/L	1000	1000	1100	1800	1200	1200	970
Calcium	mg/L	120	130	120	120	120	110	130
Chloride	mg/L	18	17	16	13	12	17	14
Fluoride	mg/L	0.68	0.51	0.75	0.61	0.36	0.36	<0.22
Field pH	Std. Units	7.33	6.95	7.09	7.22	7.34	7.42	7.24
Sulfate	mg/L	130	130	130	170	110	130	95
Total Dissolved Solids	mg/L	550	650	630	620	560	480	530
Antimony	ug/L	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69
Arsenic	ug/L	140	110	75	89	100	75	39
Barium	ug/L	130	130	130	130	190	100	100
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.039	<0.039	<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	0.42	0.23	0.35	0.14	0.12	<0.19	0.2
Lead	ug/L	0.54	<0.27	<0.27	<0.11	<0.21	<0.21	<0.24
Lithium	ug/L	15	15	13	19	15	15	16
Mercury	ug/L	<0.1	<0.1	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	19	18	19	21	17	24	18
Selenium	ug/L	<1	<1	<1	--	<0.96	<0.96	1.1
Thallium	ug/L	<0.27	<0.27	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.801	0.543	0.837	0.815	0.829	0.818	0.739
Radium-226	pCi/L	0.346	0.176	0.211	0.199	0.337	0.288	0.112
Radium-228	pCi/L	0.455	<0.386	0.627	0.616	0.492	0.531	0.627
pH at 25 Degrees C	Std. Units	7.4	7.4	7.2	7.4	7.7	7.5	7.4
Field Oxidation Potential	mV	-103.8	-335.3	-117.7	-145.9	-55.8	-123.4	-3.2
Field Specific Conductance	umhos/cm	931	1016	898	955	914	855	948
Field Temperature	deg C	18.6	15.69	13.2	18.8	13.6	17.9	11.7
Groundwater Elevation	feet	703.84	703.1	702.84	701.97	702.68	701.7	703.56
Oxygen, Dissolved	mg/L	7.45	4.42	0.06	0.1	0.11	0.21	0.1
Turbidity	NTU	4.96	1.81	4.21	1.86	0.7	19.8	11.4
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	360	410	390	440
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<3.8	<4.6	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	--	--	360	410	390	440
Calcium, total	ug/L	--	--	--	100000	--	--	--
Iron, total	ug/L	--	--	--	1200	4400	1300	1700
Magnesium, total	ug/L	--	--	--	33000	39000	32000	37000
Manganese, total	ug/L	--	--	--	920	1400	1300	1600
Arsenic, dissolved	ug/L	--	--	--	78	62	72	36
Iron, dissolved	ug/L	--	--	--	1200	1300	1200	1300
Manganese, dissolved	ug/L	--	--	--	980	1400	1200	1400
Potassium, total	ug/L	--	--	--	4800	4400	4800	4600
Sodium, total	ug/L	--	--	--	34000	35000	34000	36000

## Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-309A						
Number of Sampling Dates: 5						
Parameter Name	Units	9/15/2020	10/21/2020	4/27/2021	10/22/2021	4/26/2022
Boron	ug/L	530	470	780	740	830
Calcium	mg/L	100	110	110	110	120
Chloride	mg/L	23	24	26	30	25
Fluoride	mg/L	<0.23	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	7.26	7.33	7.1	7.19	7.18
Sulfate	mg/L	110	110	130	140	120
Total Dissolved Solids	mg/L	490	460	490	440	490
Antimony	ug/L	<0.51	<0.51	<1.1	<1.1	<0.69
Arsenic	ug/L	<0.88	<0.88	0.98	0.87	0.79
Barium	ug/L	170	170	190	180	180
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.049	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.22	0.32	0.3	0.32	0.34
Lead	ug/L	<0.11	<0.11	<0.21	<0.21	<0.24
Lithium	ug/L	4.1	5.9	5.8	4.9	8.4
Mercury	ug/L	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	8.5	7.1	9.1	11	11
Selenium	ug/L	<1	--	<0.96	<0.96	<0.96
Thallium	ug/L	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	0.783	0.509	1.06	2.49	0.981
Radium-226	pCi/L	0.23	0.0367	0.404	0.306	0.318
Radium-228	pCi/L	0.553	0.473	0.659	2.18	0.663
pH at 25 Degrees C	Std. Units	7.2	7.4	7.3	7.3	7.2
Field Oxidation Potential	mV	-144.8	-181.6	-36.1	-144.2	-135.7
Field Specific Conductance	umhos/cm	815	749	907	824	770
Field Temperature	deg C	16.1	15.7	14.1	15.6	14.4
Groundwater Elevation	feet	--	--	702.92	701.6	702.93
Oxygen, Dissolved	mg/L	0.14	0.13	4.8	0.32	0.2
Turbidity	NTU	1.3	1.46	12.5	19.8	8.18
Bicarbonate Alkalinity as CaCO3	mg/L	--	280	290	370	290
Carbonate Alkalinity as CaCO3	mg/L	--	<1.9	<4.6	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	280	290	370	290
Calcium, total	ug/L	--	100000	--	--	--
Iron, total	ug/L	--	7500	9100	8900	9700
Magnesium, total	ug/L	--	29000	31000	31000	32000
Manganese, total	ug/L	--	710	770	740	800
Iron, dissolved	ug/L	--	7600	8600	8700	8800
Manganese, dissolved	ug/L	--	710	760	720	740
Potassium, total	ug/L	--	1700	2000	2000	2100
Sodium, total	ug/L	--	14000	21000	18000	22000



## Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-310								
Number of Sampling Dates: 7								
Parameter Name	Units	10/29/2019	1/9/2020	4/27/2020	10/21/2020	4/27/2021	10/22/2021	4/27/2022
Boron	ug/L	950	940	880	1300	850	870	860
Calcium	mg/L	88	85	87	110	110	110	120
Chloride	mg/L	20	19	20	20	18	24	22
Fluoride	mg/L	0.53	0.61	0.93	<0.23	0.36	0.47	<0.22
Field pH	Std. Units	7.3	7.33	7.41	7.2	7.21	7.28	7.3
Sulfate	mg/L	130	130	130	170	140	160	140
Total Dissolved Solids	mg/L	430	500	520	580	550	490	530
Antimony	ug/L	<0.53	<0.53	<0.58	<0.51	<1.1	<1.1	<0.69
Arsenic	ug/L	31	28	23	36	25	25	20
Barium	ug/L	130	140	140	160	160	150	160
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.039	<0.039	<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	0.17	0.095	0.098	0.11	0.098	<0.19	<0.19
Lead	ug/L	<0.27	<0.27	<0.27	<0.11	<0.21	<0.21	<0.24
Lithium	ug/L	15	14	11	18	15	14	18
Mercury	ug/L	<0.1	<0.1	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	60	59	55	71	43	45	45
Selenium	ug/L	<1	<1	<1	--	<0.96	<0.96	<0.96
Thallium	ug/L	<0.27	<0.27	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	<0.471	<0.377	0.341	0.351	1.11	0.588	0.576
Radium-226	pCi/L	0.211	0.232	0.226	0.17	0.453	0.136	0.181
Radium-228	pCi/L	<0.471	<0.377	<0.341	0.182	0.652	0.452	0.395
pH at 25 Degrees C	Std. Units	7.3	7.5	7.3	7.4	7.5	7.5	7.4
Field Oxidation Potential	mV	-129.8	-342.4	-148.01	-162.5	-115.1	-145.2	-125.3
Field Specific Conductance	umhos/cm	801	784	734	894	893	880	972
Field Temperature	deg C	16.48	15.23	12.9	17.5	13.3	16.3	11.8
Groundwater Elevation	feet	703.71	702.81	702.53	701.78	702.11	701.48	703.33
Oxygen, Dissolved	mg/L	7.59	3.72	0.09	0.14	0.09	0.22	0.08
Turbidity	NTU	3.03	3.3	6.3	3.72	8.4	20	10.2
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	300	350	380	350
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<3.8	<4.6	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	--	--	300	350	380	350
Calcium, total	ug/L	--	--	--	100000	--	--	--
Iron, total	ug/L	--	--	--	4400	5700	4500	4900
Magnesium, total	ug/L	--	--	--	26000	31000	29000	35000
Manganese, total	ug/L	--	--	--	980	1400	1200	1300
Arsenic, dissolved	ug/L	--	--	--	32	23	25	19
Iron, dissolved	ug/L	--	--	--	4100	5500	4200	4000
Manganese, dissolved	ug/L	--	--	--	960	1400	1100	1100
Potassium, total	ug/L	--	--	--	5800	5200	5400	5800
Sodium, total	ug/L	--	--	--	53000	41000	37000	48000

## Single Location


Name: IPL - Prairie Creek Generating Station

Location ID: MW-310A						
Number of Sampling Dates: 5						
Parameter Name	Units	9/15/2020	10/21/2020	4/27/2021	10/22/2021	4/27/2022
Boron	ug/L	330	340	290	240	250
Calcium	mg/L	180	180	160	140	140
Chloride	mg/L	46	48	44	48	43
Fluoride	mg/L	<0.23	<0.23	<0.28	<0.28	<0.22
Field pH	Std. Units	7.25	7.24	7.19	7.31	7.25
Sulfate	mg/L	310	330	240	190	140
Total Dissolved Solids	mg/L	890	850	690	570	570
Antimony	ug/L	<0.51	0.66	<1.1	<1.1	<0.69
Arsenic	ug/L	<0.88	<0.88	<0.75	<0.75	<0.75
Barium	ug/L	210	210	200	160	160
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.049	<0.049	<0.051	<0.051	<0.055
Chromium	ug/L	<1.1	<1.1	<1.1	<1.1	<1.1
Cobalt	ug/L	0.54	2.1	4.4	2.8	1.8
Lead	ug/L	<0.11	<0.11	<0.21	<0.21	<0.24
Lithium	ug/L	3.2	5.3	4.9	3.5	6.6
Mercury	ug/L	<0.1	--	<0.15	<0.15	<0.11
Molybdenum	ug/L	20	21	24	20	19
Selenium	ug/L	<1	--	<0.96	<0.96	<0.96
Thallium	ug/L	<0.26	--	<0.26	<0.26	<0.26
Total Radium	pCi/L	1.21	1.27	0.627	0.673	0.663
Radium-226	pCi/L	0.484	0.495	0.32	0.155	0.337
Radium-228	pCi/L	0.725	0.779	0.308	0.519	0.325
pH at 25 Degrees C	Std. Units	7.6	7.4	7.4	7.4	7.3
Field Oxidation Potential	mV	-128.9	-165.8	11.6	-149.4	-152.1
Field Specific Conductance	umhos/cm	1304	1168	862	963	982
Field Temperature	deg C	16	15.3	13.6	15.1	14.6
Groundwater Elevation	feet	--	--	702.69	701.76	703.68
Oxygen, Dissolved	mg/L	0.19	0.11	0.12	--	0.09
Turbidity	NTU	1.72	2.82	1	19.9	8.94
Bicarbonate Alkalinity as CaCO3	mg/L	--	320	300	340	320
Carbonate Alkalinity as CaCO3	mg/L	--	<3.8	<4.6	<4.6	<4.6
Total Alkalinity as CaCO3	mg/L	--	320	300	340	320
Calcium, total	ug/L	--	180000	--	--	--
Iron, total	ug/L	--	6300	7000	6100	6500
Magnesium, total	ug/L	--	48000	42000	37000	39000
Manganese, total	ug/L	--	520	400	360	350
Iron, dissolved	ug/L	--	6100	6800	6000	5600
Manganese, dissolved	ug/L	--	490	420	330	310
Potassium, total	ug/L	--	1100	990	880	970
Sodium, total	ug/L	--	15000	14000	13000	16000

## Single Location

Name: IPL - Prairie Creek Generating Station

Parameter Name	Units	5/25/2022	7/15/2022
Calcium	mg/L	--	100
Field pH	Std. Units	6.9	6.97
Arsenic	ug/L	10	13
Molybdenum	ug/L	7	--
Field Oxidation Potential	mV	201.1	-46.1
Field Specific Conductance	umhos/cm	843	793
Field Temperature	deg C	17.8	21.5
Groundwater Elevation	feet	--	703.8
Oxygen, Dissolved	mg/L	0.1	0.14
Turbidity	NTU	3.84	0
Bicarbonate Alkalinity as CaCO3	mg/L	--	280
Carbonate Alkalinity as CaCO3	mg/L	--	<4.6
Total Alkalinity as CaCO3	mg/L	--	280
Iron, total	ug/L	--	5600
Magnesium, total	ug/L	--	22000
Manganese, total	ug/L	--	1600
Arsenic, dissolved	ug/L	--	11
Iron, dissolved	ug/L	--	4700
Manganese, dissolved	ug/L	--	1300
Molybdenum, dissolved	ug/L	--	9.8
Potassium, total	ug/L	--	2200
Sodium, total	ug/L	--	30000
Cobalt, Dissolved	ug/L	--	<0.19
Lithium, dissolved	ug/L	--	3.9



Appendix E  
Statistical Evaluation

## E1 LCL Evaluation – October 2021 Event

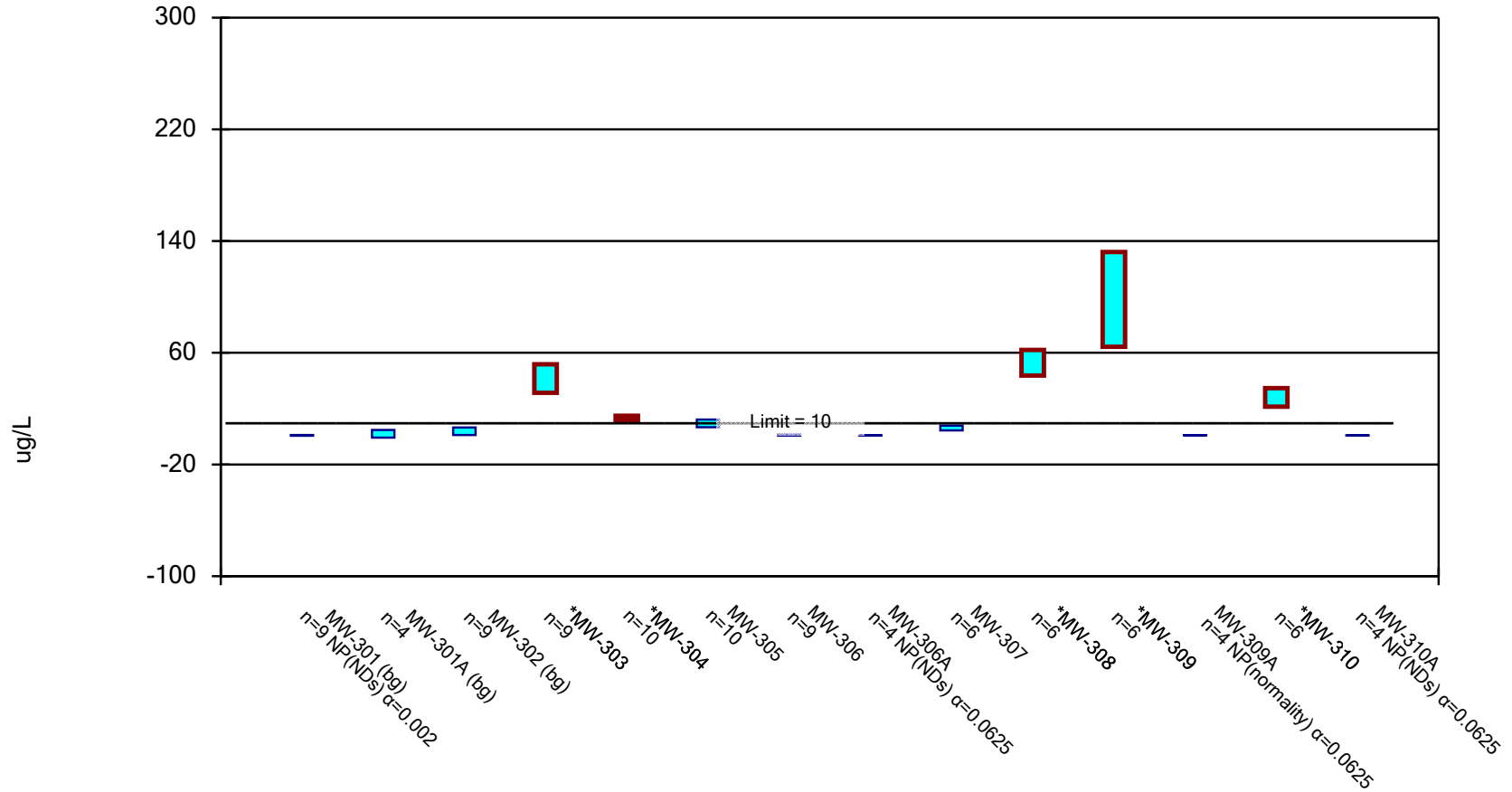
# Confidence Interval

Prairie Creek Generating Station    Client: SCS Engineers    Data: PCS - Chem-export-Dec2020    Printed 12/13/2021, 10:21 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (ug/L)	MW-301 (bg)	1.1	0.54	10	No	9	55.56	None	No	0.002	NP (NDs)
Arsenic (ug/L)	MW-301A (bg)	4.758	-0.8232	10	No	4	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-302 (bg)	6.473	1.102	10	No	9	0	None	No	0.01	Param.
<b>Arsenic (ug/L)</b>	<b>MW-303</b>	<b>51.7</b>	<b>31.3</b>	<b>10</b>	<b>Yes</b>	<b>9</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>Arsenic (ug/L)</b>	<b>MW-304</b>	<b>14.82</b>	<b>11.9</b>	<b>10</b>	<b>Yes</b>	<b>10</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Arsenic (ug/L)	MW-305	12.21	6.707	10	No	10	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-306	1.513	0.6584	10	No	9	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-306A	0.88	0.75	10	No	4	100	None	No	0.0625	NP (NDs)
Arsenic (ug/L)	MW-307	7.8	4.433	10	No	6	0	None	No	0.01	Param.
<b>Arsenic (ug/L)</b>	<b>MW-308</b>	<b>62</b>	<b>43.66</b>	<b>10</b>	<b>Yes</b>	<b>6</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>Arsenic (ug/L)</b>	<b>MW-309</b>	<b>132.1</b>	<b>64.23</b>	<b>10</b>	<b>Yes</b>	<b>6</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Arsenic (ug/L)	MW-309A	0.98	0.87	10	No	4	50	None	No	0.0625	NP (normality)
<b>Arsenic (ug/L)</b>	<b>MW-310</b>	<b>34.62</b>	<b>21.38</b>	<b>10</b>	<b>Yes</b>	<b>6</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Arsenic (ug/L)	MW-310A	0.88	0.75	10	No	4	100	None	No	0.0625	NP (NDs)
Lithium (ug/L)	MW-301 (bg)	14.52	8.77	40	No	9	0	None	No	0.01	Param.
Lithium (ug/L)	MW-301A (bg)	4.2	1.25	40	No	4	50	None	No	0.0625	NP (normality)
Lithium (ug/L)	MW-302 (bg)	6.953	3.603	40	No	9	11.11	None	No	0.01	Param.
Lithium (ug/L)	MW-303	19.52	15.21	40	No	9	0	None	No	0.01	Param.
Lithium (ug/L)	MW-304	16.07	9.954	40	No	9	0	None	No	0.01	Param.
Lithium (ug/L)	MW-305	17.51	11.04	40	No	9	0	None	No	0.01	Param.
Lithium (ug/L)	MW-306	3	1.15	40	No	9	88.89	None	No	0.002	NP (NDs)
Lithium (ug/L)	MW-306A	7.516	3.234	40	No	4	0	None	No	0.01	Param.
Lithium (ug/L)	MW-307	16.04	7.686	40	No	6	0	None	ln(x)	0.01	Param.
Lithium (ug/L)	MW-308	46.58	29.7	40	No	7	0	None	No	0.01	Param.
Lithium (ug/L)	MW-309	19	13	40	No	6	0	None	No	0.0155	NP (normality)
Lithium (ug/L)	MW-309A	7.096	3.254	40	No	4	0	None	No	0.01	Param.
Lithium (ug/L)	MW-310	17.6	11.4	40	No	6	0	None	No	0.01	Param.
Lithium (ug/L)	MW-310A	6.565	1.885	40	No	4	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-301 (bg)	0.65	0.285	100	No	9	77.78	None	No	0.002	NP (NDs)
Molybdenum (ug/L)	MW-301A (bg)	3.1	2.1	100	No	4	0	None	No	0.0625	NP (normality)
Molybdenum (ug/L)	MW-302 (bg)	0.99	0.55	100	No	9	66.67	None	No	0.002	NP (NDs)
Molybdenum (ug/L)	MW-303	21.53	11.56	100	No	9	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-304	29.8	22.82	100	No	9	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-305	57.72	26.54	100	No	9	0	None	ln(x)	0.01	Param.
<b>Molybdenum (ug/L)</b>	<b>MW-306</b>	<b>258.2</b>	<b>217.4</b>	<b>100</b>	<b>Yes</b>	<b>9</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Molybdenum (ug/L)	MW-306A	20.6	5.704	100	No	4	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-307	8.126	4.64	100	No	6	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-308	63.04	53.51	100	No	6	0	None	ln(x)	0.01	Param.
Molybdenum (ug/L)	MW-309	23.11	16.23	100	No	6	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-309A	12.6	5.253	100	No	4	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-310	69.77	41.23	100	No	6	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-310A	25.77	17.43	100	No	4	0	None	ln(x)	0.01	Param.

## 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 12/13/2021 10:21 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020



# Confidence Interval

Constituent: Arsenic (ug/L) Analysis Run 12/13/2021 10:21 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-301A (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307
5/8/2018	0.54 (J)		0.79 (J)	26.9	15	14.3	0.58 (J)		
8/6/2018	1.1		9	35.1	12.3	13	0.7 (J)		
10/9/2018	0.67 (J)		4.5	44.5	14.4	6.6	0.72 (J)		
3/11/2019					12.9	11.6			
4/22/2019	<0.75 (U)		2.1	26	11	5.9	1.9 (J)		
4/23/2019									3.8
10/28/2019	<0.75 (U)		7						7.4
10/29/2019				52	14	7.3	1.6 (J)		
1/9/2020									
4/27/2020	<0.88 (U)		4.4	48	11	6.2	1.3 (J)		
5/27/2020									6.1
9/15/2020		3.7						<0.88 (U)	
10/19/2020	<0.88 (U)		2						6.7
10/20/2020				56	14	9.8	1.1 (J)	<0.88 (U)	
10/21/2020		1.9 (J)							
4/26/2021									6.5
4/27/2021	<0.75 (U)		3.4	39	13	7.9	1 (J)	<0.75 (U)	
4/28/2021		0.87 (J)							
10/20/2021						12	0.87 (J)	<0.75 (U)	
10/21/2021	0.88 (J)		0.9 (J)	46	16				6.2
10/22/2021		1.4 (J)							
<b>Mean</b>	0.8	1.968	3.788	41.5	13.36	9.46	1.086	0.815	6.117
<b>Std. Dev.</b>	0.1586	1.229	2.781	10.56	1.639	3.086	0.4424	0.07506	1.225
<b>Upper Lim.</b>	1.1	4.758	6.473	51.7	14.82	12.21	1.513	0.88	7.8
<b>Lower Lim.</b>	0.54	-0.8232	1.102	31.3	11.9	6.707	0.6584	0.75	4.433

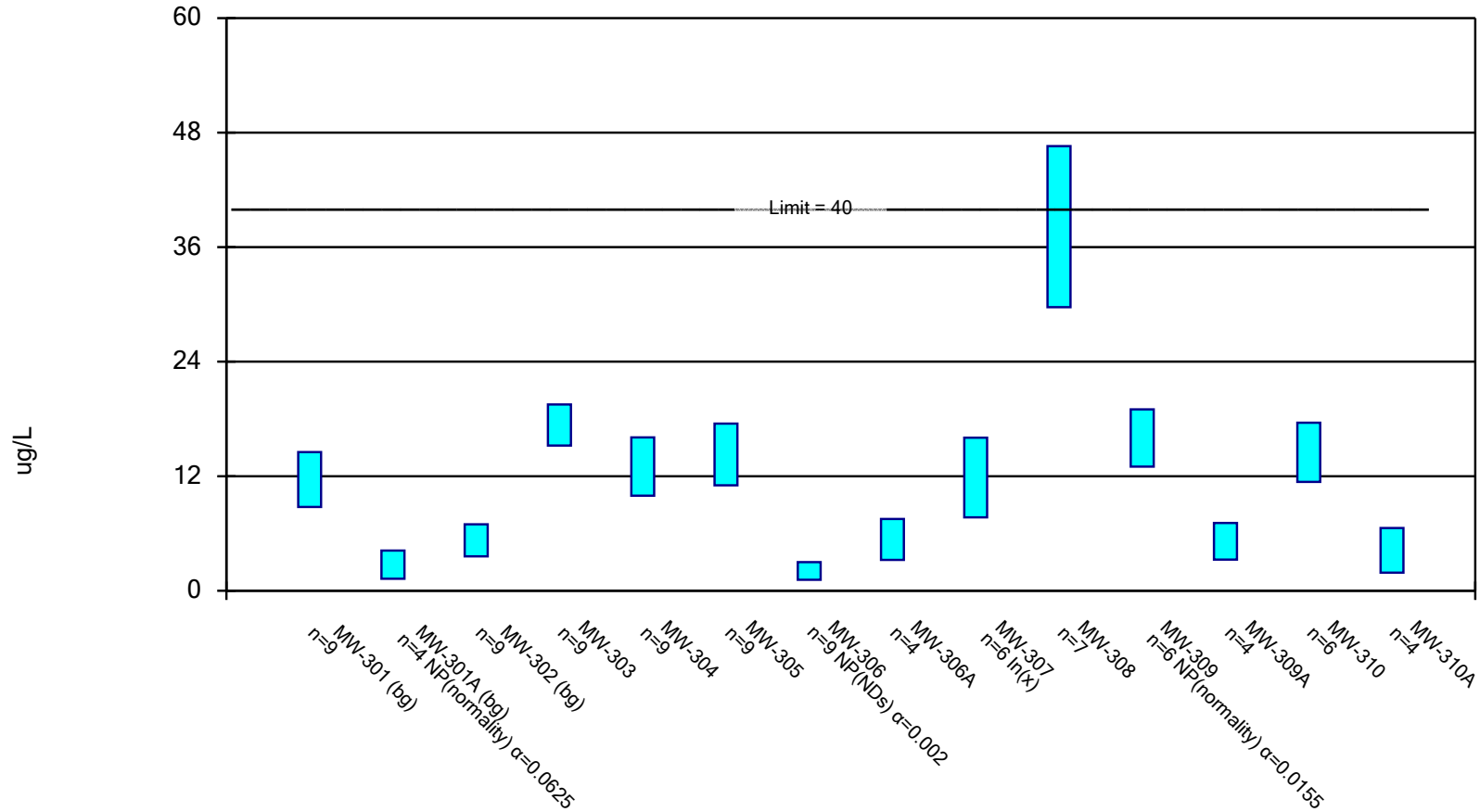
# Confidence Interval

Constituent: Arsenic (ug/L)    Analysis Run 12/13/2021 10:21 PM    View: PCS  
 Prairie Creek Generating Station    Client: SCS Engineers    Data: PCS - Chem-export-Dec2020

	MW-308	MW-309	MW-309A	MW-310	MW-310A
5/8/2018					
8/6/2018					
10/9/2018					
3/11/2019					
4/22/2019					
4/23/2019	45				
10/28/2019	63				
10/29/2019		140		31	
1/9/2020		110		28	
4/27/2020		75		23	
5/27/2020	58				
9/15/2020			<0.88 (U)		<0.88 (U)
10/19/2020	50				
10/20/2020					
10/21/2020		89	<0.88 (U)	36	<0.88 (U)
4/26/2021	53				
4/27/2021		100	0.98 (J)	25	<0.75 (U)
4/28/2021					
10/20/2021					
10/21/2021	48	75			
10/22/2021			0.87 (J)	25	<0.75 (U)
<b>Mean</b>	52.83	98.17	0.9025	28	0.815
<b>Std. Dev.</b>	6.676	24.7	0.05188	4.817	0.07506
<b>Upper Lim.</b>	62	132.1	0.98	34.62	0.88
<b>Lower Lim.</b>	43.66	64.23	0.87	21.38	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: Lithium Analysis Run 12/13/2021 10:21 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

Constituent: Lithium (ug/L) Analysis Run 12/13/2021 10:21 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-301A (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307
5/8/2018	13.6		5.4 (J)	19	10.8	10.7	<4.6 (U)		
8/6/2018	5.4 (J)		<4.6 (U)	15.4	6.9 (J)	9.5 (J)	<4.6 (U)		
10/9/2018	13.3		4.6 (J)	19.9	13.4	13.3	<4.6 (U)		
4/22/2019	8.5 (J)		4.7 (J)	17	17	15	3 (J)		
4/23/2019									10
10/28/2019	12		5.3 (J)						15
10/29/2019				17	13	14	<2.7 (U)		
1/9/2020									
4/27/2020	11		3.8 (J)	14	11	12	<2.3 (U)		
5/27/2020									8.3 (J)
9/15/2020		4.2 (J)						4.1 (J)	
10/19/2020	15		8.2 (J)						16
10/20/2020				21	17	20	<2.5 (U)	6.3 (J)	
10/21/2020		4.1 (J)							
4/26/2021									9.4 (J)
4/27/2021	13		6.3 (J)	16	14	17	<2.5 (U)	5.8 (J)	
4/28/2021		<2.5 (U)							
7/14/2021									
10/20/2021						17	<2.5 (U)	5.3 (J)	
10/21/2021	13		6.9 (J)	17	14				10
10/22/2021		<2.5 (U)							
<b>Mean</b>	11.64	2.7	5.278	17.37	13.01	14.28	1.794	5.375	11.45
<b>Std. Dev.</b>	2.977	1.675	1.735	2.229	3.166	3.353	0.6821	0.943	3.214
<b>Upper Lim.</b>	14.52	4.2	6.953	19.52	16.07	17.51	3	7.516	16.04
<b>Lower Lim.</b>	8.77	1.25	3.603	15.21	9.954	11.04	1.15	3.234	7.686

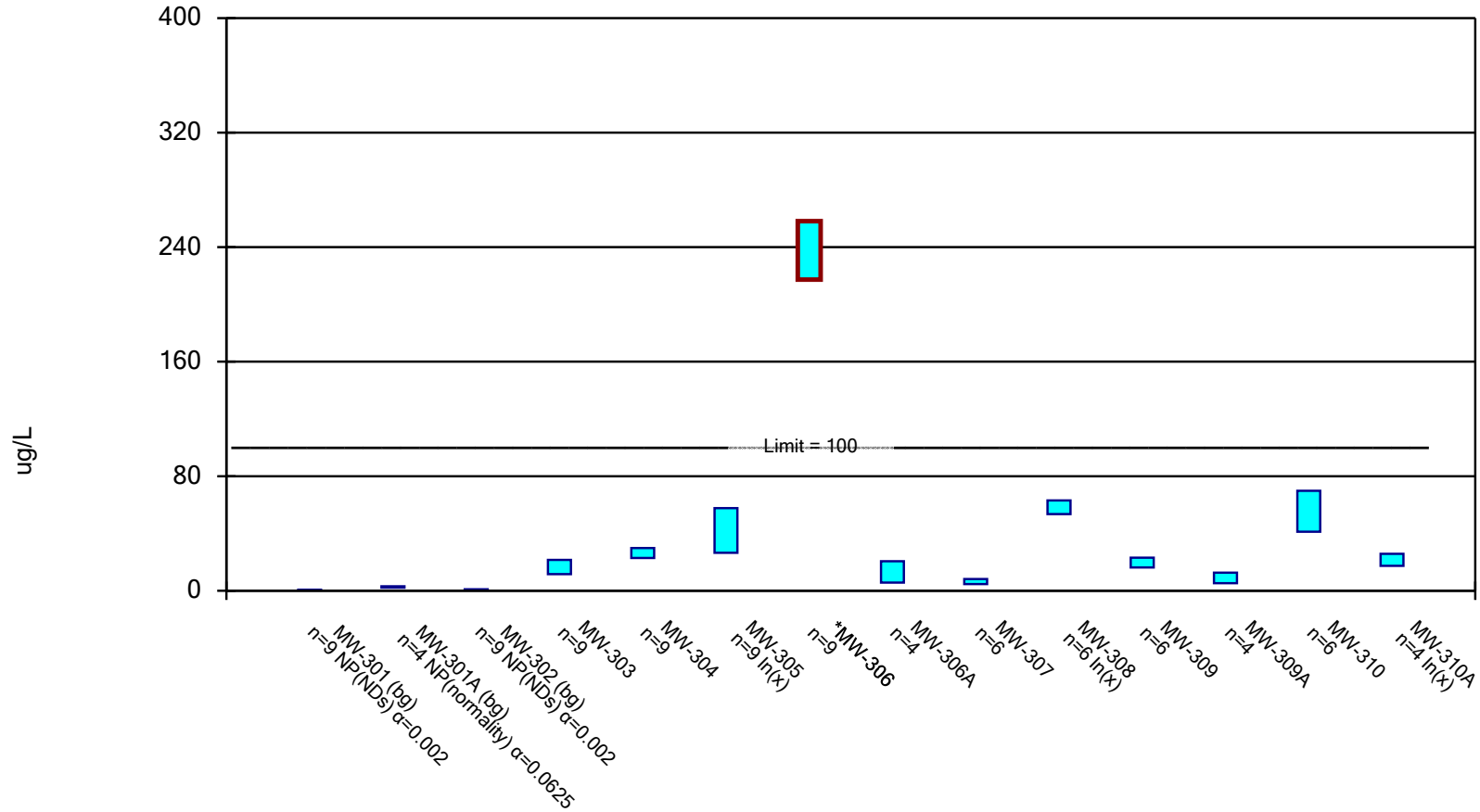
# Confidence Interval

Constituent: Lithium (ug/L)    Analysis Run 12/13/2021 10:21 PM    View: PCS  
 Prairie Creek Generating Station    Client: SCS Engineers    Data: PCS - Chem-export-Dec2020

	MW-308	MW-309	MW-309A	MW-310	MW-310A
5/8/2018					
8/6/2018					
10/9/2018					
4/22/2019					
4/23/2019	29				
10/28/2019	31				
10/29/2019		15		15	
1/9/2020		15		14	
4/27/2020		13		11	
5/27/2020	35				
9/15/2020			4.1 (J)		3.2 (J)
10/19/2020	47				
10/20/2020					
10/21/2020		19	5.9 (J)	18	5.3 (J)
4/26/2021	39				
4/27/2021		15	5.8 (J)	15	4.9 (J)
4/28/2021					
7/14/2021	47				
10/20/2021					
10/21/2021	39	15			
10/22/2021			4.9 (J)	14	3.5 (J)
<b>Mean</b>	38.14	15.33	5.175	14.5	4.225
<b>Std. Dev.</b>	7.105	1.966	0.8461	2.258	1.031
<b>Upper Lim.</b>	46.58	19	7.096	17.6	6.565
<b>Lower Lim.</b>	29.7	13	3.254	11.4	1.885

## 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 12/13/2021 10:21 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

Constituent: Molybdenum (ug/L)    Analysis Run 12/13/2021 10:21 PM    View: PCS  
 Prairie Creek Generating Station    Client: SCS Engineers    Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-301A (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307
5/8/2018	0.35 (J)		0.99 (J)	23.1	19.8	27.9	271		
8/6/2018	0.44 (J)		0.78 (J)	20.7	25.4	29	234		
10/9/2018	<0.57 (U)		0.67 (J)	21.7	27.6	32	235		
4/22/2019	<1.1 (U)		<1.1 (U)	12	23	26	200		
4/23/2019									5.8
10/28/2019	<1.1 (U)		<1.1 (U)						5.2
10/29/2019				20	31	32	230		
1/9/2020									
4/27/2020	<1.1 (U)		<1.1 (U)	8.4	26	38	250		
5/27/2020									7
9/15/2020		2.1						8.6	
10/19/2020	<1.1 (U)		<1.1 (U)						5.2
10/20/2020				17	28	58	260	13	
10/21/2020		3.1							
4/26/2021									8.5
4/27/2021	<1.3 (U)		<1.3 (U)	12	25	54	240	16	
4/28/2021		3.1							
10/20/2021						84	220	15	
10/21/2021	<1.3 (U)		<1.3 (U)	14	31				6.6
10/22/2021		3.1							
Mean	0.5083	2.85	0.66	16.54	26.31	42.32	237.8	13.15	6.383
Std. Dev.	0.1258	0.5	0.1466	5.161	3.614	19.37	21.15	3.28	1.269
Upper Lim.	0.65	3.1	0.99	21.53	29.8	57.72	258.2	20.6	8.126
Lower Lim.	0.285	2.1	0.55	11.56	22.82	26.54	217.4	5.704	4.64



# Confidence Interval

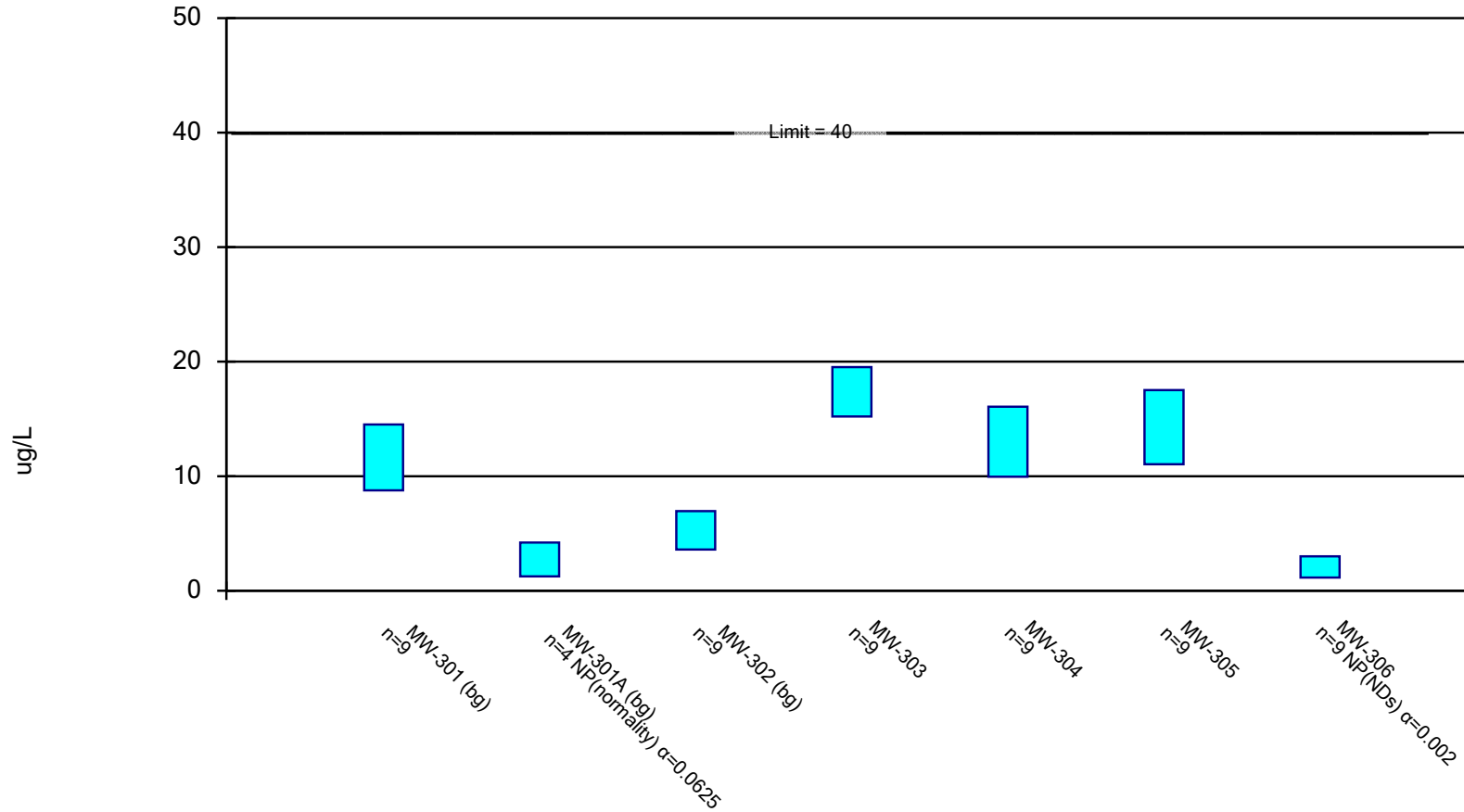
Constituent: Molybdenum (ug/L) Analysis Run 12/13/2021 10:21 PM View: PCS  
Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-308	MW-309	MW-309A	MW-310	MW-310A
5/8/2018					
8/6/2018					
10/9/2018					
4/22/2019					
4/23/2019	58				
10/28/2019	58				
10/29/2019		19		60	
1/9/2020		18		59	
4/27/2020		19		55	
5/27/2020	64				
9/15/2020			8.5		20
10/19/2020	58				
10/20/2020					
10/21/2020		21	7.1	71	21
4/26/2021	53				
4/27/2021		17	9.1	43	24
4/28/2021					
10/20/2021					
10/21/2021	58	24			
10/22/2021			11	45	20
Mean	58.17	19.67	8.925	55.5	21.25
Std. Dev.	3.488	2.503	1.617	10.39	1.893
Upper Lim.	63.04	23.11	12.6	69.77	25.77
Lower Lim.	53.51	16.23	5.253	41.23	17.43

## E2 LCL Evaluation – February 2022 Event

## 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: Lithium Analysis Run 5/2/2022 12:05 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

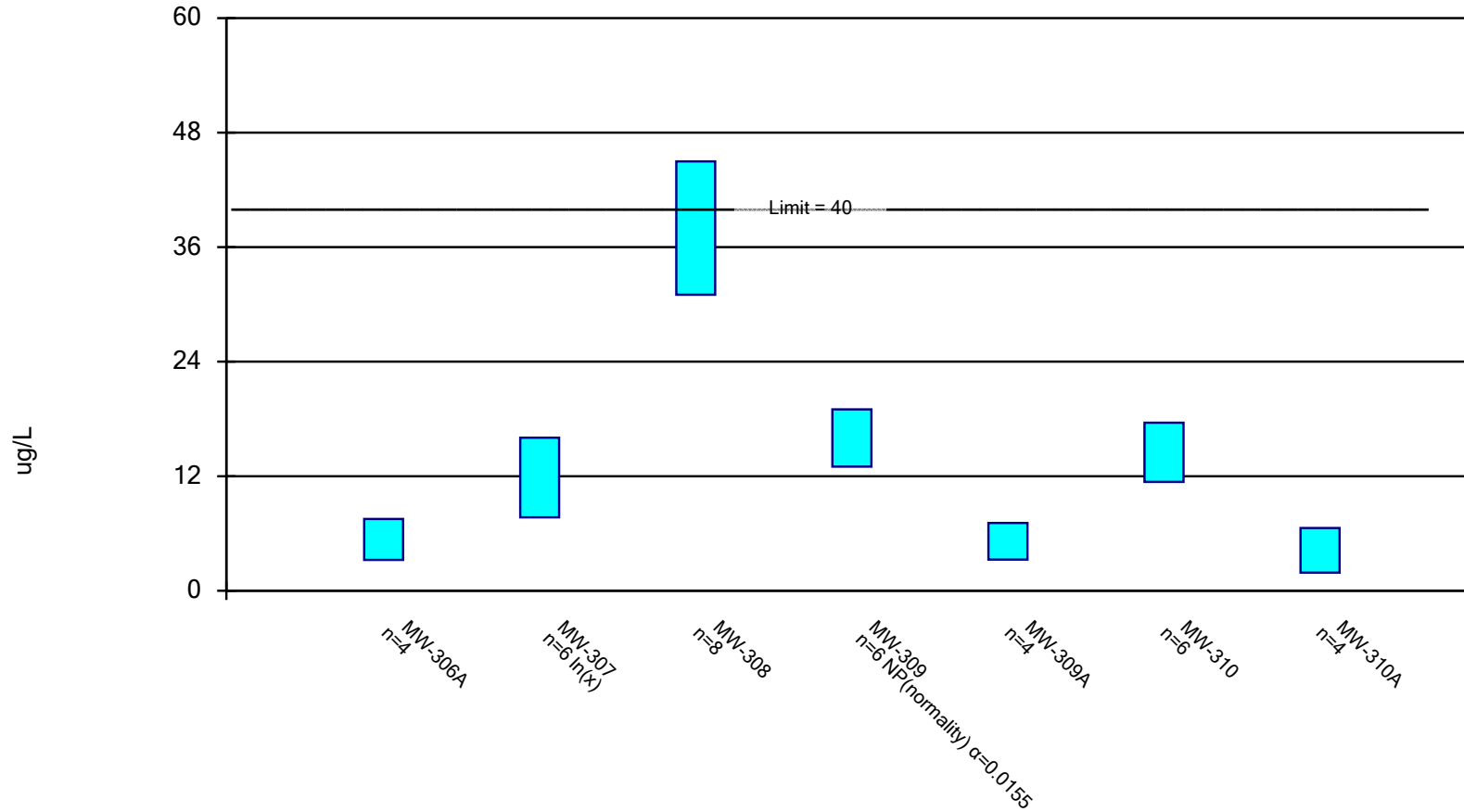
Constituent: Lithium (ug/L) Analysis Run 5/2/2022 12:07 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-301A (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306
5/8/2018	13.6		5.4 (J)	19	10.8	10.7	<4.6 (U)
8/6/2018	5.4 (J)		<4.6 (U)	15.4	6.9 (J)	9.5 (J)	<4.6 (U)
10/9/2018	13.3		4.6 (J)	19.9	13.4	13.3	<4.6 (U)
4/22/2019	8.5 (J)		4.7 (J)	17	17	15	3 (J)
10/28/2019	12		5.3 (J)				
10/29/2019				17	13	14	<2.7 (U)
4/27/2020	11		3.8 (J)	14	11	12	<2.3 (U)
9/15/2020		4.2 (J)					
10/19/2020	15		8.2 (J)				
10/20/2020				21	17	20	<2.5 (U)
10/21/2020		4.1 (J)					
4/27/2021	13		6.3 (J)	16	14	17	<2.5 (U)
4/28/2021		<2.5 (U)					
10/20/2021						17	<2.5 (U)
10/21/2021	13		6.9 (J)	17	14		
10/22/2021		<2.5 (U)					
Mean	11.64	2.7	5.278	17.37	13.01	14.28	1.794
Std. Dev.	2.977	1.675	1.735	2.229	3.166	3.353	0.6821
Upper Lim.	14.52	4.2	6.953	19.52	16.07	17.51	3
Lower Lim.	8.77	1.25	3.603	15.21	9.954	11.04	1.15

## 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: Lithium Analysis Run 5/2/2022 12:05 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

Constituent: Lithium (ug/L) Analysis Run 5/2/2022 12:07 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-306A	MW-307	MW-308	MW-309	MW-309A	MW-310	MW-310A
4/23/2019		10	29				
10/28/2019		15	31				
10/29/2019				15		15	
1/9/2020				15		14	
4/27/2020				13		11	
5/27/2020		8.3 (J)	35				
9/15/2020	4.1 (J)				4.1 (J)		3.2 (J)
10/19/2020		16	47				
10/20/2020	6.3 (J)						
10/21/2020				19	5.9 (J)	18	5.3 (J)
4/26/2021		9.4 (J)	39				
4/27/2021	5.8 (J)			15	5.8 (J)	15	4.9 (J)
7/14/2021			47				
10/20/2021	5.3 (J)						
10/21/2021		10	39	15			
10/22/2021					4.9 (J)	14	3.5 (J)
2/22/2022			37				
Mean	5.375	11.45	38	15.33	5.175	14.5	4.225
Std. Dev.	0.943	3.214	6.59	1.966	0.8461	2.258	1.031
Upper Lim.	7.516	16.04	44.99	19	7.096	17.6	6.565
Lower Lim.	3.234	7.686	31.01	13	3.254	11.4	1.885

## E3 LCL Evaluation – April 2022 Event

# Confidence Interval

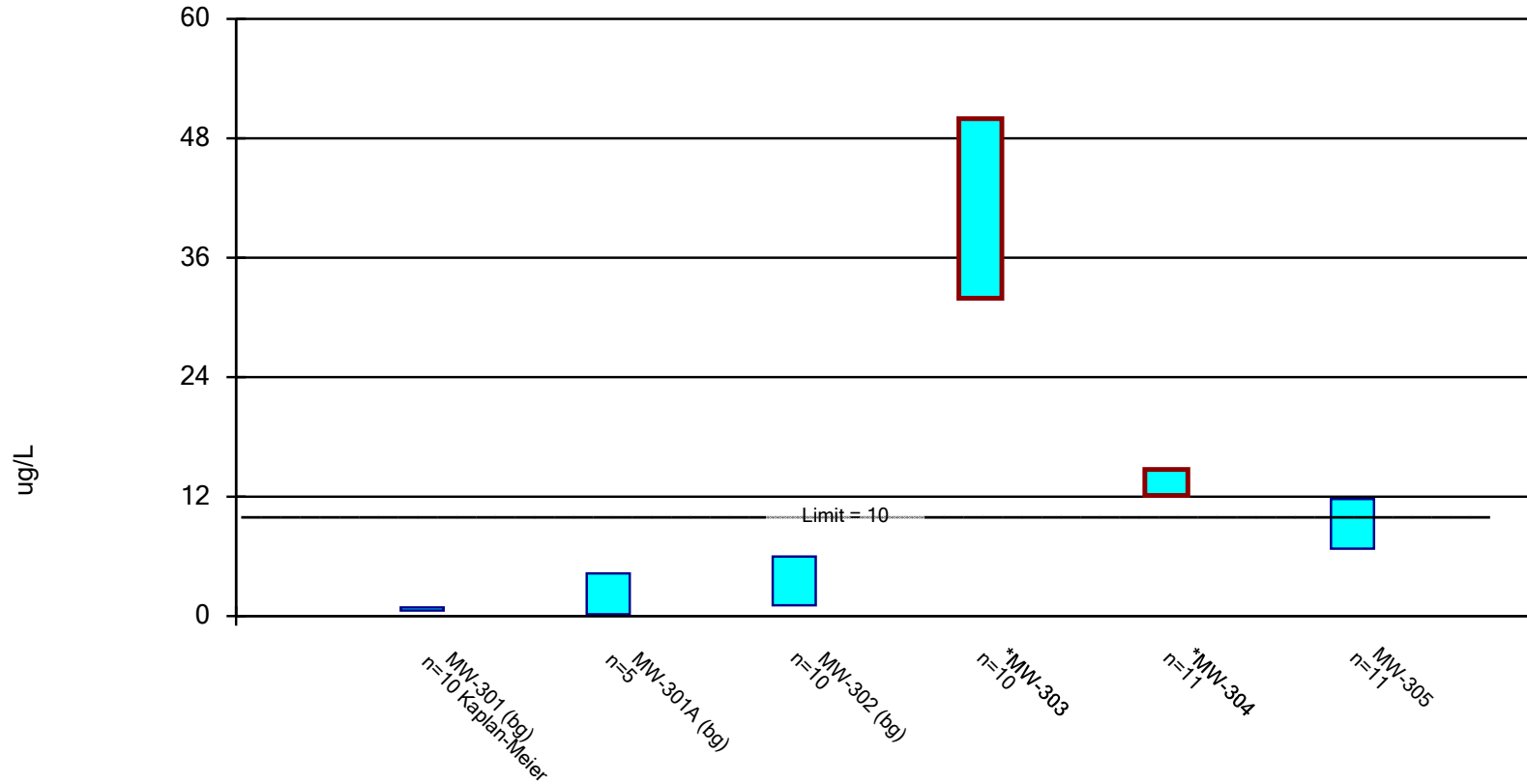
Prairie Creek Generating Station    Client: SCS Engineers    Data: PCS - Chem-export-Dec2020    Printed 6/23/2022, 3:40 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (ug/L)	MW-301 (bg)	0.8608	0.5552	10	No	10	50	Kapla...	No	0.01	Param.
Arsenic (ug/L)	MW-301A (bg)	4.278	0.1897	10	No	5	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-302 (bg)	5.98	1.078	10	No	10	0	None	No	0.01	Param.
<b>Arsenic (ug/L)</b>	<b>MW-303</b>	<b>49.97</b>	<b>31.93</b>	<b>10</b>	<b>Yes</b>	<b>10</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>Arsenic (ug/L)</b>	<b>MW-304</b>	<b>14.72</b>	<b>12.11</b>	<b>10</b>	<b>Yes</b>	<b>11</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Arsenic (ug/L)	MW-305	11.76	6.765	10	No	11	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-306	1.436	0.668	10	No	10	10	None	No	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-307	7.426	4.26	10	No	7	0	None	No	0.01	Param.
<b>Arsenic (ug/L)</b>	<b>MW-308</b>	<b>59.83</b>	<b>43.32</b>	<b>10</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>Arsenic (ug/L)</b>	<b>MW-309</b>	<b>127.4</b>	<b>51.99</b>	<b>10</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Arsenic (ug/L)	MW-309A	0.9771	0.7429	10	No	5	40	Kapla...	No	0.01	Param.
<b>Arsenic (ug/L)</b>	<b>MW-310</b>	<b>33.2</b>	<b>20.52</b>	<b>10</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Arsenic (ug/L)	MW-310A	0.88	0.75	10	No	5	100	None	No	0.031	NP (NDs)
Lithium (ug/L)	MW-301 (bg)	15.11	9.255	40	No	10	0	None	No	0.01	Param.
Lithium (ug/L)	MW-301A (bg)	4.2	1.25	40	No	5	60	None	No	0.031	NP (NDs)
Lithium (ug/L)	MW-302 (bg)	6.711	3.789	40	No	10	10	None	No	0.01	Param.
Lithium (ug/L)	MW-303	19.31	15.55	40	No	10	0	None	No	0.01	Param.
Lithium (ug/L)	MW-304	16.1	10.52	40	No	10	0	None	No	0.01	Param.
Lithium (ug/L)	MW-305	17.87	11.63	40	No	10	0	None	No	0.01	Param.
Lithium (ug/L)	MW-306	3	1.25	40	No	10	80	None	No	0.011	NP (NDs)
Lithium (ug/L)	MW-306A	8.135	3.585	40	No	5	0	None	No	0.01	Param.
Lithium (ug/L)	MW-307	15.02	8.035	40	No	7	0	None	No	0.01	Param.
Lithium (ug/L)	MW-308	46.43	32.24	40	No	9	0	None	No	0.01	Param.
Lithium (ug/L)	MW-309	17.55	13.41	40	No	7	0	None	ln(x)	0.01	Param.
Lithium (ug/L)	MW-309A	8.531	3.109	40	No	5	0	None	No	0.01	Param.
Lithium (ug/L)	MW-310	17.91	12.09	40	No	7	0	None	No	0.01	Param.
Lithium (ug/L)	MW-310A	7.025	2.375	40	No	5	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-301 (bg)	0.65	0.35	100	No	10	80	None	No	0.011	NP (NDs)
Molybdenum (ug/L)	MW-301A (bg)	3.1	2.1	100	No	5	0	None	No	0.031	NP (normality)
Molybdenum (ug/L)	MW-302 (bg)	0.78	0.55	100	No	10	70	None	No	0.011	NP (NDs)
Molybdenum (ug/L)	MW-303	20.6	11.38	100	No	10	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-304	29.19	22.97	100	No	10	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-305	59.14	26.44	100	No	10	0	None	No	0.01	Param.
<b>Molybdenum (ug/L)</b>	<b>MW-306</b>	<b>254.5</b>	<b>217.5</b>	<b>100</b>	<b>Yes</b>	<b>10</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Molybdenum (ug/L)	MW-306A	19.49	8.354	100	No	5	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-307	8.318	5.025	100	No	7	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-308	67.75	53.15	100	No	7	0	None	ln(x)	0.01	Param.
Molybdenum (ug/L)	MW-309	22.24	16.61	100	No	7	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-309A	12.16	6.525	100	No	5	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-310	66.21	41.79	100	No	7	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-310A	24.02	17.58	100	No	5	0	None	No	0.01	Param.



### Parametric Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 6/23/2022 3:35 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

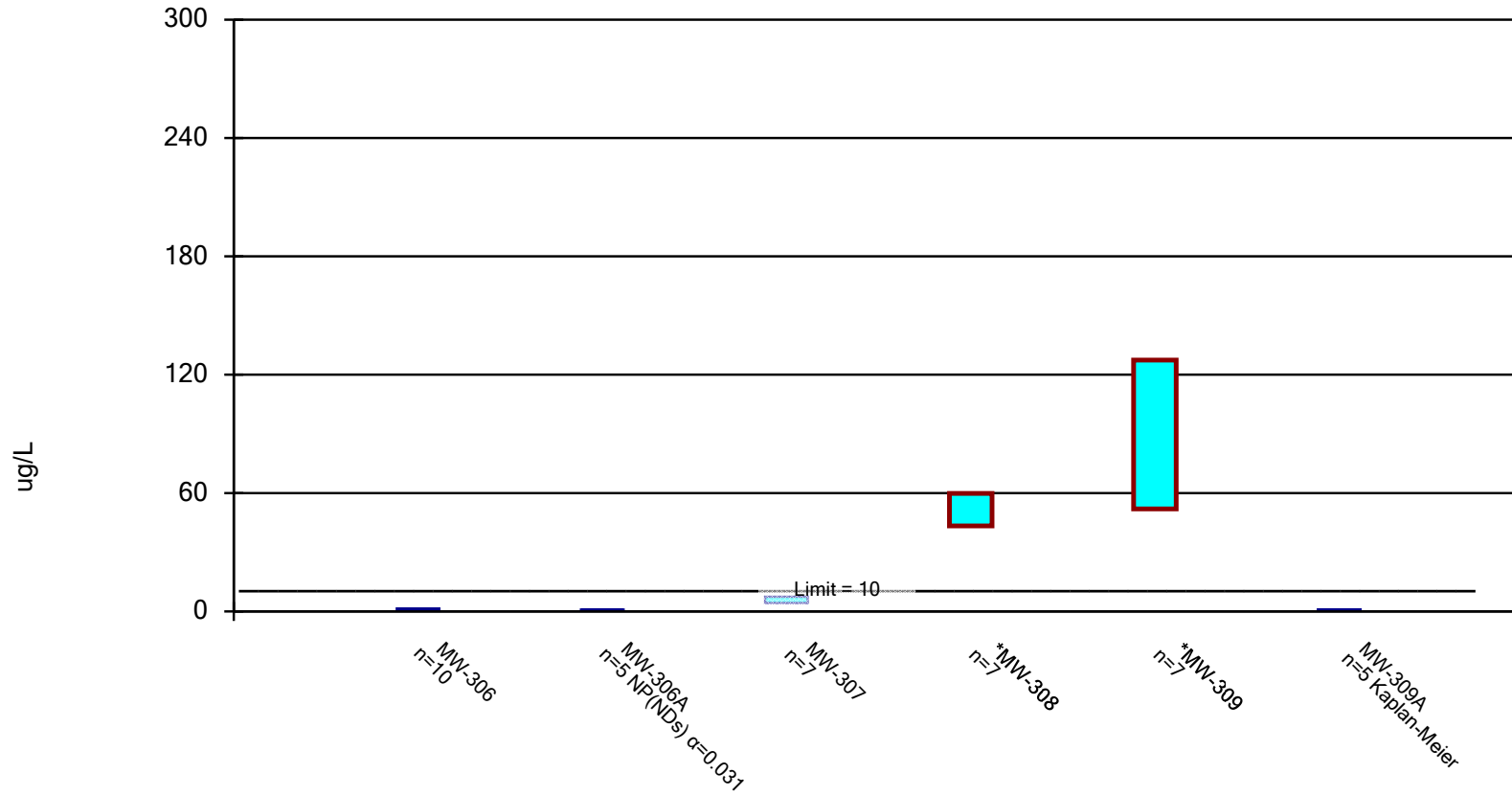
Constituent: Arsenic (ug/L) Analysis Run 6/23/2022 3:40 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-301A (bg)	MW-302 (bg)	MW-303	MW-304	MW-305
5/8/2018	0.54 (J)		0.79 (J)	26.9	15	14.3
8/6/2018	1.1		9	35.1	12.3	13
10/9/2018	0.67 (J)		4.5	44.5	14.4	6.6
3/11/2019					12.9	11.6
4/22/2019	<0.75 (U)		2.1	26	11	5.9
10/28/2019	<0.75 (U)		7			
10/29/2019				52	14	7.3
4/27/2020	<0.88 (U)		4.4	48	11	6.2
9/15/2020		3.7				
10/19/2020	<0.88 (U)		2			
10/20/2020				56	14	9.8
10/21/2020		1.9 (J)				
4/27/2021	<0.75 (U)		3.4	39	13	7.9
4/28/2021		0.87 (J)				
10/20/2021						12
10/21/2021	0.88 (J)		0.9 (J)	46	16	
10/22/2021		1.4 (J)				
4/25/2022	0.8 (J)		1.2 (J)			
4/26/2022				36	14	7.3
4/29/2022		3.3				
Mean	0.8	2.234	3.529	40.95	13.42	9.264
Std. Dev.	0.1495	1.22	2.747	10.11	1.566	2.999
Upper Lim.	0.8608	4.278	5.98	49.97	14.72	11.76
Lower Lim.	0.5552	0.1897	1.078	31.93	12.11	6.765

## 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 6/23/2022 3:35 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

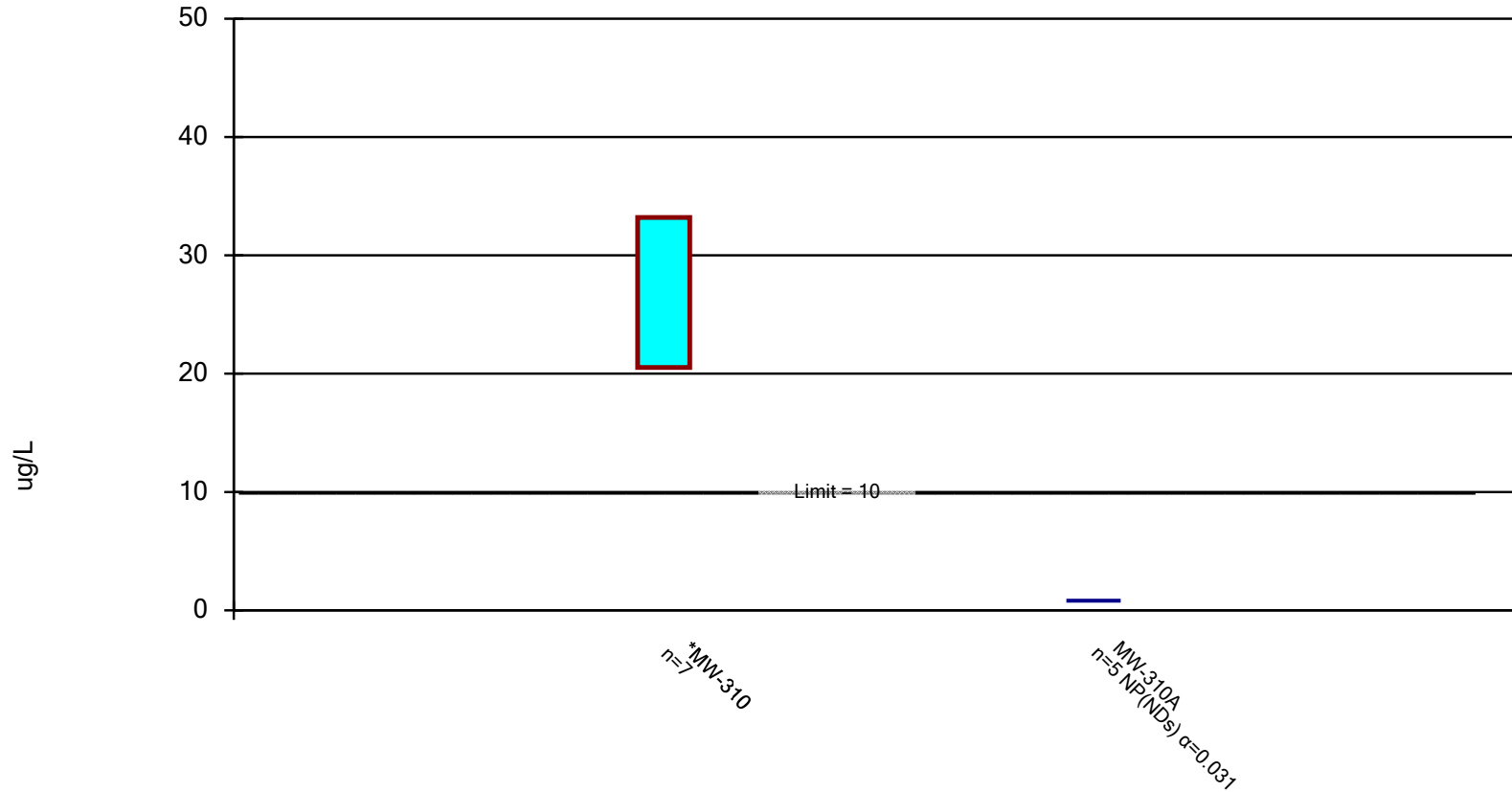
# Confidence Interval

Constituent: Arsenic (ug/L) Analysis Run 6/23/2022 3:40 PM View: PCS  
 Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A
5/8/2018	0.58 (J)					
8/6/2018	0.7 (J)					
10/9/2018	0.72 (J)					
4/22/2019	1.9 (J)					
4/23/2019			3.8	45		
10/28/2019			7.4	63		
10/29/2019	1.6 (J)				140	
1/9/2020					110	
4/27/2020	1.3 (J)				75	
5/27/2020			6.1	58		
9/15/2020		<0.88 (U)				<0.88 (U)
10/19/2020			6.7	50		
10/20/2020	1.1 (J)	<0.88 (U)				
10/21/2020					89	<0.88 (U)
4/26/2021			6.5	53		
4/27/2021	1 (J)	<0.75 (U)			100	0.98 (J)
10/20/2021	0.87 (J)	<0.75 (U)				
10/21/2021			6.2	48	75	
10/22/2021						0.87 (J)
4/25/2022			4.2	44		
4/26/2022	<0.75 (U)	<0.75 (U)				0.79 (J)
4/27/2022					39	
Mean	1.052	0.802	5.843	51.57	89.71	0.88
Std. Dev.	0.4304	0.0712	1.333	6.949	31.76	0.06745
Upper Lim.	1.436	0.88	7.426	59.83	127.4	0.9771
Lower Lim.	0.668	0.75	4.26	43.32	51.99	0.7429

## 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 6/23/2022 3:35 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

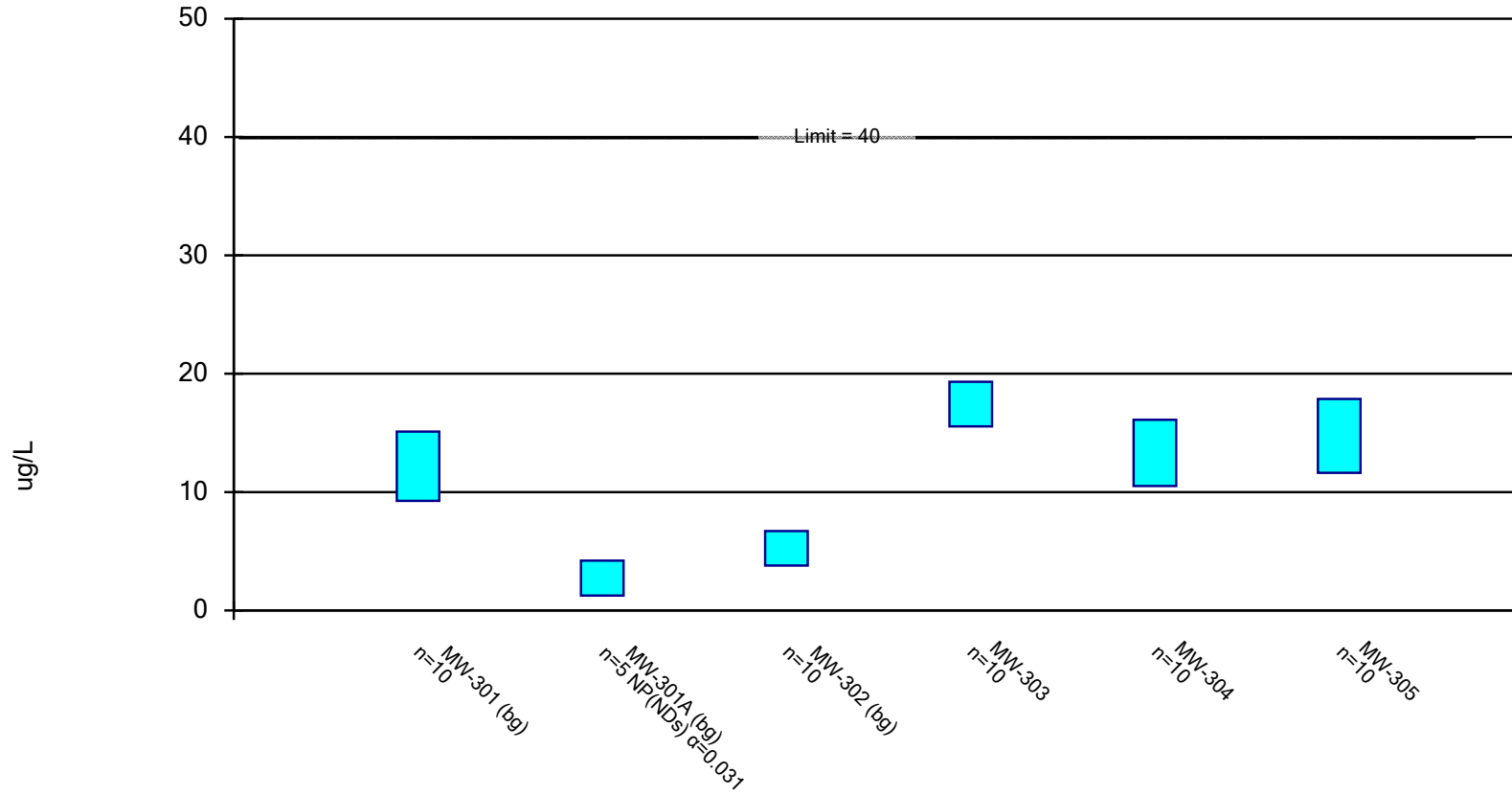
Constituent: Arsenic (ug/L) Analysis Run 6/23/2022 3:40 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-310	MW-310A
10/29/2019	31	
1/9/2020	28	
4/27/2020	23	
9/15/2020		<0.88 (U)
10/21/2020	36	<0.88 (U)
4/27/2021	25	<0.75 (U)
10/22/2021	25	<0.75 (U)
4/27/2022	20	<0.75 (U)
Mean	26.86	0.802
Std. Dev.	5.336	0.0712
Upper Lim.	33.2	0.88
Lower Lim.	20.52	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: Lithium Analysis Run 6/23/2022 3:35 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

Constituent: Lithium (ug/L) Analysis Run 6/23/2022 3:40 PM View: PCS

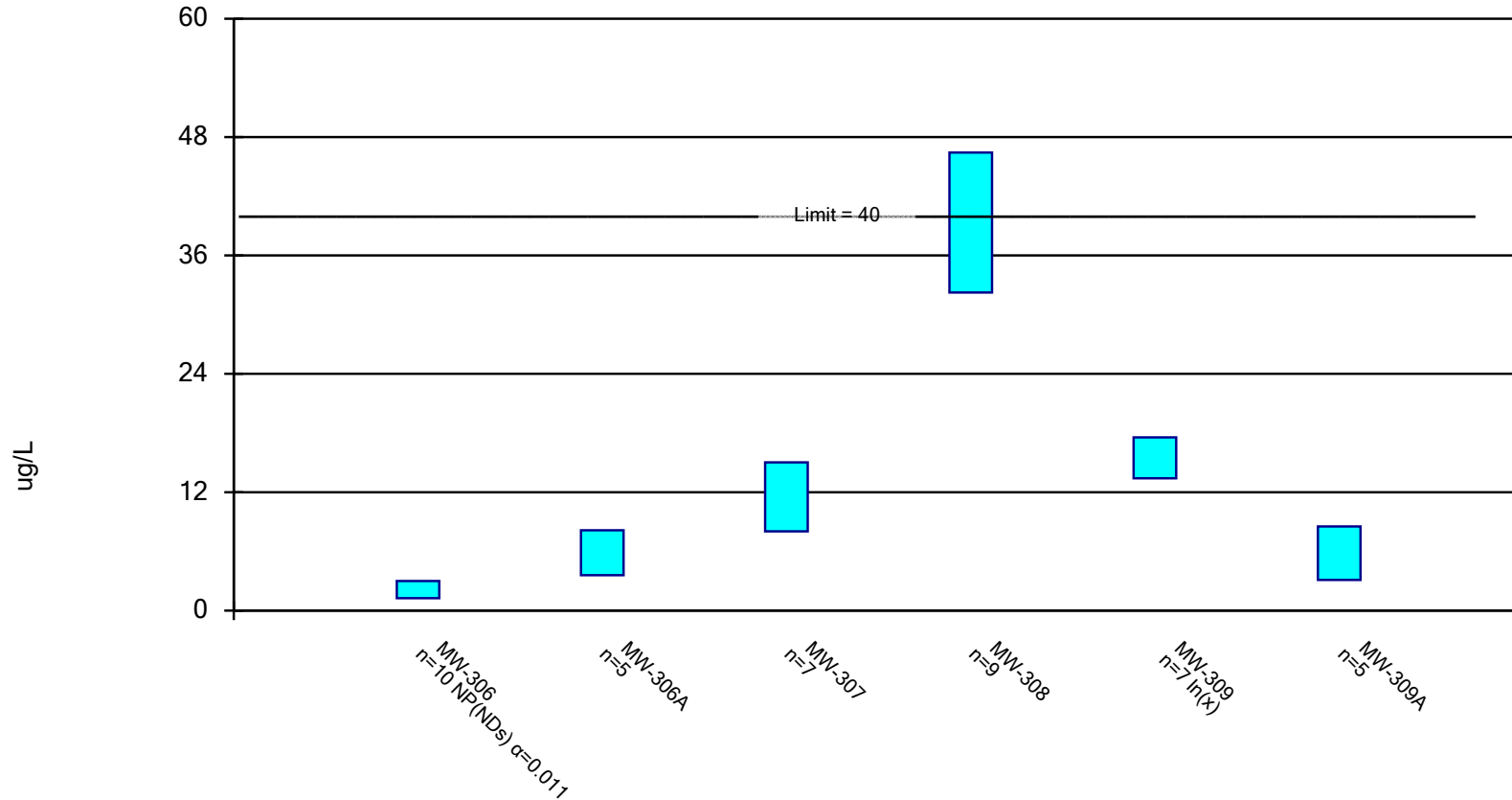
Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-301A (bg)	MW-302 (bg)	MW-303	MW-304	MW-305
5/8/2018	13.6		5.4 (J)	19	10.8	10.7
8/6/2018	5.4 (J)		<4.6 (U)	15.4	6.9 (J)	9.5 (J)
10/9/2018	13.3		4.6 (J)	19.9	13.4	13.3
4/22/2019	8.5 (J)		4.7 (J)	17	17	15
10/28/2019	12		5.3 (J)			
10/29/2019				17	13	14
4/27/2020	11		3.8 (J)	14	11	12
9/15/2020		4.2 (J)				
10/19/2020	15		8.2 (J)			
10/20/2020				21	17	20
10/21/2020		4.1 (J)				
4/27/2021	13		6.3 (J)	16	14	17
4/28/2021		<2.5 (U)				
10/20/2021						17
10/21/2021	13		6.9 (J)	17	14	
10/22/2021		<2.5 (U)				
4/25/2022	17		5 (J)			
4/26/2022				18	16	19
4/29/2022		<2.5 (U)				
Mean	12.18	2.41	5.25	17.43	13.31	14.75
Std. Dev.	3.278	1.589	1.638	2.111	3.131	3.496
Upper Lim.	15.11	4.2	6.711	19.31	16.1	17.87
Lower Lim.	9.255	1.25	3.789	15.55	10.52	11.63



## 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: Lithium Analysis Run 6/23/2022 3:35 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

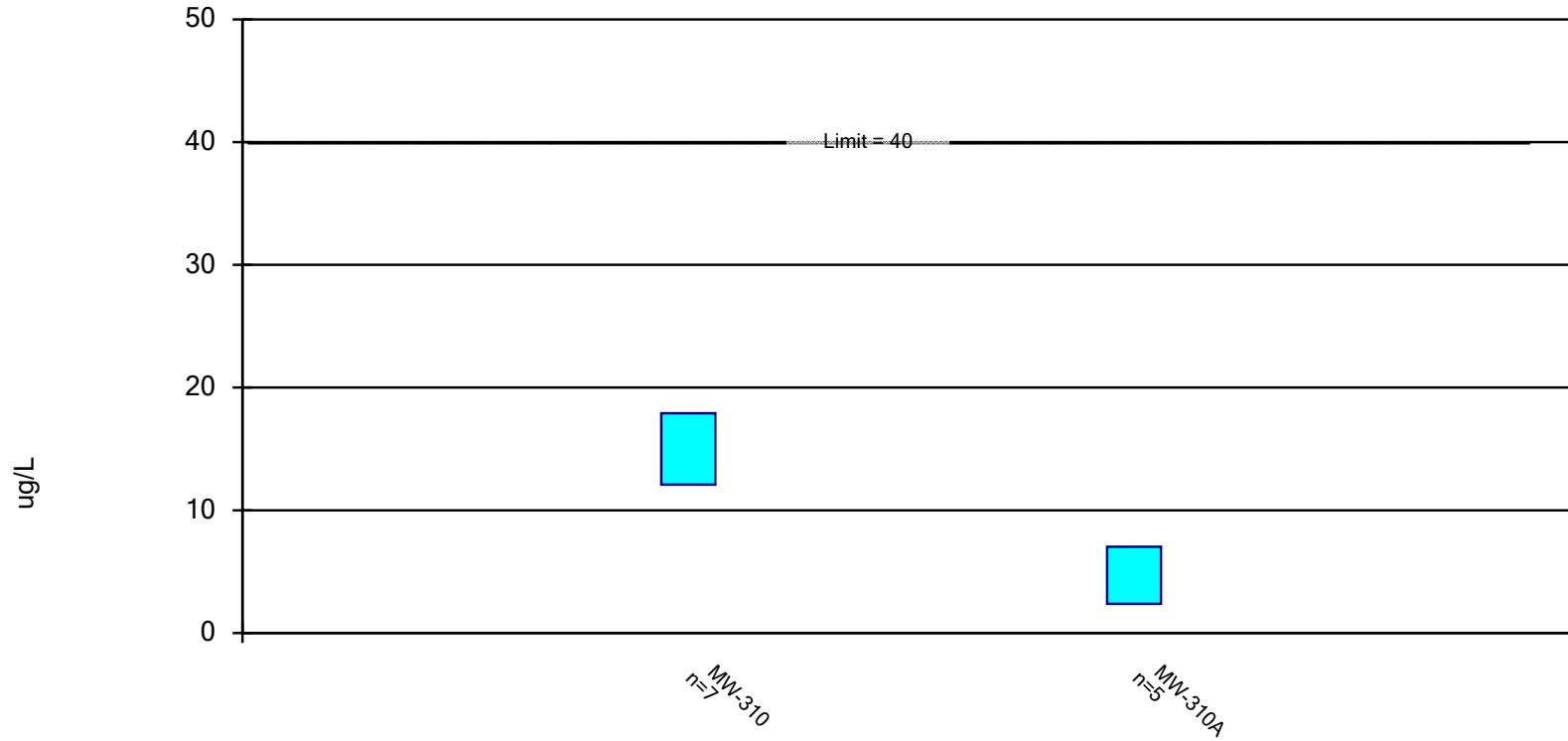
# Confidence Interval

Constituent: Lithium (ug/L) Analysis Run 6/23/2022 3:40 PM View: PCS  
 Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A
5/8/2018	<4.6 (U)					
8/6/2018	<4.6 (U)					
10/9/2018	<4.6 (U)					
4/22/2019	3 (J)					
4/23/2019			10	29		
10/28/2019			15	31		
10/29/2019	<2.7 (U)				15	
1/9/2020					15	
4/27/2020	<2.3 (U)				13	
5/27/2020			8.3 (J)	35		
9/15/2020		4.1 (J)				4.1 (J)
10/19/2020			16	47		
10/20/2020	<2.5 (U)	6.3 (J)				
10/21/2020					19	5.9 (J)
4/26/2021			9.4 (J)	39		
4/27/2021	<2.5 (U)	5.8 (J)			15	5.8 (J)
7/14/2021				47		
10/20/2021	<2.5 (U)	5.3 (J)				
10/21/2021			10	39	15	
10/22/2021						4.9 (J)
2/22/2022				37		
4/25/2022			12	50		
4/26/2022	3.3 (J)	7.8 (J)				8.4 (J)
4/27/2022					16	
Mean	1.945	5.86	11.53	39.33	15.43	5.82
Std. Dev.	0.8002	1.358	2.941	7.348	1.813	1.618
Upper Lim.	3	8.135	15.02	46.43	17.55	8.531
Lower Lim.	1.25	3.585	8.035	32.24	13.41	3.109

### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 6/23/2022 3:35 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

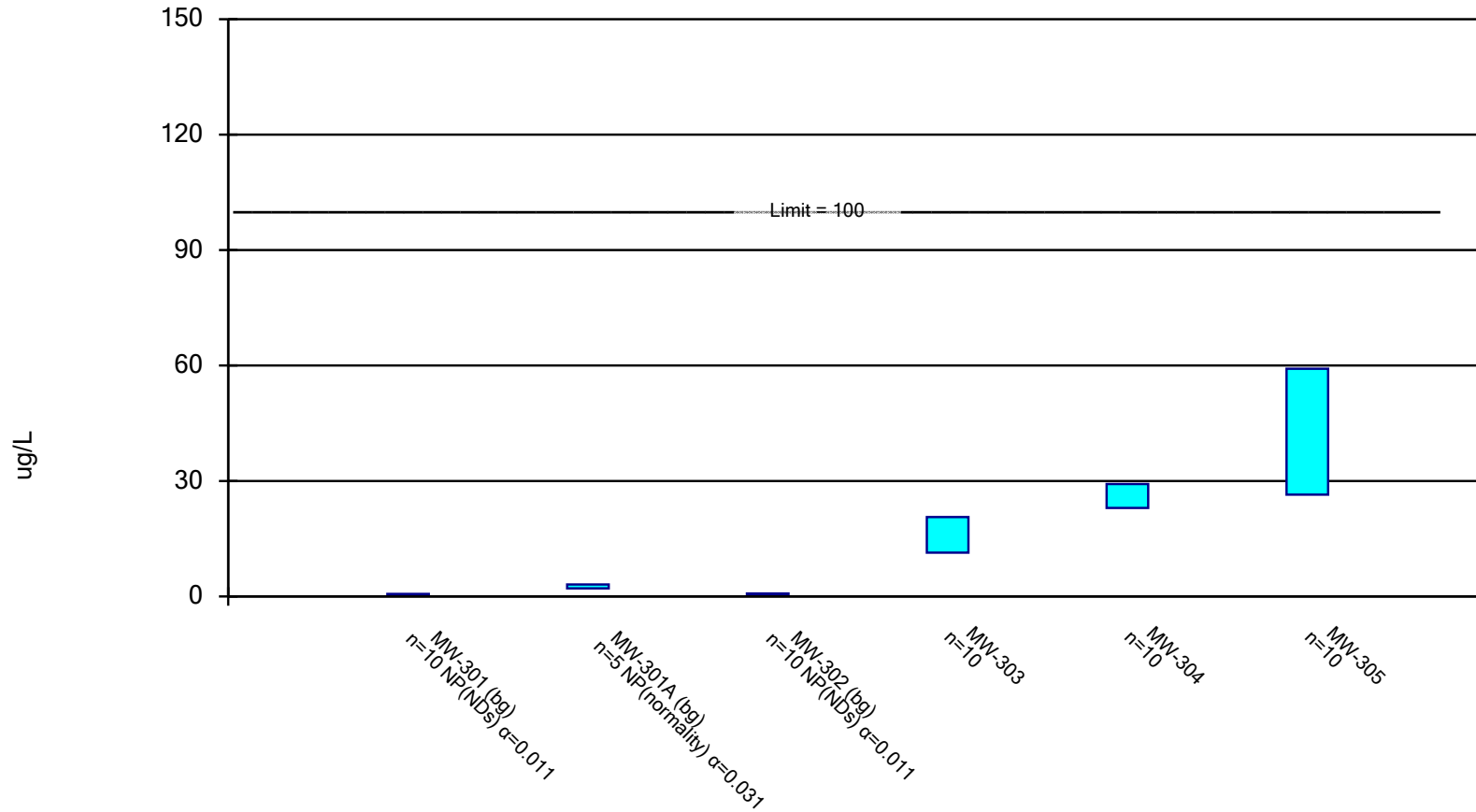
Constituent: Lithium (ug/L) Analysis Run 6/23/2022 3:40 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-310	MW-310A
10/29/2019	15	
1/9/2020	14	
4/27/2020	11	
9/15/2020		3.2 (J)
10/21/2020	18	5.3 (J)
4/27/2021	15	4.9 (J)
10/22/2021	14	3.5 (J)
4/27/2022	18	6.6 (J)
Mean	15	4.7
Std. Dev.	2.449	1.387
Upper Lim.	17.91	7.025
Lower Lim.	12.09	2.375

## 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 6/23/2022 3:35 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

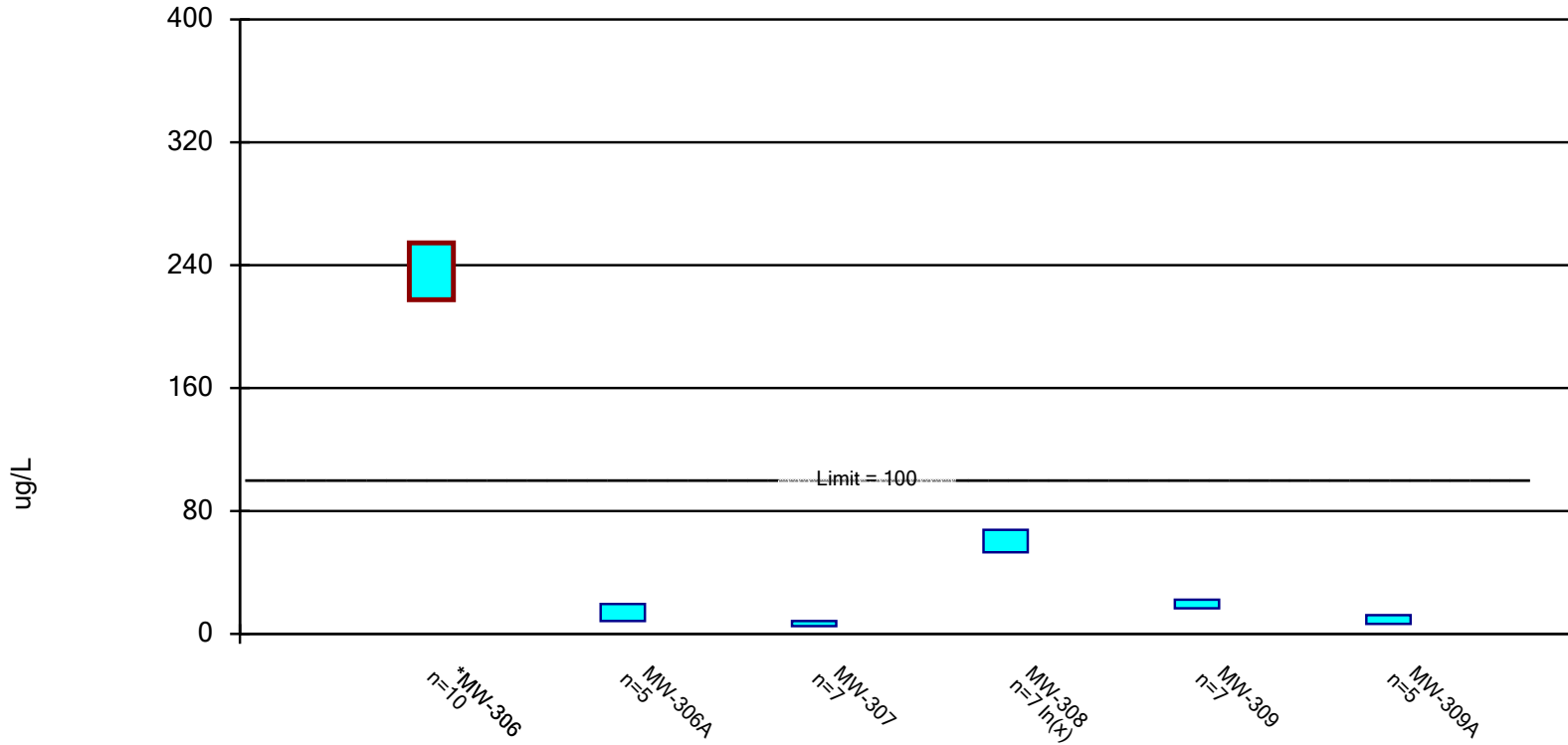
# Confidence Interval

Constituent: Molybdenum (ug/L)    Analysis Run 6/23/2022 3:40 PM    View: PCS  
 Prairie Creek Generating Station    Client: SCS Engineers    Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-301A (bg)	MW-302 (bg)	MW-303	MW-304	MW-305
5/8/2018	0.35 (J)		0.99 (J)	23.1	19.8	27.9
8/6/2018	0.44 (J)		0.78 (J)	20.7	25.4	29
10/9/2018	<0.57 (U)		0.67 (J)	21.7	27.6	32
4/22/2019	<1.1 (U)		<1.1 (U)	12	23	26
10/28/2019	<1.1 (U)		<1.1 (U)			
10/29/2019				20	31	32
4/27/2020	<1.1 (U)		<1.1 (U)	8.4	26	38
9/15/2020		2.1				
10/19/2020	<1.1 (U)		<1.1 (U)			
10/20/2020				17	28	58
10/21/2020		3.1				
4/27/2021	<1.3 (U)		<1.3 (U)	12	25	54
4/28/2021		3.1				
10/20/2021						84
10/21/2021	<1.3 (U)		<1.3 (U)	14	31	
10/22/2021		3.1				
4/25/2022	<1.2 (U)		<1.2 (U)			
4/26/2022				11	24	47
4/29/2022		2.5				
Mean	0.5175	2.78	0.654	15.99	26.08	42.79
Std. Dev.	0.1221	0.4604	0.1395	5.172	3.485	18.33
Upper Lim.	0.65	3.1	0.78	20.6	29.19	59.14
Lower Lim.	0.35	2.1	0.55	11.38	22.97	26.44

### Parametric Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 6/23/2022 3:35 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

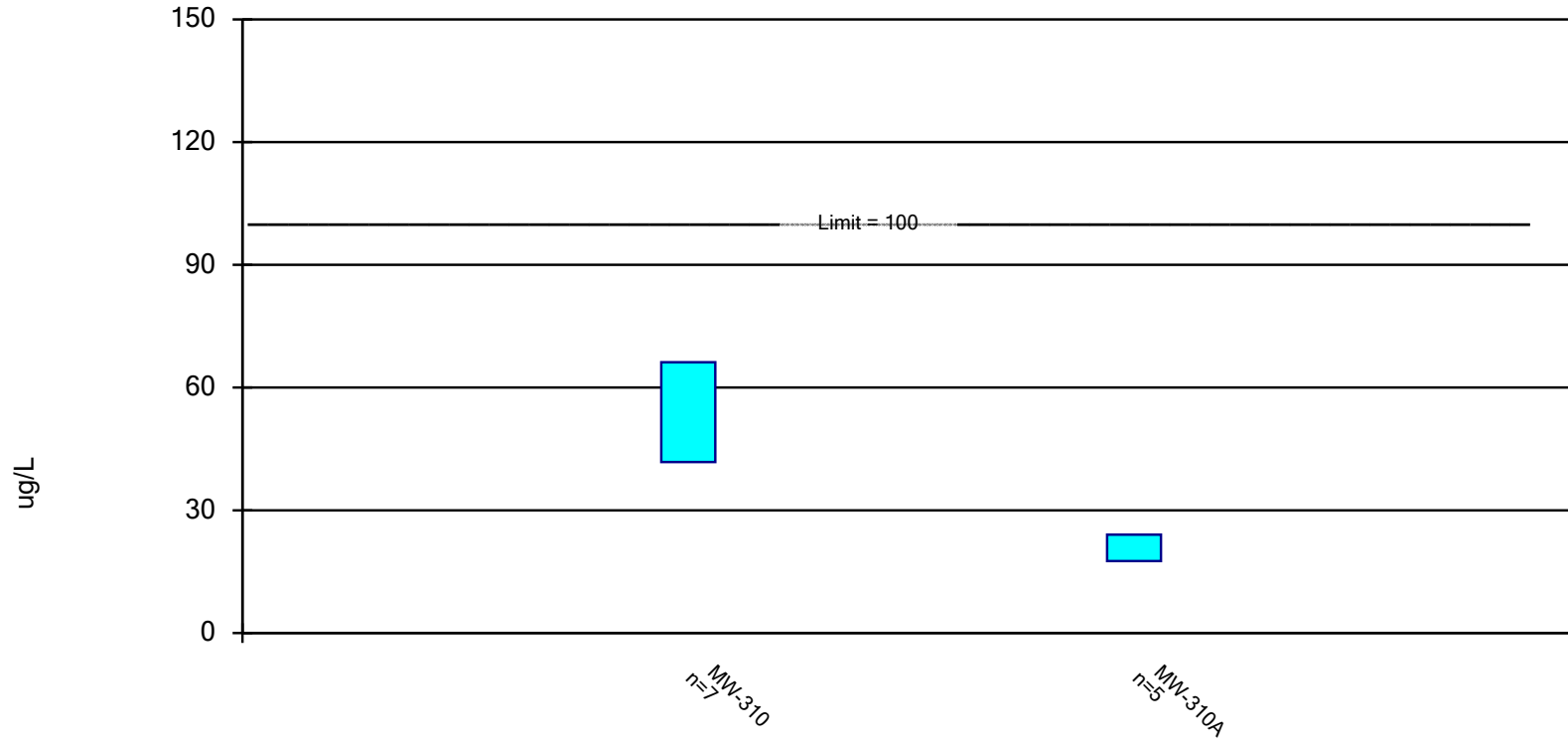
Constituent: Molybdenum (ug/L)    Analysis Run 6/23/2022 3:40 PM    View: PCS  
 Prairie Creek Generating Station    Client: SCS Engineers    Data: PCS - Chem-export-Dec2020

	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A
5/8/2018	271					
8/6/2018	234					
10/9/2018	235					
4/22/2019	200					
4/23/2019			5.8	58		
10/28/2019			5.2	58		
10/29/2019	230				19	
1/9/2020					18	
4/27/2020	250				19	
5/27/2020			7	64		
9/15/2020		8.6				8.5
10/19/2020			5.2	58		
10/20/2020	260	13				
10/21/2020					21	7.1
4/26/2021			8.5	53		
4/27/2021	240	16			17	9.1
10/20/2021	220	15				
10/21/2021			6.6	58	24	
10/22/2021						11
4/25/2022			8.4	73		
4/26/2022	220	17				11
4/27/2022					18	
Mean	236	13.92	6.671	60.29	19.43	9.34
Std. Dev.	20.71	3.321	1.386	6.448	2.37	1.68
Upper Lim.	254.5	19.49	8.318	67.75	22.24	12.16
Lower Lim.	217.5	8.354	5.025	53.15	16.61	6.525



### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 6/23/2022 3:35 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

# Confidence Interval

Constituent: Molybdenum (ug/L) Analysis Run 6/23/2022 3:40 PM View: PCS

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-310	MW-310A
10/29/2019	60	
1/9/2020	59	
4/27/2020	55	
9/15/2020		20
10/21/2020	71	21
4/27/2021	43	24
10/22/2021	45	20
4/27/2022	45	19
Mean	54	20.8
Std. Dev.	10.28	1.924
Upper Lim.	66.21	24.02
Lower Lim.	41.79	17.58