# Semiannual Progress Report
# Selection of Remedy –
# Prairie Creek Generating Station

Prairie Creek Generating Station
Cedar Rapids, Iowa

Prepared for:

Alliant Energy

SCS ENGINEERS

25220084.00 | September 13, 2024

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

Table of Contents

Section Page



Tables



Figures



I:\25220084.00\Deliverables\2024 Semiannual - Selection of Remedy\2024 September Semiannual SOR Report\240913_PCS_Semiannual - Remedy Selection_Draft.docx

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# 1.0 INTRODUCTION AND PURPOSE

The Semiannual Progress Report for remedy selection at the Interstate Power and Light Company (IPL) Prairie Creek Generating Station (PCS) was prepared to comply with U.S. Environmental Protection Agency (U.S. EPA) regulations regarding the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities [40 CFR 257.50-107], or the "CCR Rule" (Rule). Specifically, the selection of remedy process was initiated to fulfill the requirements of 40 CFR 257.97.

## 1.1 BACKGROUND

The Assessment of Corrective Measures (ACM) for the PCS Closure Area was completed on September 12, 2019. The ACM was completed in response to the detection of molybdenum and arsenic at a statistically significant level (SSL) above the Groundwater Protection Standards (GPS) in groundwater samples from downgradient monitoring wells. Arsenic concentrations exceeded the GPS at MW-303 and MW-304, and molybdenum concentrations exceeded the GPS at MW-306. An addendum to the ACM was completed on August 9, 2021, to assess additional corrective measures appropriate for these detections. Additional data collection for a second addendum to the ACM was conducted during this reporting period.

This Semiannual Progress Report summarizes data collected and remedy evaluation progress made since the September 2019 ACM and August 2021 ACM Addendum No. 1, and outlines planned future activities to complete the selection of remedy process. This semiannual progress report covers the 6-month period of March 2024 through August 2024.

## 1.2 SITE INFORMATION AND MAPS

PCS is located to the south of Prairie Creek and to the west of the Cedar River, on the south side of the City of Cedar Rapids in Linn County, Iowa (**Figure 1**). The address of the generating station is 3300 C Street Southwest, Cedar Rapids, Iowa. In addition to the generating station, the property also contains a closure area located within the original footprint of the CCR impoundments and a coal stockpile.

The groundwater monitoring system at PCS monitors the Closure Area, which was created when the following CCR units were closed:

- PCS Pond 1
- PCS Pond 2
- PCS Pond 3
- PCS Pond 4
- PCS Pond 5
- PCS Pond 6
- PCS Pond 7
- PCS Discharge Pond (Pond 8)
- PCS Beneficial Use Storage Area
- PCS Bottom Ash Pile

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

Groundwater flow at the site is generally to the north. The approximate depth to the water table for wells located on plant property varies from 10 to 16 feet below ground surface (bgs). The approximate depth to the water table for wells located north of the plant property varies from 0 to 11 feet bgs. These ranges in depth to groundwater are due to topographic variations across the facility and seasonal fluctuations in the groundwater surface. The downgradient area where MW-303 through MW-306, the MW-309/309A nest, and the MW-310/310A nest are located is prone to flooding when water levels in Prairie Creek and the Cedar River are high.

# 2.0 SUMMARY OF WORK COMPLETED

Work completed to support remedy selection for the PCS CCR units is summarized in Table 1. Activities completed within the 6-month period covered by this semiannual report are discussed in more detail below.

## 2.1 MONITORING NETWORK CHANGES

No changes were made to the certified groundwater monitoring system during the reporting period of this semiannual SOR update.

## 2.2 GROUNDWATER AND SURFACE WATER MONITORING

Groundwater samples were collected during the April 18, 2024 event that was part of the routine semiannual assessment monitoring program. The wells sampled included the eight wells in the original monitoring system (MW-301 through MW-308), the six additional delineation wells and piezometers (MW-301A, MW-306A, MW-309, MW-309A, MW-310, and MW-310A), and supplemental background well MW-312. Results are summarized in a draft Assessment Groundwater Monitoring Results – April 2024 letter submitted in August 2024.

A summary of groundwater samples collected from wells in the groundwater monitoring system since the completion of the September 2019 ACM is provided in Table 2.

## 2.3 STATISTICAL EVALUATION

The April 2024 sampling results obtained during the period covered by this update are discussed in the April 2024 results letter (August 19, 2024) and will be included in the 2024 Annual Groundwater Monitoring and Corrective Action Report, due on January 31, 2025. Based on the April 2024 monitoring results, the parameters at an SSL above the GPS include arsenic at compliance wells MW-303, MW-304, and MW-308, and molybdenum at compliance well MW-306. Arsenic was above the GPS at delineation wells MW-309 and MW-310. Lithium was detected above the GPS at MW-308 but was not identified as an SSL. A lower confidence limit (LCL) evaluation was performed for the delineation wells, and arsenic exceeds the LCL and GPS for wells MW-309 and MW-310.

## 2.4 EVALUATION OF CORRECTIVE MEASURE ALTERNATIVES

A qualitative assessment of potential Corrective Measure Alternatives using the selection criteria in 40 CFR 257.97(b) and (c) was provided in the September 2019 ACM and was revised in the August 2021 ACM Addendum No. 1. Updates to the assessment and development of the evaluation of corrective measure alternatives discussed in the ACM and ACM Addendum No. 1 will be completed in the future based on updates to the conceptual site model, delineation of the nature and extent of impacts, and collection of additional data relevant to remedy selection, as discussed below. A second addendum to the ACM is anticipated for 2024 following investigation activities.

Activities completed during this reporting period to support evaluation of corrective measure alternatives included evaluation of leach test data and geochemical modeling, along with drafting a corresponding summary memo. In a previous reporting period, two complete and one incomplete borings were drilled to collect CCR materials for leach testing and to locate the CCR and native soil interface. In the current reporting period, the leach testing results, in combination with available step-pumping test data and geochemical modeling, were used to evaluate the potential impacts of the remaining CCR in the PCS Closure Area on the effectiveness of corrective action alternatives. The

geochemical modeling was conducted in PHREEQC software, which is an open-source modeling software developed and maintained by the U.S. Geological Survey that is designed to simulate a wide array of geochemical calculations, including mineral saturation indices and aqueous component speciation. Reporting of these activities in support of the upcoming addendum to the ACM is anticipated for the next semiannual reporting period. A memo that details the results and evaluation of the leach testing was drafted during the reporting period and will be finalized for inclusion in the planned ACM addendum in the upcoming reporting period.

Investigation activities were continued from previous reporting periods. To build on the results of the MW-306 step-drawdown pumping test, a larger-scale pumping test was designed. This larger scale test included the installation and use of a 6-inch pumping well and two 2-inch observation wells near MW-306. Preparation activities for the larger-scale pumping test included obtaining well permits, a floodplain permit, and a right-of-way access permit from the City of Cedar Rapids.

The initial well installation mobilization for the larger-scale pumping test was postponed due to the issue of the revised 40-foot setback distance requirement from the city sewer for the new monitoring wells. Discussions were held with the City to obtain a variance from this requirement that was granted for a 15-foot setback requirement. The extraction well and monitoring well layout were redesigned to account for the 15-foot sewer setback, as well as topographic features that limit drill rig access and positioning.

On June 26, 2024, the drilling team mobilized to the site and initiated installation of the test well; however, upon drilling the first well, 4 to 5 feet of municipal solid waste (MSW) was encountered. Drilling was terminated and the drilling team was demobilized. Note that MSW was not encountered on IPL property and not related to historical IPL activities.

Due to the presence of the MSW in the vicinity of MW-306, the planned pumping well and observation wells were not installed, and the larger-scale pumping test is currently postponed. Remedial alternatives for the molybdenum SSLs identified at MW-306 will be re-evaluated due to the potential to mobilize MSW landfill impacted groundwater to the pumping well.

The CCR samples collected during October 2023 drilling activities were submitted to the laboratory for leach testing. The leach testing results, in combination with available pumping test data and geochemical modeling, were used to evaluate the potential impacts of the remaining CCR in the PCS Closure Area on the effectiveness of corrective action alternatives. The geochemical modeling was conducted in PHREEQC software, which is an open-source modeling software developed and maintained by the U.S. Geological Survey that is designed to simulate a wide array of geochemical calculations, including mineral saturation indices and aqueous component speciation. Reporting of these activities in support of the second addendum to the ACM is anticipated for the next semi-annual reporting period. A memo that details the results and evaluation of the leach testing was drafted during the reporting period and will be finalized in September 2024.

The aquifer pumping test and well installation is postponed until additional information is obtained about the extent and impact of MSW or impact to groundwater from the MSW is understood. These efforts support additional work planned for the next semiannual reporting period and the corrective measures assessment.

# 3.0 PLANNED ACTIVITIES

Planned activities related to the remedy selection process include the following:

- Continue semiannual assessment monitoring in October 2024.
- Complete statistical evaluation and determination of SSLs exceeding the GPS and prepare groundwater monitoring results letters for the October 2024 monitoring event.
- Finalize results of the CCR boring evaluation, laboratory leach test results, and geochemical modeling for the next addendum to the ACM.
- Install a 6-inch-diameter well and two, 2-inch-diameter monitoring wells near well MW-306, if feasible, after the presence of MSW or MSW-impacted groundwater in the vicinity of well MW-306 is assessed.
- Perform a pumping test on the 6-inch-diameter well and analyze the data to assist in the evaluation of a pump and treat alternative to address the molybdenum-impacted groundwater at well MW-306, if feasible, after the presence of MSW or MSW-impacted groundwater in the vicinity of well MW-306 is assessed.
- Prepare a summary memo with the results of the MW-306 area pumping test for inclusion in the next addendum to the ACM, if feasible, after the presence of MSW or MSW-impacted groundwater in the vicinity of well MW-306 is assessed.
- Evaluate potential non-extractive groundwater remedy methods based on the further assessment of the extent of MSW and its potential impact to groundwater.
- Update the assessment of corrective action alternatives, if needed, after evaluating the results of the investigation activities described above.
- Update conceptual site model based on findings of the additional investigation tasks.
- Prepare a second ACM addendum, which will include a summary of the ash borings, ash leach testing, geochemical modeling, any available pump test data evaluations, creek soil borings, and creek piezometer data.
- Hold a public meeting in accordance with 40 CFR 257.96(e).
- Prepare the Selection of Remedy Report in accordance with 40 CFR 257.97.

# Tables

**Table 1. Timeline for Completed Work - Selection of Remedy**
**Prairie Creek Generating Station / SCS Engineers Project #25220084.00**

| Date | Activity |
|---|---|
| **Work Completed Prior to the Current Reporting Period** | |
| August 2019 | Additional monitoring wells installed to investigate nature and extent (MW-309 and MW-310). |
| September 2019 | Completed Assessment of Corrective Measures (ACM). |
| November 2019 | Completed the Well Documentation Report for new wells. |
| January 2020 | Completed second round of assessment monitoring sampling for the new wells (MW-309 and MW-310). |
| January 2020 | Completed Statistical Evaluation of October 2019 groundwater monitoring results. |
| January 2020 | Completed 2019 Annual Groundwater Monitoring and Corrective Action Report. |
| Late winter or early spring 2020 | Planning, permitting, and access arrangements for four additional monitoring wells (piezometers) to investigate the vertical extent of impacts. |
| March 2020 | Completed Semiannual Progress Report for the Selection of Remedy. |
| June-July 2020 | Additional monitoring wells (piezometers) installed to investigate vertical groundwater flow and groundwater quality. |
| September 2020 | Completed Semiannual Progress Report for the Selection of Remedy. |
| September 2020 | Conducted groundwater sampling at piezometers installed in June-July 2020. |
| January 2021 | Completed 2020 Annual Groundwater Monitoring and Corrective Action Report. |
| March 2021 | Completed Semiannual Progress Report for the Selection of Remedy. |
| March 2021 | Completed Documentation Report for monitoring wells installed in 2020. |
| June-August 2021 | Performed research on potential off-site sources of arsenic that may be impacting groundwater. |
| July 2021 | Conducted additional assessment monitoring event for select parameters at MW-308. |
| August 2021 | Updated Hydrogeochemical Conceptual Model. |
| August 2021 | Completed ACM Addendum #1. |
| August 2021 | Sampled Prairie Creek for arsenic at locations upstream and downstream of the plant. |
| September-November 2021 | Prepared Joint Permit application for installation of monitoring wells within a floodplain. |
| October 2021 | Completed statistical evaluation of the July 2021 supplemental monitoring result. |
| October 2021 | Conducted semiannual assessment monitoring event. |
| November 2021 | Submitted a Joint Application Permit for monitoring well within a floodplain. |

**Table 1. Timeline for Completed Work - Selection of Remedy**
**Prairie Creek Generating Station / SCS Engineers Project #25220084.00**

| Date | Activity |
|---|---|
| December 2021 | Revised sampling and analysis plan. |
| December 2021 | Received U.S. Army Corps of Engineers approval of joint permit for monitoring well installations within a floodplain. |
| December 2021 - January 2022 | Evaluated potential off-site arsenic sources near Prairie Creek. |
| January 2022 | Completed 2021 Annual Groundwater Monitoring and Corrective Action Report. |
| January 2022 | Received Iowa Department of Natural Resources approval of joint permit for monitoring well installations within a floodplain. |
| January 2022 | Scheduled driller for installation of monitoring wells. |
| January-February 2022 | Prepared City floodplain permit application, City right-of-way permit application, and County monitoring well installation permit applications. |
| January 2022 | Completed statistical evaluation of the October 2021 supplemental monitoring results. |
| February 2022 | Conducted additional assessment monitoring event for select parameters at MW-308. |
| March 2022 | Completed Semiannual Progress Report for the Selection of Remedy. |
| April 2022 | Conducted semiannual 2022 assessment monitoring event. |
| May 2022 | Completed the installation of water table observation well MW-311 and additional background monitoring well MW-312. |
| May 2022 | Conducted additional assessment monitoring event for select parameters at MW-312. |
| June 2022 | Completed statistical evaluation of the February 2022 supplemental monitoring result. |
| July 2022 | Completed statistical evaluation of the April and May 2022 supplemental monitoring result. |
| July 2022 | Conducted additional assessment monitoring event for select parameters at MW-312. |
| August 2022 | Completed Documentation Report for monitoring wells installed in May 2022 (MW-311 and MW-312). |
| August 2022 | Installed first of 18 creek bed 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. |
| September 2022 | Completed Semiannual Progress Report for the Selection of Remedy. |
| September 2022 | Installed single test piezometer in Prairie Creek. Installation was successful, so parts for an additional 17 creek piezometers were ordered. The creek piezometers will be used to evaluate groundwater flow and geochemistry between the creek and local groundwater. |
| September 2022 | Alliant Energy contacted the property owner of the rail spur west of the site to negotiate access for soil, surface water, and groundwater sampling. Permission was granted. |
| September 2022 | Preliminary evaluation performed on phytoremediation as a potential groundwater corrective action alternative. |

**Table 1. Timeline for Completed Work - Selection of Remedy**
**Prairie Creek Generating Station / SCS Engineers Project #25220084.00**

| Date | Activity |
|---|---|
| September 2022 | Performed step-drawdown pumping test at monitoring well MW-306 to evaluate local hydraulic properties of the aquifer with potential for groundwater extraction of molybdenum-impacted groundwater. Groundwater samples were obtained from MW-306 to evaluate potential changes in molybdenum during the pumping test. |
| September 2022 | Performed soil sampling on and near the banks of Prairie Creek to the west of the impoundments. Soil samples were submitted for metals analysis to evaluate potential background sources of naturally occurring arsenic in the creek valley soils of Prairie Creek. Submitted soil and sediment samples for laboratory analysis by x-ray fluorescence (XRF) and x-ray diffraction (XRD) to assess total arsenic content and potential arsenic-bearing mineral fraction. |
| September 2022 | Completed well installation, development, and hydraulic conductivity testing documentation for water level-only monitoring well MW-311 and supplemental background monitoring well MW-312, |
| October 2022 | Conducted semiannual assessment monitoring event, |
| October 2022 | Completed installation of temporary piezometers in Prairie Creek (six nests of three piezometers each) and performed first sampling event of all 18 creek piezometers. Collected a surface water sample adjacent to each nest. |
| October 2022 | Performed data evaluation of results from October 2022 semiannual sampling event, creek piezometer sampling, and MW-306 pumping test. |
| November 2022 | Performed additional soil sampling near the banks of Prairie Creek to the west of the impoundments, including soil sample collection by hand auger and collection of groundwater and surface water samples. Submitted soil samples for XRF and XRD analysis. Also performed a second round of creek piezometer and surface water sampling in Prairie Creek. |
| January 2023 | Completed third and final round of creek piezometers sampling in Prairie Creek. Certified Iowa driller oversaw the abandonment of all 18 creek piezometers. |
| January 2023 | Collected surface water samples from Prairie Creek near each of the six creek piezometer nests. |
| January 2023 | Obtained sediment cores at six locations within Prairie Creek. One core was advanced adjacent to each of the six piezometer nest locations within the creek. Submitted samples from the cores for laboratory analysis of total organic carbon and total arsenic. Also submitted samples for analysis by XRD. |
| January 2023 | Completed the 2022 Annual Groundwater Monitoring and Corrective Action Report. |
| February 2023 | Completed the October 2022 groundwater results report. |
| February 2023 | Received and evaluated the results of the XRF and XRD analysis of soil samples from the Prairie Creek valley located west and sidegradient of the impoundments. Evaluated results of the three creek piezometer and surface water sampling events. |
| March 2023 | Completed Semiannual Progress Report for the Selection of Remedy. |
| April 2023 | Conducted semiannual assessment groundwater monitoring event. |
| April 2023 | Performed data evaluation of results from April 2023 semiannual sampling event. |
| April 2023 | Drafted corrective action evaluation. |
| April-June 2023 | Updated site conceptual model. |
| May 2023 | Evaluated updated survey data and potential drilling scenarios for collection of ash samples and identification of ash/soil interface elevation required for remedial design. |
| June 2023 | Drafted an alternative plan for building a ramp and pads for vertical drilling for collection of ash samples to identify ash/soil interface elevation. |

**Table 1. Timeline for Completed Work - Selection of Remedy**
**Prairie Creek Generating Station / SCS Engineers Project #25220084.00**

| Date | Activity |
|---|---|
| July 2023 | Drafted Investigation summary and recommendations report. |
| July 2023 | Met with Cascade Drilling on site to evaluate potential angle drilling options to obtain ash samples and identify elevation of ash-soil contact. |
| August 2023 | Completed the April 2023 Assessment Groundwater Monitoring Results Letter. |
| August 2023 | Began full-scale pumping test design for pump and treat groundwater corrective action alternative in the vicinity of well MW-306. |
| September 2023 | Completed a Semiannual Progress Report for the Selection of Remedy. |
| September 2023 | Designed pumping test in the vicinity of monitoring well MW-306. Designed pumping test well and observation well. |
| September 2023 | Submitted a notification letter of intent to the Iowa Department of Natural Resources to perform borings and repairs on the impoundment cap. |
| October 2023 | Conducted a semiannual groundwater sampling event. |
| October 2023 | Performed pre-drilling and post drilling survey of cap boring locations. |
| October 2023 | Drilled two angle borings into the closed impoundments to identify the ash and native soil contacts and collect ash samples at the base of the impoundments. |
| October 2023 | Submitted ash samples from the base of the impoundments to the laboratory for leach testing. |
| December 2023 | Completed survey work for railroad right-of-way, MW-306 nest, and as-built ground surface elevation survey. |
| January 2024 - February 2024 | Prepared permit applications for off-site pumping test and observation well, right-of way permit, and floodplain permit. |
| January 2024 | Completed the 2023 Annual Groundwater Monitoring and Corrective Action Report. |
| February 2024 | Applied to and received approval from CRWPCF to discharge groundwater. |
| February 2024 | Discussed with DNR and county installation and purpose of pumping wells. |
| **Work Completed During the Current Reporting Period** | |
| March 2024 | Received final results for sequential leaching testing from laboratory (Eurofins). |
| March 2024 | Completed the October 2023 Assessment Groundwater Monitoring results letter. |
| March 2024 | Completed the Semiannual SOR Progress Report. |
| March 2024 | Submitted final cap repair documentation to IDNR (3/19/2024). |
| March 2024 | Submitted well permit applications to Linn County; floodplain permit application was approved; and the right-of-way permit application was filed with the City for the aquifer pumping test wells. |
| May - August 2024 | Developed updated cross-sections that includes CCR boring information. |
| May-June 2024 | Drilling was postponed by the City of Cedar Rapids due to the 40-foot setback distance requirement for the well installation from the sewer. Met with City and obtained a variance for a 15-foot sewer offset. Redesigned pumping test layout design. |
| June 2024 | Evaluated sequential leaching tests with geochemical modeling software (PHREEQC). |

**Table 1. Timeline for Completed Work - Selection of Remedy**
**Prairie Creek Generating Station / SCS Engineers Project #25220084.00**

| Date | Activity |
|---|---|
| June 2024 | Initiated drilling to install one 6-inch pumping well and two 2-inch observation wells; however, municipal solid waste (MSW) was encountered and drilling was stopped. MSW was not encountered on IPL property and not related to any historical IPL activities. |
| July-August 2024 | Began review of municipal solid waste historical files. Initiated review of remedial options that do not include groundwater removal. |
| August 2024 | Prepared a draft sequential leaching test memo supported with geochemical modeling and updated cross-sections. |

Note:
*: Spring semiannual sampling events are typically completed in April; spring 2020 sampling of selected wells was delayed due to the COVID-19 pandemic.

Created by: NDK Date: 2/19/2020
Last revision by: NLB Date: 9/11/2024
Checked by: TK Date: 9/12/2024

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**Table 2. Groundwater Samples Summary – Events Since ACM Submittal**
**Prairie Creek Generating Station / SCS Engineers Project #25220084.00**

| Sample Dates | Background Wells | | | Downgradient 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-311 | MW-312 |
| 10/28-29-2019 | A | NI | A | A | A | A | A | NI | A | A | A-NE | NI | A-NE | NI | NI | NI |
| 1/9/2020 | -- | NI | -- | -- | -- | -- | -- | NI | -- | -- | A-NE | NI | A-NE | NI | NI | NI |
| 4/27 & 5/27 2020 | A | NI | A | A | A | A | A | NI | A | A | A-NE | NI | A-NE | NI | NI | NI |
| 9/15/2020 | -- | Add. | -- | -- | -- | -- | -- | Add. | -- | -- | -- | Add. | -- | Add. | NI | NI |
| 10/19-21/2020 | A | A | A | A | A | A | A | A-NE | A | A | A-NE | A-NE | A-NE | A-NE | NI | NI |
| 4/26-28/2021 | A | A | A | A | A | A | A | A-NE | A | A | A-NE | A-NE | A-NE | A-NE | NI | NI |
| 7/14/2021 | -- | -- | -- | -- | -- | -- | -- | -- | -- | Add. | -- | -- | -- | -- | NI | NI |
| 10/20-22/2021 | A | A | A | A | A | A | A | A-NE | A | A | A-NE | A-NE | A-NE | A-NE | NI | NI |
| 2/22/2022 | -- | -- | -- | -- | -- | -- | -- | -- | -- | Add. | -- | -- | -- | -- | NI | NI |
| 4/25-27/2022 | A | A | A | A | A | A | A | A-NE | A | A | A-NE | A-NE | A-NE | A-NE | NI | NI |
| 5/25/2022 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | N/A | Add. |
| 7/15/2022 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | Add. |
| 10/12-13/2022 | A | A | A | A | A | A | A | A-NE | A | A | A-NE | A-NE | A-NE | A-NE | N/A | A |
| 4/19-20/2023 | A | A | A | A | A | A | A | A-NE | A | A | A-NE | A-NE | A-NE | A-NE | N/A | A |
| 11/6-7/2023 | A | A | A | A | A | A | A | A-NE | A | A | A-NE | A-NE | A-NE | A-NE | N/A | A |
| 4/15-18/2024 | A | A | A | A | A | A | A | A-NE | A | A | A-NE | A-NE | A-NE | A-NE | N/A | A |
| Total Samples | 10 | 9 | 10 | 10 | 10 | 10 | 10 | 9 | 10 | 12 | 11 | 9 | 11 | 9 | N/A | 6 |

Abbreviations:

A = Required by Assessment Monitoring Program

Add. = Additional Sampling Event

A-NE = Assessment monitoring for nature and extent, well sampled for select Appendix IV and selection-of-remedy parameters

N/A = Not Applicable. Water Level Only.

NI = Not Installed

-- = Not Sampled

ACM = Assessment of Corrective Measures

Notes:

1. MW-311 was installed in May 2022 for groundwater elevation evaluation only.
2. A series of five groundwater samples were collected from monitoring well MW-306 during a January 28, 2022 stepped drawdown test. The samples were analyzed for molybdenum. The sample event is not included in Table 2 because they are not compliance samples and will not be included in the statistical evaluations.

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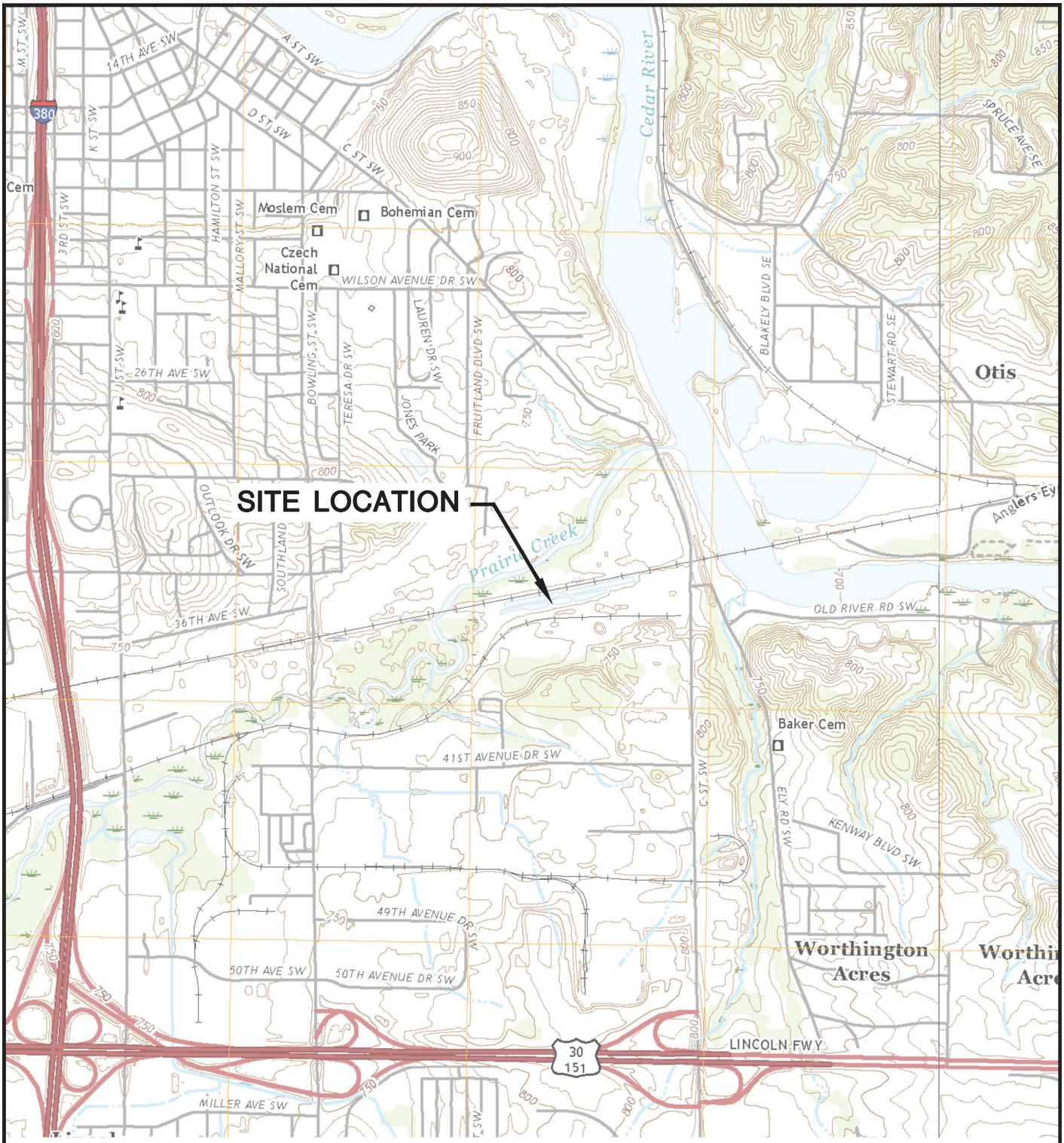
Checked by: RM Date: 8/22/2024

I:\25220084.00\Deliverables\2024 Semiannual - Selection of Remedy\2024 September Semiannual SOR Report\Tables\[Table 2_GW_Samples_Summary_Table_PCS.xlsx]GW Summary

# Figures




N

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


| | | | |
|---|---|---|---|
| CLIENT | INTERSTATE POWER AND LIGHT<br>4902 N. BILTMORE LANE, #1000<br>MADISON, WI 53718 | SITE | ALLIANT ENERGY<br>PRAIRIE CREEK GENERATING STATION<br>CEDAR RAPIDS, IA |

SITE LOCATION MAP

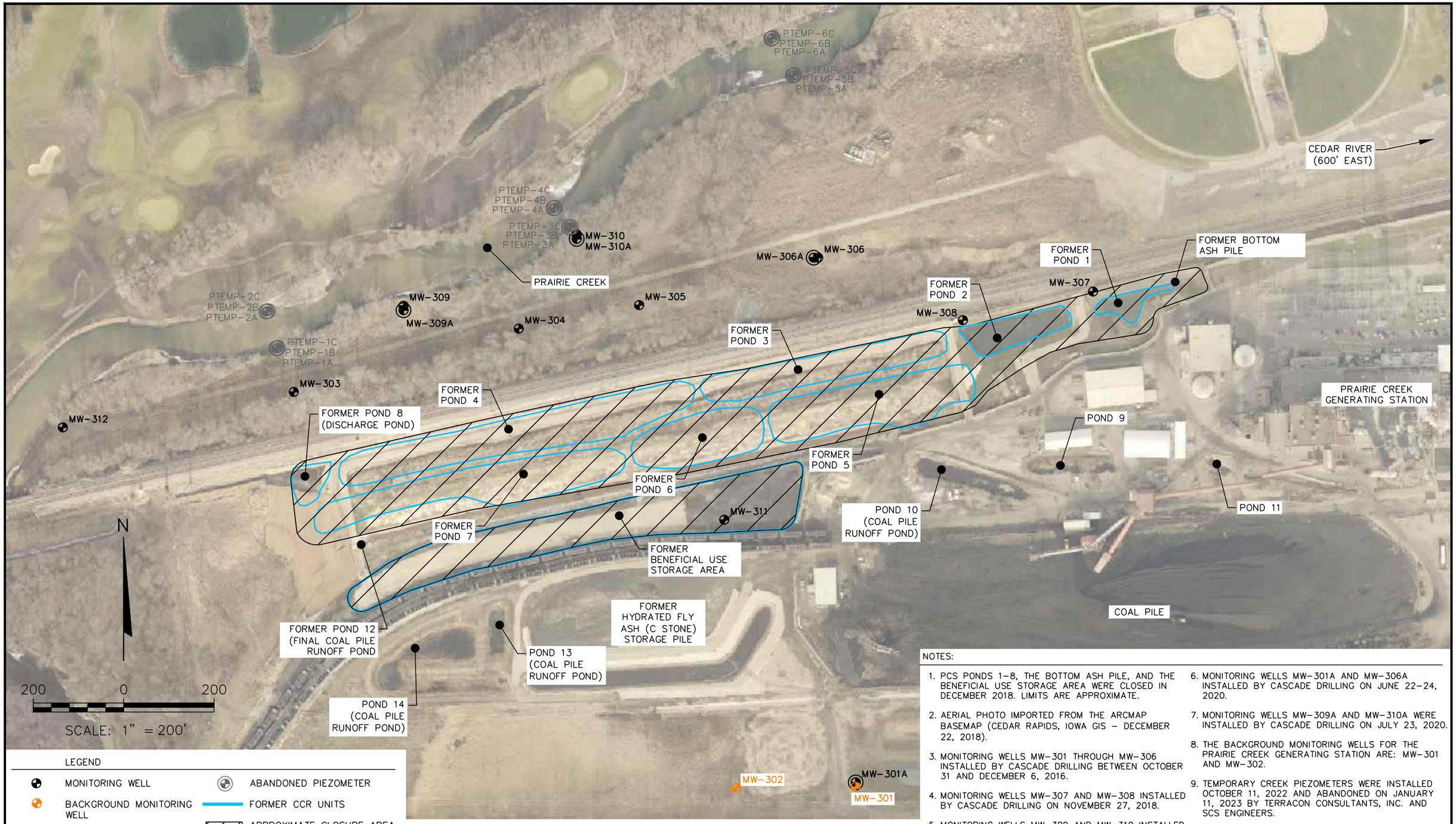
| | | | |
|---|---|---|---|
| PROJECT NO. | 25222074.00 | DRAWN BY: | BSS |
| DRAWN: | 11/18/2019 | CHECKED BY: | NDK |
| REVISED: | 08/31/2022 | APPROVED BY: | TK 9/2/2022 |

ENGINEER

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

FIGURE 1

I:\25222074.00\Drawings\Site Location Map.dwg, 8/31/2022 3:21:00 PM




LEGEND

- MONITORING WELL
- BACKGROUND MONITORING WELL
- PIEZOMETER
- ABANDONED 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.
9. TEMPORARY CREEK PIEZOMETERS WERE INSTALLED OCTOBER 11, 2022 AND ABANDONED ON JANUARY 11, 2023 BY TERRACON CONSULTANTS, INC. AND SCS ENGINEERS.

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|---|---|---|---|
| PROJECT NO. | 25220084.00 | DRAWN BY: | BSS/KP |
| DRAWN: | 11/18/2019 | CHECKED BY: | RM |
| REVISED: | 03/06/2023 | APPROVED BY: | TK 03/07/2023 |

ENGINEER: 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

\\Mad-fs01\data\Projects\25220084.00\Drawings\Site Plan and Monitoring Well Locations.dwg, 3/7/2023 3:23:06 PM