

2024 Annual Groundwater Monitoring and Corrective Action Report

Edgewater Generating Station
Sheboygan, Wisconsin

Prepared for:



SCS ENGINEERS

25224068.00 | January 31, 2025

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OVERVIEW OF CURRENT STATUS

Edgewater Generating Station, Surface Impoundments 2024 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) units. The groundwater monitoring system at the Edgewater Generating Station is a multiunit system. Supporting information is provided in the text of the annual report.

Category	Rule Requirement	Site Status
Monitoring Status – Start of Year	(i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Detection
Monitoring Status – End of Year	(ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Assessment
Statistically Significant Increases (SSIs)	(iii) If it was determined that there was an SSI over background for one or more constituents listed in appendix III to this part pursuant to §257.94(e):	
	(A) Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and	<u>October 2023</u> Boron: MW-301, MW-302, MW-303 Fluoride: MW-302 Sulfate: MW-301, MW-302 <u>April 2024</u> Boron: MW-301, MW-302, MW-303, MW-304 Sulfate: MW-301, MW-304
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	Alternative Source Demonstration prepared for October 2023 event during 2024. An assessment monitoring program was established on October 28, 2024, with the collection of the initial assessment monitoring samples during the October 2024 sampling event.

Category	Rule Requirement	Site Status
Statistically Significant Levels (SSL) Above Groundwater Protection Standard (GPS)	(iv) If it was determined that there was an SSL above the GPS for one or more constituents listed in appendix IV to this part pursuant to §257.95(g) include all of the following:	Not applicable – Evaluation of the initial assessment monitoring results will be completed in 2025
	(A) Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase;	
	(B) Provide the date when the assessment of corrective measures (ACM) was initiated for the CCR unit;	
	(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and	
Selection of Remedy	(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	Not applicable – Selection of remedy not required
Corrective Action	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Not applicable – Remedial activities not required

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1.0 INTRODUCTION

This 2024 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the Coal Combustion Residuals (CCR) Rule [40 Code of Federal Regulations (CFR) 257.50-107]. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e). The applicable sections of the Rule are provided below in italics, followed by applicable information relative to the 2024 Annual Groundwater Monitoring and Corrective Action Report for the CCR Units.

This report covers the period of groundwater monitoring from January 1, 2024, through December 31, 2024.

The groundwater monitoring system at the Edgewater Generating Station (EDG) is a multiunit system. EDG has four closed CCR units, which are contiguous:

- EDG Slag Pond (existing CCR surface impoundment)
- EDG North A-Pond (existing CCR surface impoundment)
- EDG South A-Pond (existing CCR surface impoundment)
- EDG B-Pond (existing surface CCR impoundment)

The system is designed to detect monitored constituents at the waste boundary of the CCR units as required by 40 CFR 257.91(d). The groundwater monitoring system consists of one upgradient and four downgradient monitoring wells (**Table 1**, **Figure 1**, and **Figure 2**).

Closure of the four ponds was completed in 2021. The Notification of Completion of Closure pursuant to 40 CFR 257.102(d) was entered into the EDG CCR Operating Record on August 10, 2021.

2.0 BACKGROUND

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

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

2.1.1 Regional Information

For the purposes of groundwater monitoring, the unconsolidated sand and gravel aquifer is considered to be the uppermost aquifer, as defined under 40 CFR 257.53, at the EDG ponds. A summary of the regional hydrogeologic stratigraphy and a regional geologic cross section are included in **Appendix A**.

The sand and gravel aquifer is present in some parts of Sheboygan County (Skinner and Borman, 1973). Boring logs from monitoring wells at the EDG ponds and for nearby private wells indicate that the unconsolidated material at and near the site contains a significant amount of sand. Private well logs from the surrounding area indicate that the sand and gravel aquifer has been used as a water

source; however, several older sand wells in the area have been replaced with bedrock water supply wells. In a search of area well records, SCS Engineers (SCS) did not find any records indicating that shallow wells are still being used in the area around EDG.

The dolomite aquifer underlies the unconsolidated material at the site. The total thickness of the dolomite aquifer at the site is unknown. The dolomite aquifer is underlain by the Maquoketa shale, which is a confining unit. The Maquoketa shale is underlain by the Cambrian-Ordovician sandstone aquifer. This sequence of sedimentary bedrock units is over 1,500 feet thick in the site vicinity. The sedimentary sequence is underlain by Precambrian crystalline rocks that are not considered an aquifer in eastern Wisconsin.

2.1.2 Site Information

The site consists of four closed CCR surface impoundments that are monitored as a single Closure Area. Closure of the impoundments began in 2020 and was completed in 2021. Adjacent to the surface impoundments is an inactive CCR landfill that was closed prior to 2015 and the area as a whole is regulated by the Wisconsin Department of Natural Resources (Edgewater 1-4 Closed Ash Disposal Facility, License #2524). A groundwater monitoring network of 19 wells was installed at the site to meet state requirements prior to installation of additional monitoring wells to meet CCR Rule requirements. Soils at the site are primarily silt, sand, and some clay to a depth of approximately 80 to 140 feet and overlie dolomite bedrock.

During drilling of CCR wells MW-301, MW-302, MW-303, and MW-304, the unconsolidated materials were identified as consisting primarily of lean clay overlying sandy silt. The boring log for the previously installed background monitoring well 2R-OW shows lean clay as the primary unconsolidated material at this location. The boring logs for Ash Ponds CCR monitoring wells are provided in **Appendix B**. All CCR monitoring wells are screened within the unconsolidated glacial aquifer.

The water table maps shown on **Figures 3 and 4** are based on groundwater levels measured in the unconsolidated deposits during the April 2024 and October 2024 detection monitoring events. A summary of the sampling events that occurred throughout 2024 is shown in **Table 2**. The groundwater elevations are summarized in **Table 3A** (state wells) and **Table 3B** (CCR wells). Horizontal gradients and flow velocities for representative flow paths are provided in **Table 4**.

Shallow groundwater in the area of the EDG site generally flows to the south-southeast. There was a more easterly flow direction in the immediate vicinity of the ponds prior to the impoundment closure and capping. Due to the change in flow direction after the closure activities were completed, a fourth downgradient compliance well, MW-304, was installed on the south side of the closure area on February 5, 2024.

Historically, there was some localized groundwater mounding associated with the now closed EDG ponds. With the closure of the ponds, groundwater mounding has decreased. Water levels measured at three wells installed within the closed CCR landfill were historically interpreted as representing the water table, but under current conditions may not be consistent with groundwater elevations in the soil below the landfill and pond closure area. Water levels for these wells are shown in brackets in the water table maps and contours in the landfill and pond closure area are dashed to reflect uncertainty.

2.2 CCR MONITORING SYSTEM

The groundwater monitoring system established under the CCR Rule consists of one upgradient (background) monitoring well and four downgradient monitoring wells (**Table 1** and **Figure 2**). The upgradient monitoring well is 2R-OW. The downgradient monitoring wells include MW-301, MW-302, MW-303, and MW-304. MW-304 was installed in February 2024 and background monitoring has been in progress since April 2024. MW-304 was also included in the April 2024 detection monitoring event and the October 2024 assessment monitoring event. The monitoring system was recertified on December 31, 2024 to include MW-304 as a downgradient compliance well.

The CCR compliance monitoring wells were installed in the unconsolidated sediments with screens in the uppermost soil layer producing appreciable water, which was a sandy silt unit. Well depths range from approximately 14.5 to 40 feet, measured from the top of the well casing.

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 CCR management units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31, 2029, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by §257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

3.1 §257.90(E)(1) SITE MAP

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

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

New monitoring well MW-304 was installed in 2024 and was added to the groundwater monitoring network as a compliance well. No monitoring wells included in the monitoring system were decommissioned in 2024.

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

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

Two semiannual groundwater sampling events were completed in April and October 2024 for Appendix III constituents. A resampling event was conducted in July 2024 to confirm exceedances observed in the April 2024 monitoring event. 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 or assessment monitoring programs is included in **Table 2**.

The validation and evaluation of the October 2023 monitoring event data was completed and transmitted to WPL on January 29, 2024. The validation and evaluation of the April 2024 monitoring event data was completed and transmitted to WPL on October 18, 2024. The validation and evaluation of the October 2024 monitoring event data was in progress at the end of 2024 and will be transmitted to WPL in 2025; therefore, the October 2024 monitoring results and analytical report will be included in the 2025 annual report. The October 2024 groundwater elevations are included in this report.

The sampling results for Appendix III parameters in October 2023 and April 2024 are summarized in **Table 5**. Field parameter results for the October 2023 and April 2024 sampling events are provided in **Table 6**. The analytical laboratory reports for October 2023 and April 2024 are provided in **Appendix C**. Historical results for each monitoring well through April 2024 are summarized in **Appendix D**.

Background sampling for new monitoring well MW-304 was performed on an approximate monthly basis in 2024, with background samples collected in April, July, August, October, November and December. Laboratory reports for the April, July, and August results are included in **Appendix C** and the results for those three events are summarized in **Appendix D**. Laboratory results for the October, November, and December background events are still under review and will be included in the 2025 annual report. The April 2024 Appendix IV background monitoring results for MW-304 are not included in the results table (**Table 5**) because the site was in detection monitoring in April. A separate results table including Appendix III and IV background sampling results collected from MW-304 in April, July, and August 2024 is included as **Table 7**.

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);

The EDG CCR units transitioned to assessment monitoring beginning with the October 2024 monitoring event. The assessment monitoring program was established in accordance with 40 CFR 257.94(e)(3) on October 28, 2024.

In 2024, the monitoring results for the October 2023 and April 2024 monitoring events were evaluated for statistically significant increases (SSIs) in detection monitoring parameters relative to background. The comparison to background was based on a prediction limit approach, comparing

the results to interwell upper prediction limits (UPLs) based on background monitoring results from the upgradient well (2R-OW). The interwell UPLs were updated in July 2023 using the background data from April 2016 through April 2023. The July 2023 UPL update memorandum was included in the 2023 Annual Groundwater Monitoring Report. The Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities (U.S. EPA, 2009; Section 5.3.1) recommends periodic updating of background for both intrawell and interwell analyses. For semiannual monitoring, an update interval of 2 to 3 years is recommended; therefore, the next UPL update is planned for 2026.

For the October 2023 monitoring event, SSIs for boron, fluoride, and sulfate were identified. An alternative source demonstration (ASD) was completed for the October 2023 results demonstrating that a source other than the CCR units was the likely cause of the SSIs. The ASD report is provided in **Appendix E**.

For the April 2024 monitoring event, SSIs for boron and sulfate were identified. An ASD was not prepared and the site transitioned to assessment monitoring beginning with the October 2024 monitoring event.

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 2024 Annual Groundwater Monitoring and Corrective Action Report for the CCR Units.

3.5.1 §257.90(e) General Requirements

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

Status of Groundwater Monitoring and Corrective Action Program. The groundwater monitoring and corrective action program was in detection monitoring at the beginning of 2024 and transitioned to assessment monitoring in October 2024.

Summary of Key Actions Completed (2024):

- Installation of new monitoring well MW-304 to monitor the closure area on the south side of the Former WPDES Pond Location.
- Statistical evaluation and determination of SSIs for the October 2023 and April 2024 monitoring events.
- ASD report for the SSIs identified from the October 2023 monitoring event.
- Two semiannual groundwater sampling and analysis events (April and October 2024).

- One detection monitoring resampling event for select parameters (July 2024).
- Initiation of assessment monitoring program.
- Recertification of the monitoring system to include new downgradient monitoring well MW-304.

Description of Any Problems Encountered. No problems were encountered in 2024.

Discussion of Actions to Resolve the Problems. Not applicable.

Projection of Key Activities for the Upcoming Year (2025).

- Resample the monitoring wells and analyze for all parameters in Appendix III and for those constituents in Appendix IV that were detected in the October 2024 monitoring event, in accordance with to §257.95(d)(1) (January 2025).
- Establish groundwater protection standards (GPSs) in accordance with §257.95(d)(2) and complete evaluation of October 2024 and January 2025 assessment monitoring results.
- Complete statistical evaluation and determination of any statistically significant levels (SSLs) above the GPSs for the October 2024 and April 2025 monitoring event.
- Complete two semiannual groundwater sampling and analysis events (April and October 2025).
- Conduct supplemental groundwater sampling events, if needed.
- If one or more Appendix IV constituents is detected at an SSL above the GPS, then within 30 days WPL will prepare a notification in accordance with §257.95(g) and within 90 days complete an alternative source demonstration or initiate an assessment of corrective measures (§257.95(g)(3)). WPL will also characterize the release pursuant to §257.95(g)(1) and provide notice pursuant to §257.95(g)(2).

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 EDG CCR units are no longer in detection monitoring.

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.

The ASD report prepared to address the SSIs observed for the October 2023 detection monitoring event is provided in **Appendix E**. The ASD report is certified by a qualified professional engineer. An ASD was not prepared for the April 2024 detection monitoring event.

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).

Not applicable. Assessment monitoring was initiated following the sampling events discussed in this report.

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

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

Not applicable. Assessment monitoring was initiated following the sampling events discussed in this report.

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.

Not applicable. Corrective measures assessment has not been initiated.

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 REFERENCES

Skinner, Earl L., and Borman, Ronald G., 1973, Water Resources of Wisconsin-Lake Michigan Basin, Department of the Interior United States Geological Survey Hydrogeologic Investigation Atlas HA-432.

U.S. EPA, 2009, The Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities.

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- 7 Groundwater Analytical Results Summary – MW-304 April, July, and August 2024 Background Sampling

**Table 1. Groundwater Monitoring Well Network
Edgewater 1-4 Closed Ash Disposal Facility / SCS Engineers Project #25224068.00**

Monitoring Well	Location in Monitoring Network	Role in Monitoring Network
2R-OW	Upgradient	Background
MW-301	Downgradient	Compliance
MW-302	Downgradient	Compliance
MW-303	Downgradient	Compliance
MW-304	Downgradient	Compliance

Last revision by: NLB
 Checked by: LH

Date: 10/1/2024
 Date: 11/27/2024

**Table 2. CCR Rule Groundwater Samples Summary
Edgewater 1-4 Closed Ash Disposal Facility / SCS Engineers Project #25224068.00**

Sample Dates	Compliance Wells				Background Well
	MW-301	MW-302	MW-303	MW-304	2R-OW
April 16, 2024	D	D	D	B	D
July 26, 2024	--	--	--	B	--
August 28, 2024	--	--	--	B	--
October 3, 2024	A	A	A	A	A
November 4, 2024	--	--	--	B	--
December 4, 2024	--	--	--	B	--
Total Samples	2	2	2	6	2

Abbreviations:

D = Required by Detection Monitoring Program

B = Baseline Detection Monitoring Sample

A = Assessment Monitoring Sample

-- = Not Sampled

Last revision by: RM

Date: 12/13/2024

Checked by: NLB

Date: 12/20/2024

**Table 3A. Groundwater Elevations - State Monitoring Wells
Edgewater 1-4 Closed Ash Disposal Facility / SCS Engineers Project #25224068.00**

	Ground Water Elevation in feet above mean sea level (amsl)																					
Well Number	1-OW	2R-OW	3R-OW	4R-OW	5-OW	W-5A	6-AR	6R-OW	7A-OW	7-OW	18-OW	29-OW	29-A	30-OW	31-OW	32-OW	36-OW	37-OW	38R-OW	39R-OW	40-OW	SG-01
Top of Casing (old 1) [^]									593.7	592.73		589.03							620.98		587.42	
Top of Casing (old 2) [^]	591.72	612.72	591.32	595.60	600.72	601.84	591.32	590.98	593.41	592.51	586.47	588.86	589.25	590.81	589.00	589.07	614.63	615.02	621.14	614.04	586.05	
Top of Casing Elevation (ft amsl) [^]	592.18	611.85	591.59	594.68	600.94	600.66	590.78	591.74	593.45	593.19	ABAND	588.72	588.43	591.13	589.22	589.21	ABAND	615.30	620.24	614.27	586.69	ABAND
Total Depth (ft from top of casing)	11.10	17.53	15.82	16.48	10.65	21.51	19.86	10.37	20.21	9.93	14.25	19.96	43.12	14.88	14.98	14.95	21.01	18.55	29.00	22.29	17.3	
Measurement Date																						
October 24, 2012	588.11	607.82	582.64	585.24	595.63	596.69	587.42	587.40	592.00	589.78	583.49	585.33	586.60	586.40	582.58	583.63	599.77	599.42	599.38	598.05		597.60
April 18, 2012					595.89	597.13	587.33	587.35	592.35	589.79		585.32	588.39									
October 24, 2012					595.63	596.69	587.42	587.40	592.00	589.78		585.33	586.60									
April 8, 2013	588.50	609.92	588.37	586.35	596.66	597.65	588.40	587.34	592.79	589.95	583.97	585.78	588.07	588.57	584.35	584.50	600.79	600.24	600.16	598.30	--	597.9
October 22, 2013	584.88	601.15	580.90	584.46	594.23	595.64	582.64	584.83	591.23	587.24	NM ⁽¹⁾	584.70	586.76	582.19	580.40	580.76	599.13	598.22	598.42	596.56	--	598.0
April 22, 2014	588.05	609.22	587.99	586.11	595.18	597.10	587.00	587.37	589.27	589.51	NM ⁽¹⁾	585.38	588.22	587.53	583.75	583.75	NM ⁽¹⁾	599.67	599.38	598.56	--	597.8
October 28, 2014	586.14	607.27	586.30	585.08	595.33	596.51	587.68	586.99	591.92	589.29	NM ⁽¹⁾	585.00	587.84	585.48	582.88	582.68	600.07	599.81	599.26	598.37	--	595.85
April 7 - 9, 2015	587.90	608.47	587.44	585.52	595.66	596.76	586.99	587.50	591.95	588.50	ABAND	585.44	587.55	586.29	583.21	583.87	599.69	599.21	599.21	597.46	583.77	597.6
October 8, 2015	584.78	604.22	583.34	584.52	594.76	594.47	582.65	585.67	591.23	589.71	ABAND	584.69	587.27	584.26	581.60	582.52	600.29	599.47	599.70	598.09	583.01	--
April 4-5, 2016	588.40	610.02	587.72	586.69	596.70	597.81	584.52	585.68	592.41	587.93	ABAND	582.95	587.25	586.91	584.35	584.47	601.05	601.37	601.18	601.13	579.28	599.0
October 17, 2016 ⁽²⁾	587.50	607.27	586.71	585.15	595.41	596.82	584.34	586.61	592.01	587.65	ABAND	581.25	586.10	586.23	583.02	583.83	600.87	600.70	600.74	599.49	579.42	
April 12-13, 2017	588.23	609.80	587.95	586.31	596.08	597.69	586.77	587.32	592.19	587.06	ABAND	583.74	585.43	585.36	583.68	584.52	602.01	602.11	602.08	601.29	584.02	
October 9, 2017	584.14	600.87	581.00	584.49	594.68	596.04	583.03	583.51	590.50	585.96	ABAND	583.01	584.88	582.76	580.93	581.18	600.18	598.48	599.65	598.07	583.05	
April 2, 2018	587.79	607.87	586.63	586.68	595.73	596.88	586.80	587.44	591.76	589.62	ABAND	585.51	587.11	585.68	582.95	582.85	600.71	600.00	600.04	597.99	583.64	
June 19, 2018	NM	605.70	585.49	585.20	595.41	NM	NM	NM	NM	587.20	ABAND	585.43	585.79	584.96	582.29	NM	NM ⁽¹⁾	600.44	600.68	599.61	583.07	NM
October 1, 2018	585.37	604.61	584.18	584.86	595.24	596.44	586.10	586.86	591.01	588.75	ABAND	585.04	584.94	584.79	582.11	582.81	600.30	600.12	600.27	599.79	583.17	
April 8, 2019	588.57	609.50	588.01	591.93	596.03	597.33	584.61	587.35	591.92	590.06	ABAND	585.76	586.75	587.83	584.18	584.85	600.21	599.60	599.74	598.49	583.75	
October 9-10, 2019	587.85	609.39	587.39	585.99	595.68	596.92	586.42	587.24	591.66	587.53	ABAND	585.14	585.10	587.15	583.63	584.48	599.92	600.25	600.01	599.82	583.08	
April 8-9, 2020	588.03	608.97	587.70	586.05	595.57	596.89	585.74	586.95	591.61	587.76	ABAND	584.98	587.35	587.29	583.70	584.59	599.40	599.52	599.48	599.38	583.01	
October 14-15, 2020	584.62	604.37	582.20	584.54	593.27	594.86	582.71	583.45	588.81	586.53	ABAND	583.95	586.83	583.83	582.60	582.82	ABAND	596.87	NM	594.72	583.26	NM
April 14, 2021	587.95	608.50	587.64	585.42	594.87	596.13	586.53	587.29	591.28	589.89	ABAND	585.16	587.64	587.06	583.46	584.25	ABAND	DRY	596.50	593.95	583.08	NM
October 27-28, 2021	584.53	603.62	580.74	584.47	593.06	594.70	579.90	584.60	590.45	587.39	ABAND	584.60	586.65	582.89	581.88	582.02	ABAND	DRY	595.49	592.34	582.74	ABAND
February 28, 2022	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	ABAND	NM	NM	NM	NM	NM	ABAND	DRY	595.25	NM	NM	ABAND
April 13, 2022	588.64	608.63	588.30	585.06	595.72	595.11	586.08	588.15	591.60	590.70	ABAND	584.69	584.82	588.02	584.10	585.09	ABAND	DRY	594.43	DRY	583.09	ABAND
October 6, 2022	584.39	601.93	580.62	583.52	593.16	593.41	582.43	584.86	590.02	587.38	ABAND	583.21	584.18	583.09	581.55	581.98	ABAND	DRY	594.62	593.36	582.60	ABAND
April 25-26, 2023	588.51	607.74	588.00	585.15	595.48	595.22	588.13	588.18	591.90	590.13	ABAND	584.92	586.46	587.94	583.60	584.62	ABAND	597.35	596.81	598.09	583.17	ABAND
October 10-11, 2023	583.99	599.85	579.87	583.26	592.52	592.83	583.52	582.36	588.67	585.67	ABAND	583.46	583.80	582.27	580.47	581.37	ABAND	DRY	595.63	594.40	582.01	ABAND
April 15-17, 2024	588.50	607.70	588.14	584.84	595.52	595.15	588.31	587.93	591.87	590.26	ABAND	584.66	587.07	587.65	583.69	584.49	ABAND	596.81	596.66	596.69	583.19	ABAND
October 3-4, 2024	584.42	602.06	582.67	583.52	593.62	593.74	584.74	584.57	590.38	585.65	ABAND	584.58	585.61	584.02	581.48	582.30	ABAND	DAMAG	596.33	597.05	582.08	ABAND
Bottom of Well Elevation (ft)	580.62	595.19	575.50	579.12	590.07	580.33	571.46	580.61	573.20	582.58	572.22	568.90	546.13	575.93	574.02	574.12	593.62	596.47	592.14	591.75	568.75	

Notes: Created by: MDB Date: 5/6/2013
 NM = not measured Last revision by: BAS Date: 10/17/2024
 ABAND = abandoned Checked by: NLB Date: 12/2/2024

1: Well broken
 2: Well casings at 7-OW, 7A, and 29-OW were cut down to allow the protective covers to close on October 17, 2016. 7-OW was cut down by 0.22 ft, 7A was cut down by 0.29 ft, and 29-OW was cut down by 0.17 ft.
 Top of casing elevations in this table were adjusted accordingly.
 *: Well was frozen

^: Monitoring well adjustments and resurveys:
 Monitoring well 38R-OW was extended on October 30, 2020 during repairs following well damage by pond closure construction equipment.
 Monitoring Well 40-OW cut down to have a top of casing elevation of 586.05 fmsl on December 3, 2021.
 All active monitoring wells were resurveyed in January 2023. These elevations are retroactively applied to 2022 monitoring events. Total well depth, top of well screen elevation, and bottom of well elevation were not updated unless the well casing was extended or cut down.

I:\25224068.00\Deliverables\2024 - Annual CCR Report\Tables\[Table 3A - EDG wlstat GW Elevation Summary.xls]levels

**Table 3B. Groundwater Elevations - CCR Monitoring Wells
WPL - Edgewater 1-4 (Closed) Ash Disposal Facility /
SCS Engineers Project #25224068.00**

Raw Data	Depth to Water in feet below top of well casing				
	MW-301	MW-302	MW-303	MW-304	2R-OW
Measurement Date					
April 8, 2016	4.67	18.96	22.95	NI	3.04
June 20, 2016	6.12	19.47	24.77	NI	6.02
August 9, 2016	6.42	19.62	24.27	NI	6.98
October 20, 2016	5.92	19.69	23.62	NI	5.45
January 23-24, 2017	7.32	18.85	23.15	NI	3.08
April 6, 2017	4.38	21.58	22.95	NI	3.00
October 24, 2017	5.65	19.29	23.55	NI	5.09
August 1, 2017	7.02	19.93	24.63	NI	8.13
October 24, 2017	7.22	19.90	24.02	NI	10.98
April 2, 2018	5.88	19.44	23.22	NI	4.85
October 1, 2018	6.82	19.87	23.82	NI	8.11
April 8, 2019	5.50	19.47	23.11	NI	3.22
October 7, 2019	4.86	19.57	23.22	NI	3.33
June 26, 2020	6.53	NM	NM	NI	NM
October 15, 2020	9.32	16.59	18.80	NI	8.45
April 14, 2021	9.25	14.59	16.98	NI	4.22
October 26, 2021	13.74	15.33	17.92	NI	8.68
April 13, 2022	9.53	14.65	16.79	NI	3.22
October 6, 2022	14.21	15.74	18.36	NI	9.92
April 25-26, 2023	9.13	14.07	16.79	NI	4.11
October 10, 2023	14.39	15.69	18.99	NI	11.47
April 16, 2024	9.52	14.18	16.90	15.40	4.15
July 26, 2024	--	--	--	15.81	--
August 28, 2024	--	--	--	15.53	--
October 3, 2024	12.66	14.69	18.08	16.08	9.22
November 4, 2024	--	--	--	16.11	--
December 4, 2024	--	--	--	16.42	--

Ground Water Elevation in feet above mean sea level (amsl)					
Well Number	MW-301	MW-302	MW-303	MW-304	2R-OW
Top of Casing Elevation - Old⁽¹⁾	604.42	615.15	611.99	--	612.72
Top of Casing - 11/2020 Survey - Old⁽¹⁾	606.06	606.77	603.87	--	NM
Top of Casing Elevation (feet AMSL)^(1,2,3,4)	606.90	607.70	604.78	609.24	611.85
Screen Length (ft)	5.00	5.00	5.00	10.00	10.00
Total Depth (ft from top of casing)	29.95	32.55	26.05	37.80	13.63
Top of Well Screen Elevation (ft)	581.95	580.15	579.60	581.44	608.22
Measurement Date					
April 8, 2016	599.75	596.19	589.04	NI	609.68
June 20, 2016	598.30	595.68	587.22	NI	606.70
August 9, 2016	598.00	595.53	587.72	NI	605.74
October 20, 2016	598.50	595.46	588.37	NI	607.27
January 23-24, 2017	597.10	596.30	588.84	NI	609.64
April 6, 2017	600.04	593.57	589.04	NI	609.72
October 24, 2017	598.77	595.86	588.44	NI	607.63
August 1, 2017	597.40	595.22	587.36	NI	604.59
October 24, 2017	597.20	595.25	587.97	NI	601.74
April 2, 2018	598.54	595.71	588.77	NI	607.87
October 1, 2018	597.60	595.28	588.17	NI	604.61
April 8, 2019	598.92	595.68	588.88	NI	609.50
October 7, 2019	599.56	595.58	588.77	NI	609.39
June 26, 2020	597.89	NM	NM	NI	NM
October 15, 2020	595.10	590.18	585.07	NI	604.27
April 14, 2021	596.81	592.18	586.89	NI	608.50
October 26, 2021	592.32	591.44	585.95	NI	604.04
April 13, 2022	597.37	593.05	587.99	NI	608.63
October 6, 2022	592.69	591.96	586.42	NI	601.93
April 25-26, 2023	597.77	593.63	587.99	NI	607.74
October 10, 2023	592.51	592.01	585.79	NI	600.38
April 16, 2024	597.38	593.52	587.88	593.84	607.70
July 26, 2024	--	--	--	593.43	--
August 28, 2024	--	--	--	593.71	--
October 3, 2024	594.24	593.01	586.70	593.16	602.63
November 4, 2024	--	--	--	593.13	--
December 4, 2024	--	--	--	592.82	--
Bottom of Well Elevation (ft)	576.95	575.15	578.73	571.44	598.22

Notes:

NM = not measured

NI = not installed

(1): MW-302 and MW-303 were shortened in September 2020 due to site regrading during pond closure. The wells were resurveyed in November 2020.

(2): MW-301 was extended in November 2020 due to site regrading during pond closure. The well was resurveyed in November 2020.

(3): All site wells were re-surveyed in January 2023, and elevations were tied to NGS benchmark PID #DE7593.

(4): Current TOC elevation and total well depth shown in table. Groundwater elevations prior to the most recent survey were calculated with the previous TOC elevations unless otherwise noted.

Created by:	MDB	Date:	6/27/2016
Last rev. by:	EMS	Date:	11/4/2024
Checked by:	RM	Date:	11/8/2024
Scientist QA/QC:	TK	Date:	1/5/2025

**Table 4. Horizontal Gradients and Flow Velocity - CCR Monitoring Wells
Edgewater 1-4 Closed Ash Disposal Facility / SCS Engineers Project #25224068.00
January - December 2024**

Flow Path A - South					
Sampling Dates	h1 (ft)	h2 (ft)	Δl (ft)	Δh/Δl (ft/ft)	V (ft/d)
4/15-17/2024	590.00	587.88	210	0.01	0.01

Flow Path B1 - Southeast					
Sampling Dates	h1 (ft)	h2 (ft)	Δl (ft)	Δh/Δl (ft/ft)	V (ft/d)
10/3/2024	593.01	585.65	200	0.04	0.03
	Flow Path B2 - South				
	590.00	586.70	255	0.01	0.01

Wells	K Value (cm/sec)	K Value (ft/d)	Assumed Porosity, n
MW-301	2.1E-05	0.060	
MW-302	4.0E-04	1.139	
MW-303	1.1E-04	0.304	
Geometric Mean	9.7E-05	0.274	
			0.40

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

ft = feet

ft/d = feet per day

K = hydraulic conductivity

n = effective porosity

V = groundwater flow velocity

h1, h2 = point interpreted groundwater elevation at locations 1 and 2

Δl = distance between location 1 and 2

Δh/Δl = hydraulic gradient

Note:

1. See Figures 3 and 4 for velocity calculation flow path locations.

Last revision by: NLB

Date: 1/7/2025

Checked by: BLR

Date: 1/8/2024

**Table 5. Groundwater Analytical Results Summary - October 2023 and April 2024
Edgewater 1-4 Closed Ash Disposal Facility / SCS Engineers Project #25224068.00**

Parameter Name	UPL	Background Well		Compliance Wells							
		2R-OW		MW-301		MW-302		MW-303		MW-304	
		10/10/2023	4/16/2024	10/10/2023	4/16/2024	10/10/2023	4/16/2024	10/10/2023	4/16/2024	4/16/2024	7/27/2024
Groundwater Elevation, ft amsl		600.38	607.7	592.51	597.38	592.01	593.52	585.79	587.88	593.84	593.43
Appendix III											
Boron, µg/L	78.4	33.5	36.7	6,600	6,490	1,400	1,610	4,160	5,100	4,780 P6	--
Calcium, µg/L	201,000	156,000 P6	109,000	98,500	93,900	59,400	48,600	134,000	148,000	278,000 P6	83,800 P6
Chloride, mg/L	456	420	67.4	18.3	18.8	22.0	<3.0 D3	19.9	22.9	22.1	--
Fluoride, mg/L	0.200	<0.95 D3	0.14 J, M0	0.20 J	0.27 J	0.85	<0.48 D3	<0.095	<0.095	0.80 J, D3	--
Field pH, Std. Units	8.57	7.06	6.99	7.66	7.34	7.89	7.58	6.99	6.64	7.40	7.68
Sulfate, mg/L	36.7	28.7	9.0 M0	185	191	57.5	6.0 J, D3	<0.44	<0.44	99.5	--
Total Dissolved Solids, mg/L	1,220	1,080	566	560	572	308	348	600	724	474	--

4.4 Blue shaded cell indicates the compliance well result exceeds the UPL (background) and the Limit of Quantitation (LOQ).

Abbreviations:

UPL = Upper Prediction Limit

LOD = Limit of Detection

mg/L = milligrams per liter

LOQ = Limit of Quantitation

µg/L = micrograms per liter

Lab Notes:

D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

J = Estimated concentration at or above the LOD and below the LOQ.

P6 = Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

M0 = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

Notes:

1. An individual result above the UPL does not constitute an SSI above background. See the accompanying report text for identification of statistically significant results.

2. Interwell UPLs calculated based on results from background well 2R-OW. Interwell UPLs based on

1-of-2 retesting approach. The interwell UPLs were updated in July 2023 using data from April 2016 through April 2023.

Last revision by: RM
 Checked by: LH
 Scientist/PM QA/QC: _____

Date: 1/17/2025
 Date: 1/17/2025
 Date: _____

Table 6. Groundwater Field Data Summary
Edgewater 1-4 Closed Ash Disposal Facility / SCS Engineers Project #25224068.00

Well	Sample Date	Groundwater Elevation (ft amsl)	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	10/10/2023	592.51	10.4	7.66	4.85	339	548	--
	4/16/2024	597.38	9.7	7.34	4.32	785	132.1	33.5
MW-302	10/10/2023	592.01	11.7	7.89	1.40	465	310.8	4.8
	4/16/2024	593.52	10.6	7.58	1.77	481	-51.9	10.2
MW-303	10/10/2023	585.79	11.4	6.99	3.49	1030	311.5	--
	4/16/2024	587.88	10.5	6.64	4.65	1155	-61.6	50.8
MW-304	4/16/2024	593.84	9.8	7.40	2.79	563	225.7	--
	7/26/2024	593.43	11.0	7.68	0.09	573	-2.6	63.4
	8/28/2024	593.71	11.1	7.70	0.11	572	-26.5	30.2
2R-OW	10/10/2023	600.38	12.7	7.06	1.22	1,902	544.4	3.8
	4/16/2024	607.70	8.6	6.99	0.70	952	133.4	3.6

Abbreviations:

mg/L = milligrams per liter

ft amsl = feet above mean sea level

NTU = Nephelometric Turbidity Unit

umhos/cm = micromhos per centimeter

deg C = Degrees Celsius

mV = millivolts

-- = Not analyzed

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

Date: 9/19/2022
 Date: 1/17/2025
 Date: 1/17/2025

**Table 7. Groundwater Analytical Results Summary - April, July, and August 2024
Edgewater 1-4 Closed Ash Disposal Facility / SCS Engineers Project #25224068.00**

Parameter Name	UPL		MW-304		
			4/16/2024	7/26/2024	8/28/2024
Groundwater Elevation, ft amsl			593.84	593.43	593.71
Appendix III					
Boron, µg/L	78.4		4,780 P6	--	4230
Calcium, µg/L	201,000		278,000 P6	83,800 P6	82,700
Chloride, mg/L	456		22.1	--	25
Fluoride, mg/L	0.200		0.80 J, D3	--	0.83
Field pH, Std. Units	8.57		7.40	7.68	7.70
Sulfate, mg/L	36.7		99.5	--	94.5
Total Dissolved Solids, mg/L	1,220		474	--	404
Appendix IV					
	UPL	GPS			
Antimony, µg/L	NA	6	<0.30 D3	--	<0.15
Arsenic, µg/L	NA	10	6.9	--	1.4
Barium, µg/L	NA	2,000	293	--	69.1
Beryllium, µg/L	NA	4	1.3 J, D3	--	<0.25
Cadmium, µg/L	NA	5	<0.30 D3	--	<0.15
Chromium, µg/L	NA	100	42.5	--	1.6 J
Cobalt, µg/L	NA	6	13.7	--	0.72 J
Fluoride, mg/L	NA	4	0.8 J, D3	--	0.83
Lead, µg/L	NA	15	12	--	0.47 J
Lithium, µg/L	NA	40	82.8	--	57.9
Mercury, µg/L	NA	2	<0.066	--	<0.066
Molybdenum, µg/L	NA	100	2,630	--	1950
Selenium, µg/L	NA	50	0.95 J, D3	--	<0.32
Thallium, µg/L	NA	2	0.32 J, D3	--	<0.14
Radium 226/228 Combined, pCi/L	NA	5	1.92	--	0.672



Blue shaded cell indicates the compliance well result exceeds the UPL (background) and the Limit of Quantitation (LOQ).



Yellow highlighted cell indicates the compliance well result exceeds the GPS.

Abbreviations:

UPL = Upper Prediction Limit

GPS = Groundwater Protection Standard

LOD = Limit of Detection

LOQ = Limit of Quantitation

mg/L = milligrams per liter

µg/L = micrograms per liter

Lab Notes:

D3 = Sample was diluted due to the presence of high levels

J = Estimated concentration at or above the LOD and below the LOQ.

P6 = Matrix spike recovery was outside laboratory control limits due to a parent

Notes:

1. An individual result above the UPL does not constitute an SSI above background. See the accompanying report text for

2. Interwell UPLs calculated based on results from background well 2R-OW. Appendix III interwell UPLs based on

1-of-2 retesting approach. The interwell UPLs were updated in July 2023 using data from April 2016 through April 2023.

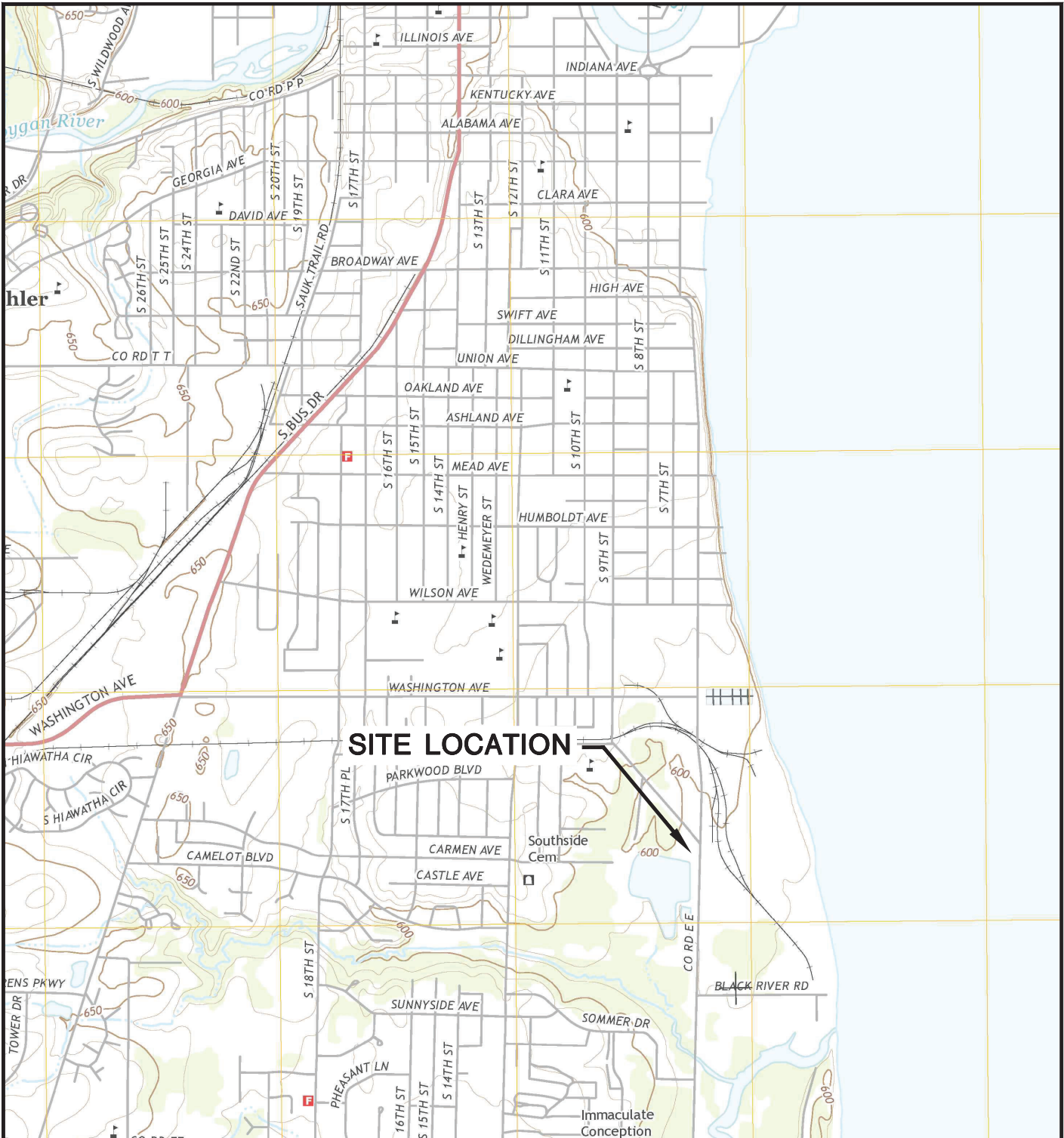
3. UPLs for Appendix IV parameters will be calculated once the minimum of four assessment monitoring sampling events have been completed.

Last revision by: RM
Checked by: LH

Date: 1/17/2025
Date: 1/17/2025

Figures

- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations
- 3 Water Table Elevation Contour Map – April 2024
- 4 Water Table Map – October 2024



SITE LOCATION

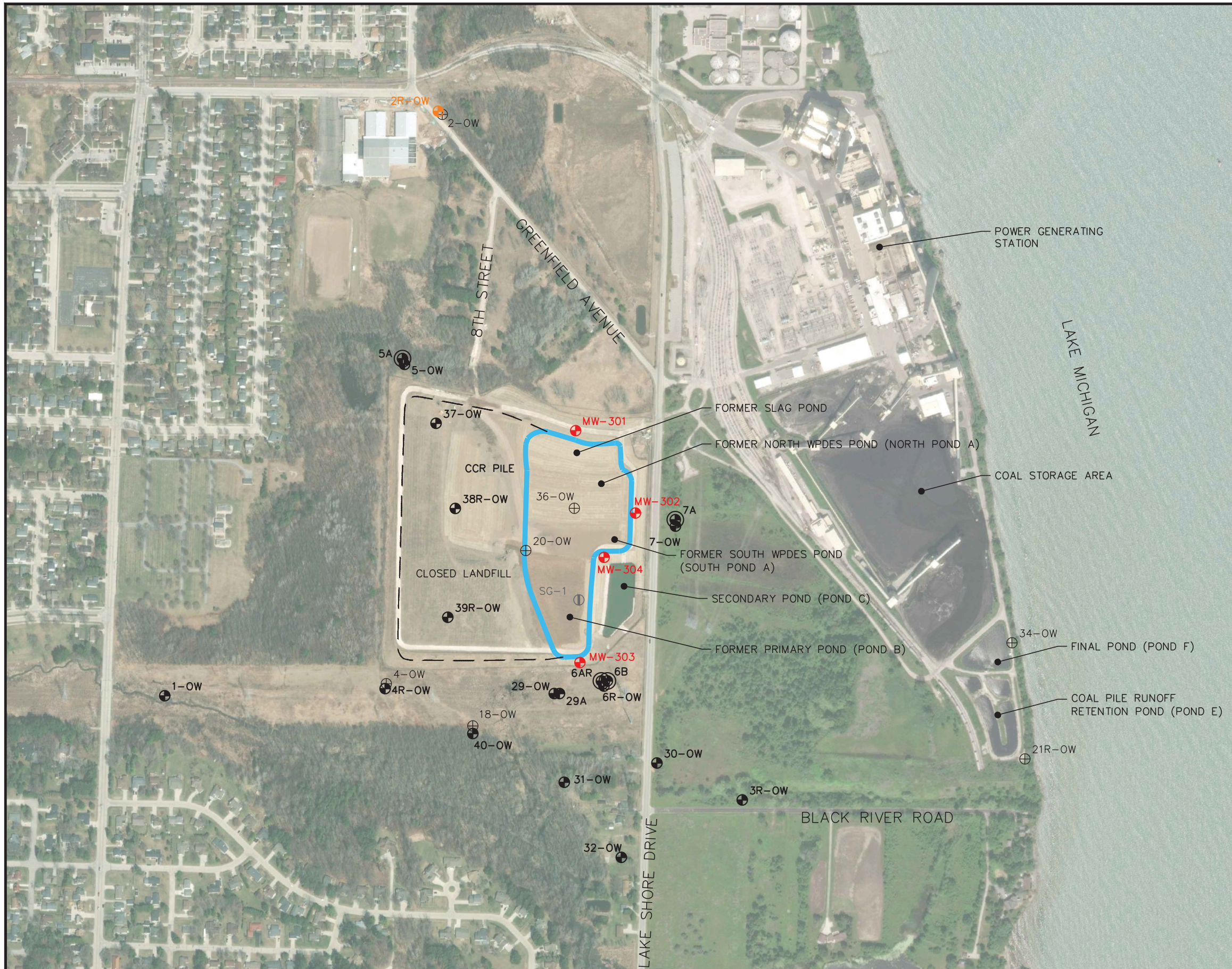


SHEBOYGAN FALLS QUADRANGLE
 WISCONSIN—SHEBOYGAN CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)
 2015
 SCALE: 1" = 2,000'



CLIENT	ALLIANT ENERGY	SITE	WISCONSIN POWER AND LIGHT EDGEWATER 1-43 (CLOSED) ASH DISPOSAL FACILITY SHEBOYGAN, WISCONSIN	ENGINEER	 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE	1
	PROJECT NO. 25221068.00		DRAWN BY: AHB				
	DRAWN: 02/08/16	CHECKED BY: JR					
	REVISED: 02/09/16	APPROVED BY: TK, 3/14/2022					

I:\25215135\Drawings\1-43\Site Loc. dwg, 2/9/2016 11:19:54 AM

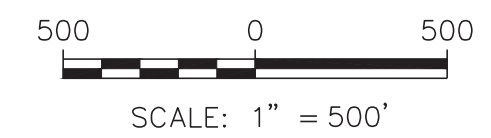


LEGEND

- CCR RULE MONITORING WELL
- CCR RULE BACKGROUND MONITORING WELL
- ADDITIONAL MONITORING WELL
- ⊕ ADDITIONAL PIEZOMETER
- ⊕ ABANDONED MONITORING WELL
- ⊕ ABANDONED STAFF GAUGE
- CCR UNITS
- CLOSED LANDFILL LIMITS

NOTES:

1. AERIAL PHOTOGRAPH FROM ARCMAP WORLDMAP: MAXAR. DATE OF IMAGE IS APRIL 3, 2021.
2. WELL LOCATIONS ARE APPROXIMATE AND ARE BASED ON OCTOBER 2011 WATER TABLE MAP PREPARED BY TRC.
3. CCR UNIT LIMITS AND CLOSED LANDFILL LOCATION ARE APPROXIMATE.
4. MONITORING WELLS MW-301, MW-302, AND MW-303 WERE INSTALLED BY BADGER STATE DRILLING BETWEEN JANUARY 14 AND FEBRUARY 4, 2016.
5. MONITORING WELL MW-304 WAS INSTALLED BY HORIZON CONSTRUCTION AND EXPLORATION, LLC ON FEBRUARY 5, 2024.
6. THE BACKGROUND MONITORING WELL FOR THE EDGEWATER GENERATING STATION IS 2R-OW.



PROJECT NO.	25224068.00	DRAWN BY:	BSS	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	CLIENT	WISCONSIN POWER AND LIGHT EDGEWATER GENERATING STATION 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081	SITE	EDGEWATER 1-4 (CLOSED) ASH DISPOSAL FACILITY SHEBOYGAN, WISCONSIN	FIGURE
DRAWN:	11/20/2019	CHECKED BY:	MDB						SITE PLAN AND MONITORING WELL LOCATIONS
REVISED:	07/19/2024	APPROVED BY:	TK, 7/23/24						2

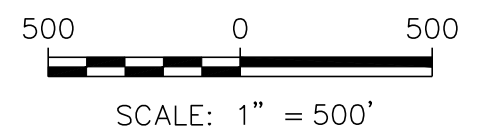
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LEGEND

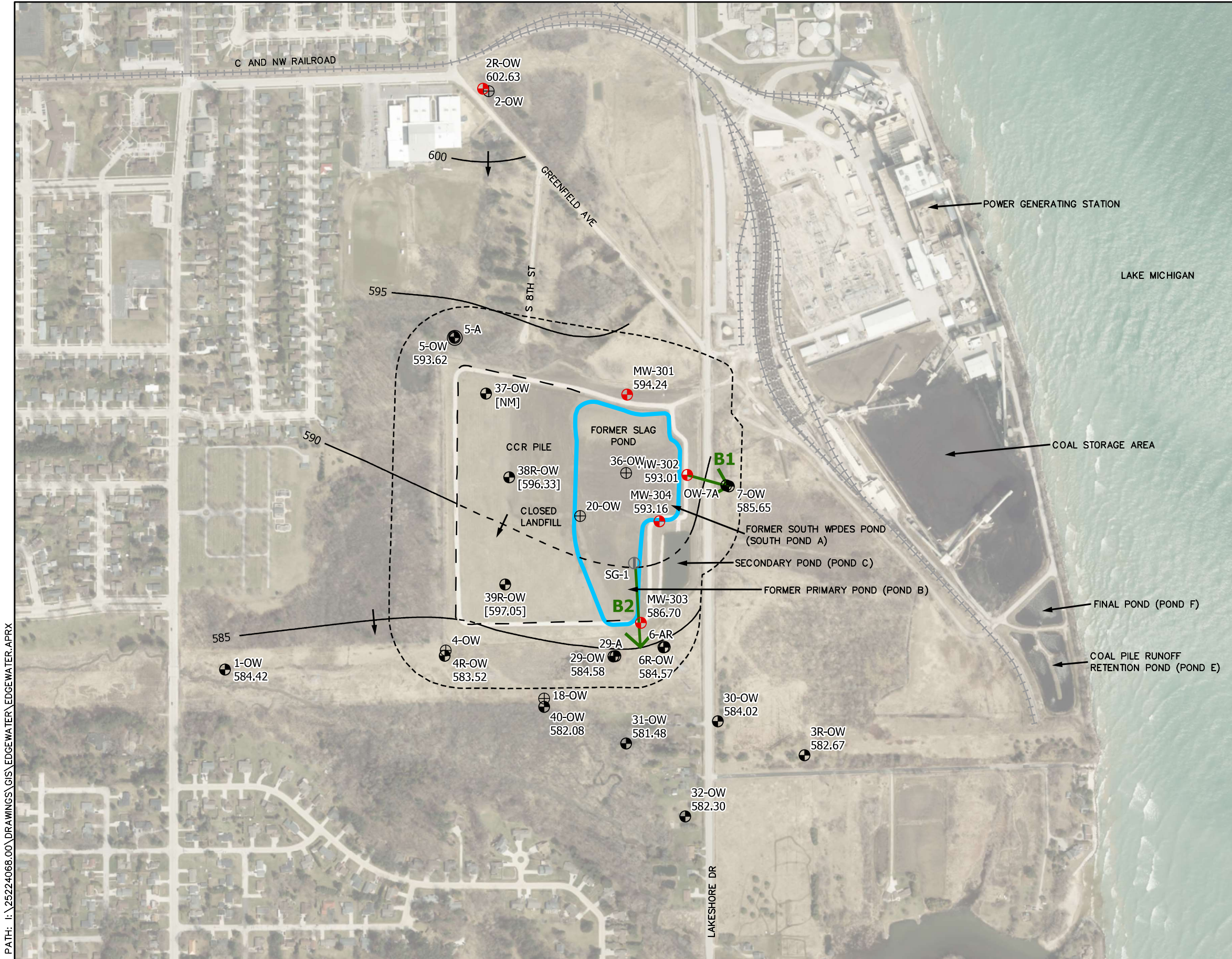
- ⊕ ABANDONED MONITORING WELL
- ⊕ CCR MONITORING WELL
- MONITORING WELL
- ⊕ PIEZOMETER
- ⊕ ABANDONED STAFF GAUGE
- CCR UNITS
- - - CLOSED LANDFILL LIMITS
- - - - - DESIGN MANAGEMENT ZONE
- [591.87]** WATER TABLE ELEVATION (APRIL 15-17, 2024) (WITHIN LANDFILL)
- 590.26** WATER TABLE ELEVATION (APRIL 15-17, 2024)
- - - WATER TABLE ELEVATION CONTOUR (5' INTERVAL) (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4)

- NOTES:**
- AERIAL PHOTOGRAPH FROM ARCMAP WORLDMAP: MAXAR. DATE OF IMAGE IS APRIL 3, 2021.
 - STATE MONITORING PROGRAM WELL LOCATIONS ARE APPROXIMATE AND ARE BASED ON OCTOBER 2011 WATER TABLE MAP PREPARED BY TRC.
 - DESIGN MANAGEMENT ZONE LOCATION IS APPROXIMATE
 - NEW MONITORING WELL LOCATIONS WERE SURVEYED BY CQM, INC. ON FEBRUARY 12, 2016.
 - MW-301, MW-302, MW-303, AND MW-304 ARE NOT INCLUDED IN THE WDNR-APPROVED SITE-SPECIFIC MONITORING PLAN
 - GROUNDWATER ELEVATIONS MEASURED ON APRIL 15-17, 2024.



PROJECT NO. 25224068.00	DRAWN BY: SB	SCS ENGINEERS	CLIENT WISCONSIN POWER AND LIGHT EDGEWATER GENERATING STATION 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081	SITE EDGEWATER 1-4 (CLOSED) ASH DISPOSAL FACILITY SHEBOYGAN, WISCONSIN	WATER TABLE ELEVATION CONTOUR MAP APRIL 2024	FIGURE 3
DRAWN: 06/21/2024	CHECKED BY: NLB					
REVISED: 01/13/2025	APPROVED BY: SCC, 1/30/2025					

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LEGEND

- ⊕ ABANDONED MONITORING WELL
- ⓪ ABANDONED STAFF GAUGE
- ⊕ CCR MONITORING WELL
- ⊕ MONITORING WELL
- ⊕ PIEZOMETER
- CCR UNITS
- - - CLOSED LANDFILL LIMITS
- - - - DESIGN MANAGEMENT ZONE
- ++++ RAILROAD TRACK
- ➔ FLOW PATH FOR VELOCITY CALCULATION
- ➔ APPROXIMATE GROUNDWATER FLOW DIRECTION
- 5 FT GROUNDWATER ELEVATION CONTOUR
- - - - INFERRED
- INTERPOLATED
- [596.33] WATER TABLE ELEVATION WITHIN LANDFILL (OCTOBER 2-4, 2024)
- 593.16 WATER TABLE ELEVATION (OCTOBER 2-4, 2024)

NOTES

1. IMAGERY SOURCE: SHEBOYGAN COUNTY. DATE: 04/10/2022.
2. COORDINATE SYSTEM: NAD 1983 (2011) STATEPLANE WISCONSIN SOUTH FIPS 4803 (US FEET).
3. RAILROAD DATA FROM BUREAU OF TRANSPORTATION STATISTICS (BTS); FEDERAL RAILROAD ADMINISTRATION (FRA).
4. STATE MONITORING PROGRAM WELL LOCATIONS ARE APPROXIMATE AND ARE BASED ON OCTOBER 2011 WATER TABLE MAP PREPARED BY TRC.
5. DESIGN MANAGEMENT ZONE LOCATION IS APPROXIMATE.
6. MONITORING WELL LOCATIONS WERE SURVEYED BY CEDAR CREEK SURVEYING, LLC ON JANUARY 10 AND 16, 2023.
7. MW-301, MW-302, MW-303, AND MW-304 ARE NOT INCLUDED IN THE DNR-APPROVED SITE-SPECIFIC MONITORING PLAN.
8. GROUNDWATER LEVELS MEASURED ON OCTOBER 2-4, 2024.



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PROJECT NO.	25224068.00	DRAWN BY:	AA
DRAWN:	10/09/2024	CHECKED BY:	NLB
REVISED:	01/13/2024	APPROVED BY:	SCC, 1/30/2025

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

CLIENT
 WISCONSIN POWER AND LIGHT
 EDGEWATER GENERATING STATION
 3739 LAKESHORE DRIVE
 SHEBOYGAN, WI 53081

SITE
 EDGEWATER 1-4 (CLOSED)
 ASH DISPOSAL FACILITY
 SHEBOYGAN, WISCONSIN

WATER TABLE MAP OCTOBER 2024	FIGURE 4
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Appendix A
Summary of the Regional Hydrogeologic Stratigraphy

**Table EGS-3. Regional Hydrogeologic Stratigraphy
Edgewater Generating Station / SCS Engineers Project #25215053**

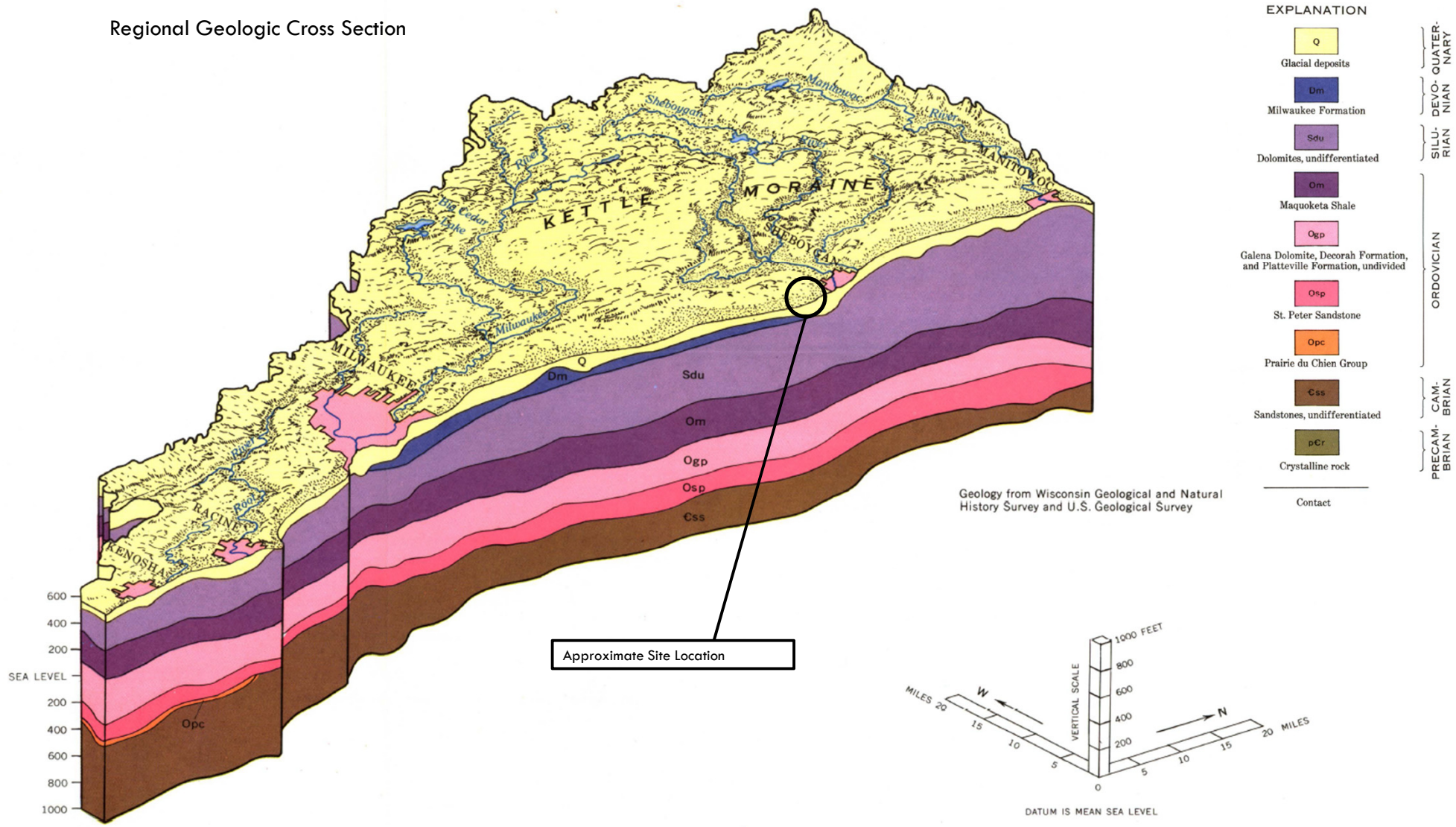
Age	Hydrogeologic Unit	General Thickness (feet)	Name of Rock Unit*	Predominant Lithology
Quaternary	Sand and Gravel Aquifer	0 to 235	Surface sand and gravel	Sand and Gravel
		0 to 300	Buried sand and gravel	
Devonian	Niagara Dolomite Aquifer	0 to 750	Dolomite (undifferentiated)	Dolomite
Silurian				
Ordovician	Confining Unit	0 to 400	Maquoketa Shale	Shale and dolomite
	Sandstone Aquifer	100 to 340	Galena Decorah Platteville	Dolomite
		0 to 330	St. Peter	Sandstone
		0 to 140	Prairie du Chien	Dolomite
Cambrian		0 to 3,500?	Trempeleau Franconia Galesville Eau Claire Mt. Simon	Sandstone, some Dolomite and Shale
Precambrian	Not an Aquifer	Unknown	Crystalline Rocks	Igneous and metamorphic rocks

Source:

Skinner, Earl L. and Ronald G. Borman, Water Resources of Wisconsin-Lake Michigan Basin, Department of the Interior United States Geological Survey Hydrogeologic Investigations Atlas HA-432, 1973.

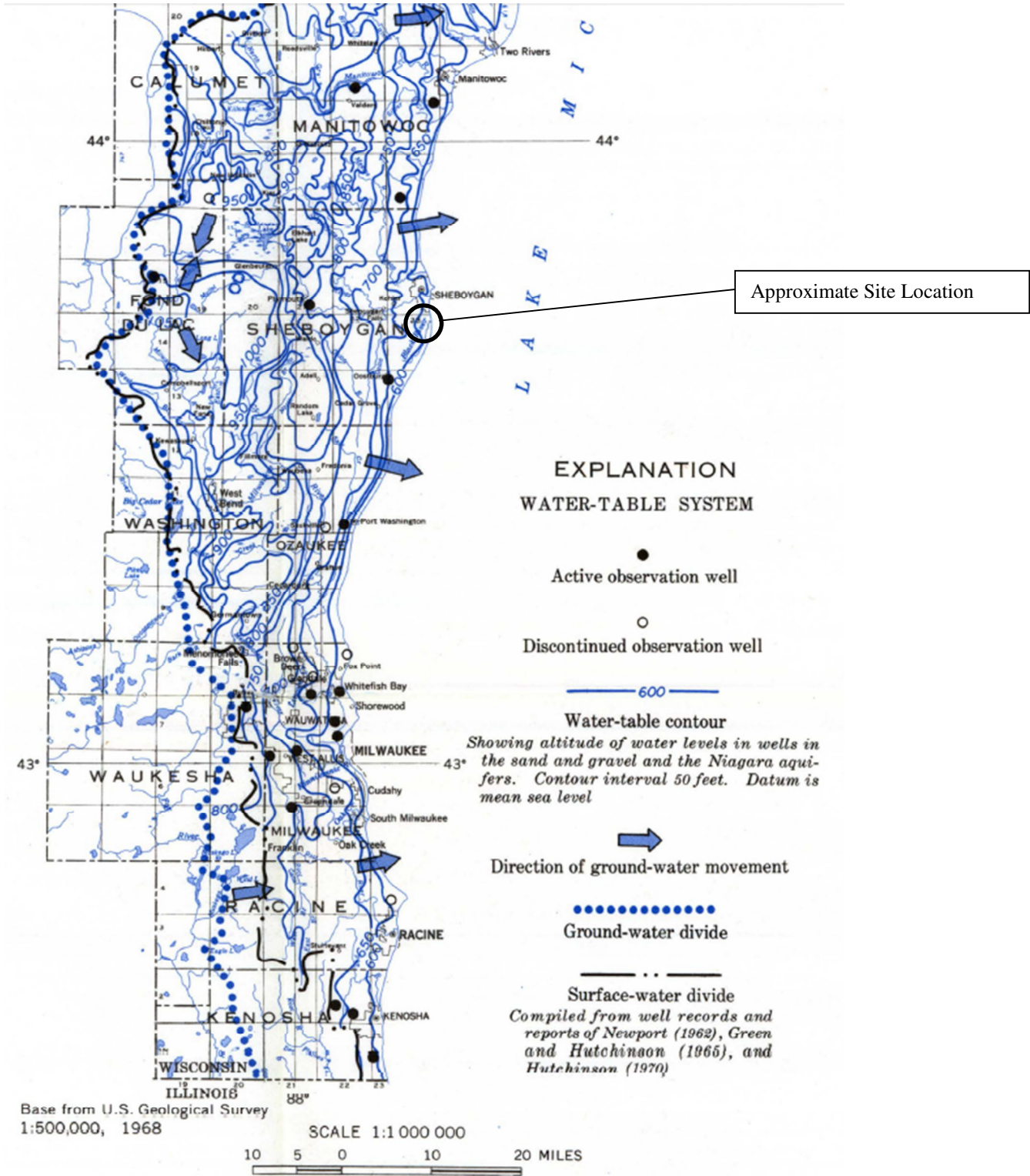
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Regional Geologic Cross Section



Source: Skinner, Earl L. and Ronald G. Borman, Water Resources of Wisconsin-Lake Michigan Basin, Department of the Interior United States Geological Survey Hydrogeologic Investigations Atlas HA-432, 1973.

Regional Groundwater Flow Map – Uppermost Aquifer



Source: Skinner, Earl L. and Ronald G. Borman, Water Resources of Wisconsin-Lake Michigan Basin, Department of the Interior United States Geological Survey Hydrogeologic Investigations Atlas HA-432, 1973.

Appendix B

Boring Logs and Well Construction Documentation

Facility/Project Name <i>WPHL Edgewater Site</i>	Local Grid Location of Well <i>1771.89 ft. N. 1599.69 ft. W.</i>	Well Name <i>2A-OW</i>
Facility License, Permit or Monitoring Number <i>02524</i>	Grid Origin Location Lat. _____ Long. _____ or St. Plane _____ ft. N. _____ ft. E.	Wis. Unique Well Number : DNR Well Number
Type of Well Water Table Observation Well <input checked="" type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	Section Location of Waste/Source <i>NE 1/4 of NE 1/4 of Sec. 2, T. 14 N, R. 23 E W.</i>	Date Well Installed <i>4/29/98</i> m m d d y y
Distance Well Is From Waste/Source Boundary ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Well Installed By: (Person's Name and Firm) <i>Mike McArtole</i> <i>M&K Environmental</i>
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

A. Protective pipe, top elevation <i>612.80</i> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <i>612.72</i> ft. MSL	2. Protective cover pipe: a. Inside diameter: _____ in. b. Length: _____ ft. c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
C. Land surface elevation <i>610.3</i> ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or <i>1.0</i> ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input checked="" type="checkbox"/> 30 Annular space seal <input type="checkbox"/> Other <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite ... Bentonite-cement grout <input type="checkbox"/> 50 e. _____ Ft ³ volume added for any of the above f. How installed: Tremie <input checked="" type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input type="checkbox"/> 08
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	6. Bentonite seal: a. Bentonite granules <input checked="" type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. _____ Other <input type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	7. Fine sand material: Manufacturer, product name & mesh size a. <i>Badger Mine 65-75</i> b. Volume added _____ ft ³
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	8. Filter pack material: Manufacturer, product name and mesh size a. <i>Badger Mine 65-75</i> b. Volume added _____ ft ³
Describe _____	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
17. Source of water (attach analysis):	10. Screen material: <i>PVC</i> a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
E. Bentonite seal, top _____ ft. MSL or <i>1.0</i> ft.	b. Manufacturer <i>Bevrock Inc.</i> c. Slot size: <i>0.010</i> in. d. Slotted length: _____ ft.
F. Fine sand, top _____ ft. MSL or <i>3.5</i> ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
G. Filter pack, top _____ ft. MSL or <i>3.5</i> ft.	
H. Screen joint, top _____ ft. MSL or <i>4.5</i> ft.	
I. Well bottom _____ ft. MSL or <i>14.5</i> ft.	
J. Filter pack, bottom _____ ft. MSL or <i>14.5</i> ft.	
K. Borehole, bottom _____ ft. MSL or <i>14.5</i> ft.	
L. Borehole, diameter <i>8.0</i> in.	
M. O.D. well casing <i>2.38</i> in.	
N. I.D. well casing <i>2.00</i> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature *[Signature]* Firm *Miller Engineers & Scientists*

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name WPL-Edgewater Generating Station	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> E. <input type="checkbox"/> S. <input type="checkbox"/> W.	Well Name MW-301
Facility License, Permit or Monitoring No. 02524	Local Grid Origin (estimated: <input type="checkbox"/>) or Well Location <input checked="" type="checkbox"/> "Long." Lat. _____ or _____	Wis. Unique Well No. <input checked="" type="checkbox"/> VV862 DNR Well ID No. _____
Facility ID 460021980	St. Plane 632740.8 ft. N, 2573428.5 ft. E. S/C/N	Date Well Installed m / d / y 1 / 15 / 2016
Type of Well Well Code 12 / PZ	Section Location of Waste/Source NE 1/4 of NW 1/4 of Sec. 02, T. 14 N, R. 23 <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Kevin Durst
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Badger State Drilling

- A. Protective pipe, top elevation --- 604.61 ft. MSL
- B. Well casing, top elevation --- 604.42 ft. MSL
- C. Land surface elevation --- 601.95 ft. MSL
- D. Surface seal, bottom --- 601.45 ft. MSL or --- 0.5 ft.

12. USCS classification of soil near screen:
 GP GM GC GW SW SP
 SM SC ML MH CL CH
 Bedrock

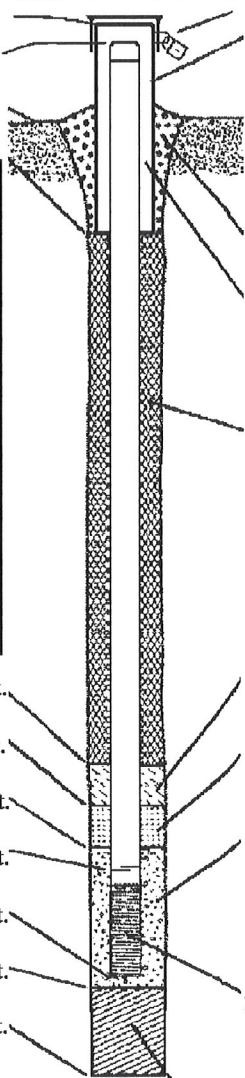
13. Sieve analysis performed? Yes No

14. Drilling method used: Rotary 50
 Hollow Stem Auger 41
 Other

15. Drilling fluid used: Water 02 Air 01
 Drilling Mud 03 None 99

16. Drilling additives used? Yes No
 Describe _____

17. Source of water (attach analysis, if required):
 None



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: 6.0 in.
 - b. Length: 5.0 ft.
 - c. Material: Steel 04
Other
 - d. Additional protection? Yes No
If yes, describe: Steel Posts -3
- 3. Surface seal:
 - Bentonite 30
 - Concrete 01
 - Other
- 4. Material between well casing and protective pipe:
 - Bentonite 30
 - Ohio #5 Sand
 - Other
- 5. Annular space seal:
 - a. Granular/Chipped Bentonite 33
 - b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry 35
 - c. _____ Lbs/gal mud weight Bentonite slurry 31
 - d. _____ % Bentonite Bentonite-cement grout 50
 - e. _____ Ft³ volume added for any of the above
 - f. How installed: Tremie 01
Tremie pumped 02
Gravity 08
- 6. Bentonite seal:
 - a. Bentonite granules 33
 - b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 32
 - c. _____ Other
- 7. Fine sand material: Manufacturer, product name & mesh size
 - a. _____ Ohio #7
 - b. Volume added _____ 0.5 ft³
- 8. Filter pack material: Manufacturer, product name & mesh size
 - a. _____ Ohio #5
 - b. Volume added _____ 2 ft³
- 9. Well casing:
 - Flush threaded PVC schedule 40 23
 - Flush threaded PVC schedule 80 24
 - Other
- 10. Screen material: 2" dia PVC Sch 40
 - a. Screen type:
 - Factory cut 11
 - Continuous slot 01
 - Other
 - b. Manufacturer _____ Monoflex
 - c. Slot size: 0.010 in.
 - d. Slotted length: 5.0 ft.
- 11. Backfill material (below filter pack):
 - None 14
 - 3/8 Bentonite Chips
 - Other

- E. Bentonite seal, top --- 601.45 ft. MSL or --- 0.5 ft.
- F. Fine sand, top --- 585.95 ft. MSL or --- 16 ft.
- G. Filter pack, top --- 583.95 ft. MSL or --- 18 ft.
- H. Screen joint, top --- 581.95 ft. MSL or --- 20 ft.
- I. Well bottom --- 576.95 ft. MSL or --- 25 ft.
- J. Filter pack, bottom --- 573.95 ft. MSL or --- 28 ft.
- K. Borehole, bottom --- 565.95 ft. MSL or --- 36 ft.
- L. Borehole, diameter --- 8.5 in.
- M. O.D. well casing --- 2.04 in.
- N. I.D. well casing --- 2.0 in.

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

Signature: *[Signature]* for Kyle Kramer Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a 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 these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name WPL-Edgewater Generating Station	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name MW-302
Facility License, Permit or Monitoring No. 02524	Local Grid Origin (estimated: <input type="checkbox"/>) or Well Location <input checked="" type="checkbox"/> Lat. _____ " Long. _____ or	Wis. Unique Well No. <u>VV861</u> DNR Well ID No. _____
Facility ID 460021980	St. Plane <u>632342.6</u> ft. N. <u>2573726.3</u> ft. E. S/C/N	Date Well Installed <u>1</u> / <u>15</u> / <u>2016</u> m m d d y y y y
Type of Well Well Code <u>12</u> / <u>PZ</u>	Section Location of Waste/Source <u>SE</u> 1/4 of <u>NW</u> 1/4 of Sec. <u>02</u> , T. <u>14</u> N, R. <u>23</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm <u>Kevin Durst</u>
Distance from Waste/ Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Gov. Lot Number _____ <u>Badger State Drilling</u>

A. Protective pipe, top elevation	<u>615</u> <u>35</u> ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
B. Well casing, top elevation	<u>615</u> <u>15</u> ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>6.0</u> in.
C. Land surface elevation	<u>612</u> <u>65</u> ft. MSL	b. Length: <u>5.0</u> ft.
D. Surface seal, bottom	<u>612</u> <u>15</u> ft. MSL or <u>0.5</u> ft.	c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input checked="" type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>		d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: <u>Steel posts</u>
13. Sieve analysis performed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		3. Surface seal: Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>		4. Material between well casing and protective pipe: <u>Ohio #5 Sand</u> Other <input type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99		5. Annular space seal: a. Granular/Chipped Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite Bentonite-cement grout <input type="checkbox"/> 50 e. _____ Ft ³ volume added for any of the above
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe _____		f. How installed: Tremie <input checked="" type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input type="checkbox"/> 08
17. Source of water (attach analysis, if required): <u>None</u>		6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input checked="" type="checkbox"/> 32 c. _____ Other <input type="checkbox"/>
E. Bentonite seal, top	<u>612</u> <u>15</u> ft. MSL or <u>0.5</u> ft.	7. Fine sand material: Manufacturer, product name & mesh size a. <u>Ohio #7 sand</u> <input type="checkbox"/>
F. Fine sand, top	<u>584</u> <u>15</u> ft. MSL or <u>28.5</u> ft.	b. Volume added <u>0.5</u> ft ³
G. Filter pack, top	<u>582</u> <u>15</u> ft. MSL or <u>30.5</u> ft.	8. Filter pack material: Manufacturer, product name & mesh size a. <u>Ohio #5 sand</u> <input type="checkbox"/>
H. Screen joint, top	<u>580</u> <u>15</u> ft. MSL or <u>32.5</u> ft.	b. Volume added <u>2</u> ft ³
I. Well bottom	<u>575</u> <u>15</u> ft. MSL or <u>37.5</u> ft.	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
J. Filter pack, bottom	<u>572</u> <u>65</u> ft. MSL or <u>40</u> ft.	10. Screen material: a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
K. Borehole, bottom	<u>572</u> <u>65</u> ft. MSL or <u>40</u> ft.	b. Manufacturer <u>Monoflex</u>
L. Borehole, diameter	<u>8.5</u> in.	c. Slot size: <u>0.010</u> in.
M. O.D. well casing	<u>2.4</u> in.	d. Slotted length: <u>5.0</u> ft.
N. I.D. well casing	<u>2.0</u> in.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>

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

Signature [Signature] For Kyle Kramer Firm SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a 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 these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name WPL-Edgewater Generating Station	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name MW-303
Facility License, Permit or Monitoring No. 02524	Local Grid Origin (estimated: <input type="checkbox"/>) or Well Location <input checked="" type="checkbox"/> Lat. _____ " Long. _____ or _____	Wis. Unique Well No. <u>VV860</u> DNR Well ID No. _____
Facility ID <u>460021980</u>	St. Plane <u>631609.4</u> ft. N, <u>2573496.7</u> ft. E. S/C/N	Date Well Installed <u>2</u> / <u>4</u> / <u>2016</u> m m d d y y y y
Type of Well Well Code <u>12</u> / <u>PZ</u>	Section Location of Waste/Source <u>SE</u> 1/4 of <u>NW</u> 1/4 of Sec. <u>02</u> , T. <u>14</u> N, R. <u>23</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm <u>Kevin Durst</u>
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Gov. Lot Number _____ Badger State Drilling

- A. Protective pipe, top elevation -- 612 -- 19 ft. MSL
- B. Well casing, top elevation -- 611 -- 99 ft. MSL
- C. Land surface elevation -- 609 -- 73 ft. MSL
- D. Surface seal, bottom -- 609 -- 23 ft. MSL or -- 0.5 ft.

12. USCS classification of soil near screen:
 GP GM GC GW SW SP
 SM SC ML MH CL CH
 Bedrock

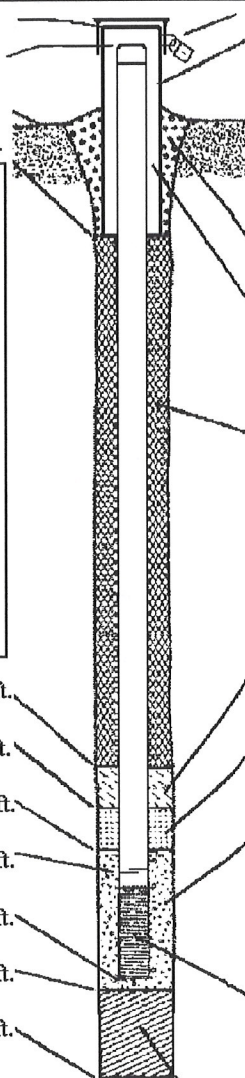
13. Sieve analysis performed? Yes No

14. Drilling method used:
 Rotary 5 0
 Hollow Stem Auger 4 1
 Other

15. Drilling fluid used: Water 0 2 Air 0 1
 Drilling Mud 0 3 None 9 9

16. Drilling additives used? Yes No
 Describe _____

17. Source of water (attach analysis, if required):
 None



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: _____ in.
 - b. Length: _____ ft.
 - c. Material: Steel 0 4
Other
 - d. Additional protection? Yes No
If yes, describe: Steel Posts-3
- 3. Surface seal:
 - Bentonite 3 0
 - Concrete 0 1
 - Other
- 4. Material between well casing and protective pipe:
 - Bentonite 3 0
 - Ohio #5 sand Other
- 5. Annular space seal:
 - a. Granular/Chipped Bentonite 3 3
 - b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry 3 5
 - c. _____ Lbs/gal mud weight Bentonite slurry 3 1
 - d. _____ % Bentonite Bentonite-cement grout 5 0
 - e. _____ Ft³ volume added for any of the above
 - f. How installed: Tremie 0 1
Tremie pumped 0 2
Gravity 0 8
- 6. Bentonite seal:
 - a. Bentonite granules 3 3
 - b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 3 2
 - c. _____ Other
- 7. Fine sand material: Manufacturer, product name & mesh size
 a. Ohio #7 sand
- b. Volume added 0.5 ft³
- 8. Filter pack material: Manufacturer, product name & mesh size
 a. Ohio #5
- b. Volume added 1.5 ft³
- 9. Well casing: Flush threaded PVC schedule 40 2 3
 Flush threaded PVC schedule 80 2 4
 Other
- 10. Screen material: sch PVC 40
 - a. Screen type: Factory cut 1 1
Continuous slot 0 1
Other
 - b. Manufacturer Monoflex
 - c. Slot size: 0.010 in.
 - d. Slotted length: 5.0 ft.
- 11. Backfill material (below filter pack): None 1 4
Other

- E. Bentonite seal, top -- 609.23 ft. MSL or -- 0.5 ft.
- F. Fine sand, top -- 587.73 ft. MSL or -- 22 ft.
- G. Filter pack, top -- 585.73 ft. MSL or -- 24 ft.
- H. Screen joint, top -- 583.73 ft. MSL or -- 26 ft.
- I. Well bottom -- 578.73 ft. MSL or -- 31 ft.
- J. Filter pack, bottom -- 576.73 ft. MSL or -- 33 ft.
- K. Borehole, bottom -- 576.73 ft. MSL or -- 33 ft.
- L. Borehole, diameter -- 8.5 in.
- M. O.D. well casing -- 2.04 in.
- N. I.D. well casing -- 2.0 in.

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

Signature Kyle Kamer Firm SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a 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 these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Facility/Project Name	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> E. <input type="checkbox"/> S. <input type="checkbox"/> W.		Well Name	
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Well Location <input type="checkbox"/>		Wis. Unique Well No.	DNR Well ID No.
Facility ID	Lat. " Long. " or		Date Well Installed m m / d d / y y y y	
Type of Well	Section Location of Waste/Source 1/4 of 1/4 of Sec. T. N, R. <input type="checkbox"/> E <input type="checkbox"/> W		Well Installed By: Name (first, last) and Firm	
Well Code /	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known		Gov. Lot Number	
Distance from Waste/Source ft.	Enf. Stds. Apply <input type="checkbox"/>			

A. Protective pipe, top elevation ----- ft. MSL
 B. Well casing, top elevation ----- ft. MSL
 C. Land surface elevation 606.78 ft. MSL
 D. Surface seal, bottom - 604.78 ft. MSL or ----- ft.

12. USCS classification of soil near screen:
 GP GM GC GW SW SP
 SM SC ML MH CL CH
 Bedrock

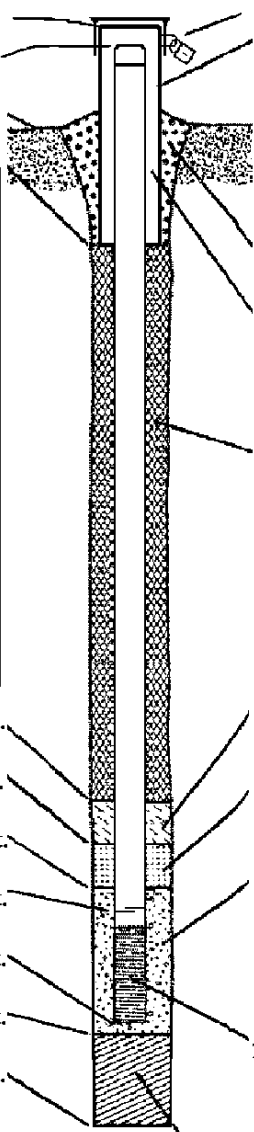
13. Sieve analysis performed? Yes No

14. Drilling method used: Rotary 5 0
 Hollow Stem Auger 4 1
 Other

15. Drilling fluid used: Water 0 2 Air 0 1
 Drilling Mud 0 3 None 9 9

16. Drilling additives used? Yes No
 Describe _____

17. Source of water (attach analysis, if required):



1. Cap and lock? Yes No
2. Protective cover pipe:
 a. Inside diameter: ----- in.
 b. Length: ----- ft.
 c. Material: Steel 0 4
 Other
 d. Additional protection? Yes No
 If yes, describe: _____
3. Surface seal: Bentonite 3 0
 Concrete 0 1
 Other
4. Material between well casing and protective pipe:
 Bentonite 3 0
 Other
5. Annular space seal: a. Granular/Chipped Bentonite 3 3
 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry 3 5
 c. _____ Lbs/gal mud weight Bentonite slurry 3 1
 d. _____ % Bentonite Bentonite-cement grout 5 0
 e. _____ Ft³ volume added for any of the above
 f. How installed: Tremie 0 1
 Tremie pumped 0 2
 Gravity 0 8
6. Bentonite seal: a. Bentonite granules 3 3
 b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 3 2
 c. _____ Other
7. Fine sand material: Manufacturer, product name & mesh size
 a. _____
 b. Volume added _____ ft³
8. Filter pack material: Manufacturer, product name & mesh size
 a. _____
 b. Volume added _____ ft³
9. Well casing: Flush threaded PVC schedule 40 2 3
 Flush threaded PVC schedule 80 2 4
 Other
10. Screen material: _____
 a. Screen type: Factory cut 1 1
 Continuous slot 0 1
 Other
 b. Manufacturer _____
 c. Slot size: 0. _____ in.
 d. Slotted length: ----- ft.
11. Backfill material (below filter pack): None 1 4
 Other

E. Bentonite seal, top - 604.78 ft. MSL or ----- ft.
 F. Fine sand, top 578.28 ft. MSL or ----- ft.
 G. Filter pack, top 577.78 ft. MSL or ----- ft.
 H. Screen joint, top 576.78 ft. MSL or ----- ft.
 I. Well bottom 571.78 ft. MSL or ----- ft.
 J. Filter pack, bottom 570.78 ft. MSL or ----- ft.
 K. Borehole, bottom 570.78 ft. MSL or ----- ft.
 L. Borehole, diameter ----- in.
 M. O.D. well casing ----- in.
 N. I.D. well casing ----- in.

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

Signature _____ Firm _____

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a 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 these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Route for: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name <i>WPL Edgewater site</i>	County Name <i>Sheboygan</i>	Well Name <i>ZB-0W</i>
Facility License, Permit or Monitoring Number <i>02524</i>	County Code ---	Wis. Unique Well Number
		DNR Well Number

1. Can this well be purged dry? Yes No

2. Well development method

surged with bailer and bailed	<input type="checkbox"/>	41
surged with bailer and pumped	<input type="checkbox"/>	61
surged with block and bailed	<input type="checkbox"/>	42
surged with block and pumped	<input type="checkbox"/>	62
surged with block, bailed and pumped	<input type="checkbox"/>	70
compressed air	<input type="checkbox"/>	20
bailed only	<input type="checkbox"/>	10
pumped only	<input checked="" type="checkbox"/>	51
pumped slowly	<input type="checkbox"/>	50
Other	<input type="checkbox"/>	

3. Time spent developing well 90 min.

4. Depth of well (from top of well casing) 16.5 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 30.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>5.57</u> ft.	<u>15.42</u> ft.
Date	b. <u>5/04/98</u> m m d d y y	<u>5/08/98</u> m m d d y y
Time	c. <u>11:05</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<u>10:45</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	<u>0.5</u> inches	<u>0.0</u> inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:
Well were developed over 3 days due to slow recovery. Volume of water removed is total amount removed during the three developments.

Well developed by: Person's Name and Firm	I hereby certify that the above information is true and correct to the best of my knowledge.
Name: <u>Brian Leitcham</u>	Signature: <u>[Signature]</u>
Firm: <u>Miller Engineers + Scientists</u>	Print Initials: <u>BSL</u>
	Firm: <u>Miller Engineers + Scientists</u>

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

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

Facility/Project Name WPL-Edgewater Generating Station	County Name Sheboygan	Well Name MW-301	
Facility License, Permit or Monitoring Number FID 460021980, License #02524	County Code 59	Wis. Unique Well Number VV862	DNR Well ID Number _____

1. Can this well be purged dry? Yes No

2. Well development method
- surged with bailer and bailed 4 1
 - surged with bailer and pumped 6 1
 - surged with block and bailed 4 2
 - surged with block and pumped 6 2
 - surged with block, bailed and pumped 7 0
 - compressed air 2 0
 - bailed only 1 0
 - pumped only 5 1
 - pumped slowly 5 0
 - Other _____ _____

3. Time spent developing well _____ 60 min.

4. Depth of well (from top of well casing) _____ 28.05 ft.

5. Inside diameter of well _____ 2.0 in.

6. Volume of water in filter pack and well casing _____ 10.93 gal.

7. Volume of water removed from well _____ 12.5 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____ NA

10. Analysis performed on water added? Yes No
(If yes, attach results)

17. Additional comments on development:

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. _____ 5.23 ft.	_____ 27.62 ft.
Date	b. <u>2</u> / <u>15</u> / <u>2016</u>	<u>3</u> / <u>7</u> / <u>2016</u>
Time	c. _____ 12:00 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	_____ 10:40 <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	_____ 0 inches	_____ 0 inches
13. Water clarity	Clear <input type="checkbox"/> 1 0 Turbid <input checked="" type="checkbox"/> 1 5 (Describe) _____	Clear <input type="checkbox"/> 2 0 Turbid <input checked="" type="checkbox"/> 2 5 (Describe) _____

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids _____ mg/l _____ mg/l

15. COD _____ mg/l _____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Kyle Last Name: Kramer
Firm: SCS ENGINEERS

Name and Address of Facility Contact /Owner/Responsible Party

First Name: Jim Last Name: Jakubiak

Facility/Firm: Wisconsin Power and Light

Street: 3739 Lakeshore Drive

City/State/Zip: Sheboygan, WI 53081

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

Signature: 

Print Name: Meghan Blodgett for Kyle Kramer

Firm: SCS ENGINEERS

NOTE: See instructions for more information including a list of county codes and well type codes.

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

Facility/Project Name WPL-Edgewater Generating Station	County Name Sheboygan	Well Name MW-302
Facility License, Permit or Monitoring Number FID 460021980, License #02524	County Code 59	Wis. Unique Well Number VV861
		DNR Well ID Number _____

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 4 1
 - surged with bailer and pumped 6 1
 - surged with block and bailed 4 2
 - surged with block and pumped 6 2
 - surged with block, bailed and pumped 7 0
 - compressed air 2 0
 - bailed only 1 0
 - pumped only 5 1
 - pumped slowly 5 0
 - Other _____ _____
3. Time spent developing well _____ 150 min.
4. Depth of well (from top of well casing) _____ 36.15 ft.
5. Inside diameter of well _____ 2.0 in.
6. Volume of water in filter pack and well casing _____ 9.6 gal.
7. Volume of water removed from well _____ 135.0 gal.
8. Volume of water added (if any) _____ gal.
9. Source of water added _____ NA
10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. _____ 19.14 ft.	_____ ft.
Date	b. <u>2</u> / <u>15</u> / <u>2016</u> m m d d y y	<u>2</u> / <u>15</u> / <u>2016</u> m m d d y y
Time	c. <u>1:35</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>4:05</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 1 0 Turbid <input checked="" type="checkbox"/> 1 5 (Describe) _____	Clear <input type="checkbox"/> 2 0 Turbid <input checked="" type="checkbox"/> 2 5 (Describe) _____
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l
16. Well developed by: Name (first, last) and Firm		
First Name:	Kyle	
Last Name:	Kramer	
Firm:	SCS ENGINEERS	

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party

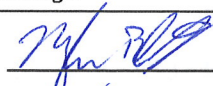
First Name: Jim Last Name: Jakubiak

Facility/Firm: Wisconsin Power and Light

Street: 3739 Lakeshore Drive

City/State/Zip: Sheboygan, WI 53081

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

Signature: 

Print Name: Meghan Blodgett for Kyle Kramer

Firm: SCS ENGINEERS

NOTE: See instructions for more information including a list of county codes and well type codes.

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

Facility/Project Name WPL-Edgewater Generating Station	County Name Sheyboygan	Well Name MW-303
Facility License, Permit or Monitoring Number FID 460021980, License #02524	County Code 59	Wis. Unique Well Number VV860
		DNR Well ID Number _____

1. Can this well be purged dry? Yes No

2. Well development method
- surged with bailer and bailed 4 1
 - surged with bailer and pumped 6 1
 - surged with block and bailed 4 2
 - surged with block and pumped 6 2
 - surged with block, bailed and pumped 7 0
 - compressed air 2 0
 - bailed only 1 0
 - pumped only 5 1
 - pumped slowly 5 0
 - Other _____ _____

3. Time spent developing well _____ 70 min.

4. Depth of well (from top of well casing) _____ 33 . 15 ft.

5. Inside diameter of well _____ 2 , _____ 0 in.

6. Volume of water in filter pack and well casing _____ 8 . 03 gal.

7. Volume of water removed from well _____ 23 . 0 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____ NA

10. Analysis performed on water added? Yes No
(If yes, attach results)

17. Additional comments on development:

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. _____ 23 . _____ 41 ft.	_____ 33 . _____ 1 ft.
Date	b. _____ 2 / _____ 4 / _____ 2016	_____ 3 / _____ 7 / _____ 2016
	m m d d y y y y	m m d d y y y y
Time	c. _____ 1 : 00 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	_____ 10 : 15 <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.

12. Sediment in well bottom _____ inches _____ inches

13. Water clarity Clear 1 0 Clear 2 0
Turbid 1 5 Turbid 2 5
(Describe) (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids _____ mg/l _____ mg/l

15. COD _____ mg/l _____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Kyle Last Name: Kramer

Firm: SCS ENGINEERS

Name and Address of Facility Contact/Owner/Responsible Party

First Name: Jim Last Name: Jakubiak

Facility/Firm: Wisconsin Power and Light

Street: 3739 Lakeshore Drive

City/State/Zip: Sheyboygan, WI 53081

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

Signature: 

Print Name: Meghan Blodgett For Kyle Kramer

Firm: SCS ENGINEERS

NOTE: See instructions for more information including a list of county codes and well type codes.

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

Facility/Project Name WPL - Edgewater Gen. Station	County Name Sheboygan	Well Name MW-304	
Facility License, Permit or Monitoring Number Facility ID: 460021980, Permit: #02524	County Code 59	Wis. Unique Well Number WF299	DNR Well ID Number _____


- 1. Can this well be purged dry? Yes No
- 2. Well development method
 - surged with bailer and bailed 4 1
 - surged with bailer and pumped 6 1
 - surged with block and bailed 4 2
 - surged with block and pumped 6 2
 - surged with block, bailed and pumped 7 0
 - compressed air 2 0
 - bailed only 1 0
 - pumped only 5 1
 - pumped slowly 5 0
 - Other _____ _____
- 3. Time spent developing well _____ 100 min.
- 4. Depth of well (from top of well casing) _____ 37.8 ft.
- 5. Inside diameter of well _____ 2.01 in.
- 6. Volume of water in filter pack and well casing _____ 8.7 gal.
- 7. Volume of water removed from well _____ 75.0 gal.
- 8. Volume of water added (if any) _____ 0.0 gal.
- 9. Source of water added _____ N/A
- 10. Analysis performed on water added? Yes No
(If yes, attach results)

- | | Before Development | After Development |
|---|--|--|
| 11. Depth to Water (from top of well casing) | a. _____ 16 _____ 71 ft. | _____ DRY _____ ft. |
| Date | b. _____ 02 / _____ 05 / _____ 2024 | _____ 03 / _____ 27 / _____ 2024 |
| | m m d d y y y y | m m d d y y y y |
| Time | c. _____ 15 : 25 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m. | _____ 12 : 00 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m. |
| 12. Sediment in well bottom | _____ . _____ inches | _____ . _____ inches |
| 13. Water clarity | Clear <input type="checkbox"/> 1 0
Turbid <input checked="" type="checkbox"/> 1 5
(Describe) _____
Dark brown, opaque | Clear <input type="checkbox"/> 2 0
Turbid <input checked="" type="checkbox"/> 2 5
(Describe) _____
Dark brown, opaque |
| Fill in if drilling fluids were used and well is at solid waste facility: | | |
| 14. Total suspended solids | _____ . _____ mg/l | _____ 4620 . 0 mg/l |
| 15. COD | _____ . _____ mg/l | _____ . _____ mg/l |

16. Well developed by: Name (first, last) and Firm
 First Name: Ryan Last Name: Matzuk
 Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
 2/5/2024 - Surged and purged with bailer for 60 minutes. Removed 30 gallons. Still very turbid with a lot of sediment.
 2/9/2024 - Additional 10 gallons removed via bailer.
 3/27/2024 - Used pump to remove additional 25 gallons. Well went dry.

Name and Address of Facility Contact /Owner/Responsible Party
 First Name: _____ Last Name: _____
 Facility/Firm: Alliant Energy
 Street: 4902 Biltmore Lane
 City/State/Zip: Madison, WI 53718

I hereby certify that the above information is true and correct to the best of my knowledge.
 Signature: 
 Print Name: Ryan Matzuk
 Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Facility/Project Name Monitoring Well Installation			License/Permit/Monitoring Number 02524		Boring Number 2R-OW	
Boring Drilled By (Firm name and name of crew chief) M&K Environmental Drilling, Chief Driller Michael McCardle.			Date Drilling Started 04/29/98		Date Drilling Completed 04/29/98	
DNR Facility Well No.			WI Unique Well No.		Common Well Name	
Final Static Water Level 607.2 Feet MSL			Surface Elevation 610.3 Feet MSL		Borehole Diameter 8.0 Inches	
Boring Location NW 1/4 of NE 1/4 of Section 2 T 14 N.R 23E			Lat 0 0 "		Local Grid Location (If applicable) <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
County SHEBOYGAN			DNR County Code 60		Civil Town/City/ or Village SHEBOYGAN	

Sample Number	Length (in) Recovered	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	Plastic Limit	P 200		
			1	TOPSOIL	TS										
			2	LEAN CLAY - moist, stiff, yellowish brown (10YR 5/6), silty sand seams.	CL										
1	18	12	3						12	23.6					
2	18	22	5	...very stiff.					22	16.6					
3	18	46	8	...hard.					46	16.8					
4	18	26	10	...wet, very stiff, dark brown (10YR 4/3), occasional sand seams.					26	19.7				98.4	
5	18	15	13	...moist.					15	22.8					
				NOTES: 1) End of boring at 14.5 feet. 2) Monitoring Well 2R-OW constructed at completion.											

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

Signature

Firm

Miller Engineers & Scientists

5308 South 12th Street, Sheboygan, WI 53081

Tel: (920)458-6164 Fax: (920)458-0369

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

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

Facility/Project Name WPL-Edgewater Generating Station SCS#: 25215135.10			License/Permit/Monitoring Number		Boring Number MW-301	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Durst Badger State			Date Drilling Started 1/14/2016		Date Drilling Completed 1/14/2016	
WI Unique Well No. VV862		DNR Well ID No.	Common Well Name MW-301		Final Static Water Level 13.7 Feet	
				Surface Elevation 601.95 Feet		Borehole Diameter 8.5 in.
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/> State Plane 632,741 N, 2,573,429 E S/C/N NE 1/4 of NW 1/4 of Section 2, T 14 N, R 23 E			Lat _____ ° _____ ' _____ "		Local Grid Location Feet <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID		County Shawano		County Code 59	Civil Town/City/ or Village Sheboygan	

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	Boring already cleared to 8' bgs by hydrovac.											
			3	Standing water at 3' in existing hydrovac hole and boring at toe of berm.											Standing water at 3 ft bgs in existing hole and boring at toe of berm.
S1	22	57 913	8	SILTY CLAY, brown (7.5YR 4/6).	CL-ML				3.5	M					water @ 11.9 ft bgs after sitting an hour with augers at 20 ft bgs.
S2	20	713 2321	14	SANDY SILT, grey brown (10YR 4/2).	ML				2.75	W					

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

Signature <i>Joe Larson</i>	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53718	Tel: (608) 224-2830 Fax:
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Boring Number **MW-301**

Use only as an attachment to Form 4400-122.

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	
			16	SANDY SILT, grey brown.										
S3	20	57 18 13	19											
			20	Same as above, except brown (7.5 YR 4/6).										
S4	22	22 34	24											
S5	20	33 49	26		ML									
S6	24	22 22	29											
S7	24	22 48	31											
S8	16	23 45	33											
S9	24	22 22	35											
			36	CLAY, grey (7.5YR 4/6). End of boring at 36 ft bgs.	CL				1.0	M				water at 16.8 ft bgs with augers at 34 ft bgs.

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

Facility/Project Name WPL-Edgewater Generating Station SCS#: 25215135.10		License/Permit/Monitoring Number		Boring Number MW-302	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Durst Badger State		Date Drilling Started 1/15/2016		Date Drilling Completed 1/15/2016	
WI Unique Well No. VV861		DNR Well ID No.		Common Well Name MW-302	
Final Static Water Level Feet		Surface Elevation 612.65 Feet		Borehole Diameter 8.5 in.	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/> State Plane 632,343 N, 2,573,726 E S/C/N SE 1/4 of NW 1/4 of Section 2, T 14 N, R 23 E		Lat _____ ° _____ ' _____ "		Local Grid Location Feet <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID		County Shawano		County Code 59	
				Civil Town/City/ or Village Sheboygan	

Sample			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)	Blow Counts							Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			1	Boring already cleared to 8' bgs by hydrovac.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
S1	16	68 11 10	9	SANDY CLAY, various colors (fill).					2.5/1.75	M				
			10											
			11											
			12											
			13											
S2	16	56 11 19	14		CL				3.5	M				
			15											

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

Signature <i>John P. Larson</i> for Joe Larson	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53718	Tel: (608) 224-2830 Fax:
---	---	-----------------------------

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Boring Number **MW-302**

Use only as an attachment to Form 4400-122.

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	
S3	16	67 9 12	16	SANDY CLAY, (fill). CLAY, dark brown, some gravel and fill (topsoil). LEAN CLAY, brown (7.5YR 4/6).	CL				3.25	M				
			17											
			18											
S4	24	47 10 13	19	SANDY SILT, brown (7.5YR 4/6).	CL				2.75	M				
			20											
			21											
S5	24	66 7 8	22	6 inch sandier zone at 35-35.5 ft bgs, soil less cohesive, more water.	ML				1.5	W				
			23											
			24											
S6	12	57 8 8	25	End of boring at 40 ft bgs.										
			26											
			27											
S7	22	22 4 9	28	water at 17.8 ft bgs after well installation.										
			29											
			30											
S8	24	22 4 7	31											
			32											
			33											
S9	24	22 2 4	34											
			35											
			36											
S10	24	22 4 6	37											
			38											
			39											

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

Facility/Project Name WPL-Edgewater Generating Station SCS#: 25215135.10		License/Permit/Monitoring Number		Boring Number MW-303	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Durst Badger State		Date Drilling Started 2/4/2016		Date Drilling Completed 2/4/2016	
Drilling Method Hollow stem auger		WI Unique Well No. VV860		DNR Well ID No.	
Common Well Name MW-303		Final Static Water Level Feet		Surface Elevation 609.73 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 631,609 N, 2,573,497 E S/C/N		Lat _____ ° _____ ' _____ "		Feet <input type="checkbox"/> N <input type="checkbox"/> S	
SE 1/4 of NW 1/4 of Section 2, T 14 N, R 23 E		Long _____ ° _____ ' _____ "		Feet <input type="checkbox"/> E <input type="checkbox"/> W	
Facility ID		County Shawano		County Code 59	
				Civil Town/City/ or Village Sheboygan	

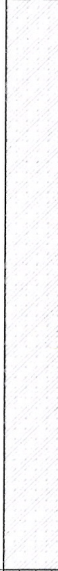


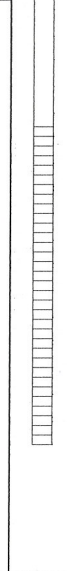


Sample			Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)	Blow Counts							Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			1	Boring already cleared to 8' bgs by hydrovac.										
			2											
			3											
			4											
			5											
			6											
			7											
			8											
S1	15	59 9 12	9	SANDY LEAN CLAY, yellowish brown (10YR 5/4).					3.0	W				
			10											
			11											
			12											
			13											
S2	18	11 11 12 14	14	Same as above except, very dark grayish brown (10YR 3/2).	CL				>4.5	W				
			15											

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

Signature *[Signature]* for Kyle Kramer Firm SCS Engineers Tel: (608) 224-2830
2830 Dairy Drive Madison, WI 53718 Fax:

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Boring Number **MW-303** Use only as an attachment to Form 4400-122. 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	
S3	20	6 8	16	Same as above except, yellowish brown (10YR 5/4).	CL				2.0	W				
		13 14	17											
S4	22	5 8	18	Same as above except, very dark grayish brown (10YR 3/2).					1.75	W				
		8 12	19											
S5	16	8 12	20	SANDY SILT, yellowish brown (10YR 5/4).						W				
		14 17	21											
S6	24	4 5	22		ML					W				
		3 3	23											
S7	24	3 6	24							W				
		9 14	25											
			26	End of boring at 33 ft bgs.										

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


Facility/Project Name WPL - Edgewater Generating Station SCS#: 25223252.00		License/Permit/Monitoring Number #02524		Boring Number MW-304	
Boring Drilled By: Name of crew chief (first, last) and Firm Adam Sweet Horizon Construction and Exploration		Date Drilling Started 2/5/2024		Date Drilling Completed 2/5/2024	
Drilling Method hollow stem auger		WI Unique Well No. WF299		DNR Well ID No.	
Common Well Name MW-304		Final Static Water Level 593.44 Feet MSL		Surface Elevation 606.78 Feet MSL	
Borehole Diameter 8.25 in.		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/> State Plane 632,116 N, 2,573,586 E S/C/N		Local Grid Location Feet <input type="checkbox"/> N <input type="checkbox"/> S	
SE 1/4 of NW 1/4 of Section 2, T 14 N, R 23 E		Lat 43 ° 42 ' 41.56 "		Feet <input type="checkbox"/> E <input type="checkbox"/> W	
Long 87 ° 42 ' 40.29 "		Facility ID 460021980		County Sheboygan	
County Code 59		Civil Town/City/ or Village Sheboygan			

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		
S0	0		1.5 3.0 4.5 6.0 7.5	Hydrovac to 8.5' below ground surface. Clay, medium brown.	CL										
S1	21		9.0 10.5	SILTY CLAY, medium brown.	CL										
S2	60		12.0 13.5 15.0	LEAN CLAY, light brown.	CL										
S3	44		16.5 18.0	Same as above but dark brown.	CL										
S4	38		19.5	SILTY CLAY, medium brown.	CL										Water table at 20' below ground surface

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: Fax:
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Appendix C

Laboratory Reports



October 31, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25223068 EDGEWATER CCR
Pace Project No.: 40269463

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 12, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Matt Bizjack, Alliant Energy
Natalie Burris, SCS ENGINEERS
Sherren Clark, SCS Engineers
Jenny Coughlin, Alliant Energy
Tom Karwoski, SCS ENGINEERS
Ryan Matzuk, SCS Engineers
Jeff Maxted, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

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SAMPLE SUMMARY

Project: 25223068 EDGEWATER CCR
Pace Project No.: 40269463

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40269463001	2R-OW	Water	10/10/23 14:30	10/12/23 09:05
40269463002	MW-301	Water	10/10/23 10:30	10/12/23 09:05
40269463003	MW-302	Water	10/10/23 13:15	10/12/23 09:05
40269463004	MW-303	Water	10/10/23 11:50	10/12/23 09:05
40269463005	FIELD BLANK	Water	10/10/23 14:40	10/12/23 09:05

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SAMPLE ANALYTE COUNT

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40269463001	2R-OW	EPA 6020B	KXS	2
			AG1	7
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40269463002	MW-301	EPA 6020B	KXS	2
			AG1	6
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40269463003	MW-302	EPA 6020B	KXS	2
			AG1	7
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40269463004	MW-303	EPA 6020B	KXS	2
			AG1	6
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40269463005	FIELD BLANK	EPA 6020B	KXS	2
			SM 2540C	TMK
		EPA 9040	HML	1
		EPA 300.0	HMB	3

PASI-G = Pace Analytical Services - Green Bay

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ANALYTICAL RESULTS

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

Sample: 2R-OW **Lab ID: 40269463001** Collected: 10/10/23 14:30 Received: 10/12/23 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay							
Boron	33.5	ug/L	10.0	3.0	1	10/17/23 05:40	10/19/23 21:09	7440-42-8	
Calcium	156000	ug/L	5080	1520	20	10/17/23 05:40	10/20/23 13:19	7440-70-2	P6
Field Data		Analytical Method: Pace Analytical Services - Green Bay							
Field pH	7.06	Std. Units			1		10/10/23 14:30		
Field Specific Conductance	1902	umhos/cm			1		10/10/23 14:30		
Oxygen, Dissolved	1.22	mg/L			1		10/10/23 14:30	7782-44-7	
REDOX	544.4	mV			1		10/10/23 14:30		
Turbidity	3.78	NTU			1		10/10/23 14:30		
Static Water Level	600.38	feet			1		10/10/23 14:30		
Temperature, Water (C)	12.7	deg C			1		10/10/23 14:30		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Green Bay							
Total Dissolved Solids	1080	mg/L	20.0	8.7	1		10/15/23 21:56		
9040 pH		Analytical Method: EPA 9040 Pace Analytical Services - Green Bay							
pH at 25 Degrees C	7.0	Std. Units	0.10	0.010	1		10/13/23 14:36		H6
300.0 IC Anions		Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay							
Chloride	420	mg/L	20.0	5.9	10		10/26/23 01:36	16887-00-6	
Fluoride	<0.95	mg/L	3.2	0.95	10		10/26/23 01:36	16984-48-8	D3
Sulfate	28.7	mg/L	20.0	4.4	10		10/26/23 01:36	14808-79-8	

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ANALYTICAL RESULTS

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

Sample: MW-301 **Lab ID: 40269463002** Collected: 10/10/23 10:30 Received: 10/12/23 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay							
Boron	6600	ug/L	500	152	50	10/17/23 05:40	10/20/23 13:49	7440-42-8	
Calcium	98500	ug/L	254	76.2	1	10/17/23 05:40	10/19/23 21:45	7440-70-2	
Field Data		Analytical Method: Pace Analytical Services - Green Bay							
Field pH	7.66	Std. Units			1		10/10/23 10:30		
Field Specific Conductance	339	umhos/cm			1		10/10/23 10:30		
Oxygen, Dissolved	4.85	mg/L			1		10/10/23 10:30	7782-44-7	
REDOX	548	mV			1		10/10/23 10:30		
Static Water Level	592.51	feet			1		10/10/23 10:30		
Temperature, Water (C)	10.4	deg C			1		10/10/23 10:30		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Green Bay							
Total Dissolved Solids	560	mg/L	20.0	8.7	1		10/15/23 21:56		
9040 pH		Analytical Method: EPA 9040 Pace Analytical Services - Green Bay							
pH at 25 Degrees C	7.5	Std. Units	0.10	0.010	1		10/13/23 14:40		H6
300.0 IC Anions		Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay							
Chloride	18.3	mg/L	2.0	0.59	1		10/26/23 01:51	16887-00-6	
Fluoride	0.20J	mg/L	0.32	0.095	1		10/26/23 01:51	16984-48-8	
Sulfate	185	mg/L	20.0	4.4	10		10/26/23 11:49	14808-79-8	

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ANALYTICAL RESULTS

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

Sample: MW-302 **Lab ID: 40269463003** Collected: 10/10/23 13:15 Received: 10/12/23 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Boron	1400	ug/L	100	30.3	10	10/17/23 05:40	10/20/23 14:03	7440-42-8	
Calcium	59400	ug/L	254	76.2	1	10/17/23 05:40	10/19/23 21:56	7440-70-2	
Field Data									
Analytical Method:									
Pace Analytical Services - Green Bay									
Field pH	7.89	Std. Units			1		10/10/23 13:15		
Field Specific Conductance	465	umhos/cm			1		10/10/23 13:15		
Oxygen, Dissolved	1.40	mg/L			1		10/10/23 13:15	7782-44-7	
REDOX	310.8	mV			1		10/10/23 13:15		
Turbidity	4.82	NTU			1		10/10/23 13:15		
Static Water Level	592.01	feet			1		10/10/23 13:15		
Temperature, Water (C)	11.7	deg C			1		10/10/23 13:15		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	308	mg/L	20.0	8.7	1		10/15/23 21:57		
9040 pH									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	7.8	Std. Units	0.10	0.010	1		10/13/23 14:43		H6
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	22.0	mg/L	2.0	0.59	1		10/26/23 02:05	16887-00-6	
Fluoride	0.85	mg/L	0.32	0.095	1		10/26/23 02:05	16984-48-8	
Sulfate	57.5	mg/L	10.0	2.2	5		10/26/23 12:03	14808-79-8	

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ANALYTICAL RESULTS

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

Sample: MW-303 **Lab ID: 40269463004** Collected: 10/10/23 11:50 Received: 10/12/23 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Boron	4160	ug/L	200	60.6	20	10/17/23 05:40	10/20/23 14:11	7440-42-8	
Calcium	134000	ug/L	254	76.2	1	10/17/23 05:40	10/19/23 22:01	7440-70-2	
Field Data									
Analytical Method:									
Pace Analytical Services - Green Bay									
Field pH	6.99	Std. Units			1		10/10/23 11:50		
Field Specific Conductance	1030	umhos/cm			1		10/10/23 11:50		
Oxygen, Dissolved	3.49	mg/L			1		10/10/23 11:50	7782-44-7	
REDOX	311.5	mV			1		10/10/23 11:50		
Static Water Level	585.79	feet			1		10/10/23 11:50		
Temperature, Water (C)	11.4	deg C			1		10/10/23 11:50		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	600	mg/L	20.0	8.7	1		10/15/23 21:57		
9040 pH									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	6.9	Std. Units	0.10	0.010	1		10/13/23 14:48		H6
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	19.9	mg/L	2.0	0.59	1		10/26/23 02:19	16887-00-6	
Fluoride	<0.095	mg/L	0.32	0.095	1		10/26/23 02:19	16984-48-8	
Sulfate	<0.44	mg/L	2.0	0.44	1		10/26/23 02:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

Sample: **FIELD BLANK** Lab ID: **40269463005** Collected: 10/10/23 14:40 Received: 10/12/23 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Boron	<3.0	ug/L	10.0	3.0	1	10/17/23 05:40	10/19/23 21:40	7440-42-8	
Calcium	<76.2	ug/L	254	76.2	1	10/17/23 05:40	10/19/23 21:40	7440-70-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		10/15/23 21:59		
9040 pH									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	6.4	Std. Units	0.10	0.010	1		10/13/23 14:57		H6
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	<0.59	mg/L	2.0	0.59	1		10/26/23 02:34	16887-00-6	
Fluoride	<0.095	mg/L	0.32	0.095	1		10/26/23 02:34	16984-48-8	
Sulfate	<0.44	mg/L	2.0	0.44	1		10/26/23 02:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

QC Batch:	457666	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020B MET
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40269463001, 40269463002, 40269463003, 40269463004, 40269463005

METHOD BLANK: 2628354 Matrix: Water
 Associated Lab Samples: 40269463001, 40269463002, 40269463003, 40269463004, 40269463005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.0	10.0	10/19/23 20:38	
Calcium	ug/L	<76.2	254	10/19/23 20:38	

LABORATORY CONTROL SAMPLE: 2628355

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	250	248	99	80-120	
Calcium	ug/L	10000	10300	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2628356 2628357

Parameter	Units	2628356		2628357		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40269463001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Boron	ug/L	33.5	250	250	288	102	101	75-125	1	20	
Calcium	ug/L	156000	10000	10000	181000	252	80	75-125	10	20 P6	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

QC Batch:	457507	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40269463001, 40269463002, 40269463003, 40269463004, 40269463005

METHOD BLANK: 2627853 Matrix: Water
 Associated Lab Samples: 40269463001, 40269463002, 40269463003, 40269463004, 40269463005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/15/23 21:53	

LABORATORY CONTROL SAMPLE: 2627854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	587	580	99	80-120	

SAMPLE DUPLICATE: 2627855

Parameter	Units	40269478001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	200	214	7	10	

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QUALITY CONTROL DATA

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

QC Batch: 457433

Analysis Method: EPA 9040

QC Batch Method: EPA 9040

Analysis Description: 9040 pH

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40269463001, 40269463002, 40269463003, 40269463004, 40269463005

SAMPLE DUPLICATE: 2626884

Parameter	Units	40268922001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.6	0	20	1q,H6

SAMPLE DUPLICATE: 2626885

Parameter	Units	40269463001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.0	0	20	H6

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QUALITY CONTROL DATA

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

QC Batch:	458394	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40269463001, 40269463002, 40269463003, 40269463004, 40269463005

METHOD BLANK: 2632613 Matrix: Water
 Associated Lab Samples: 40269463001, 40269463002, 40269463003, 40269463004, 40269463005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	10/25/23 11:36	
Fluoride	mg/L	<0.095	0.32	10/25/23 11:36	
Sulfate	mg/L	<0.44	2.0	10/25/23 11:36	

LABORATORY CONTROL SAMPLE: 2632614

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	19.5	98	90-110	
Fluoride	mg/L	2	1.9	97	90-110	
Sulfate	mg/L	20	19.3	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2632615 2632616

Parameter	Units	40269429001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	530	400	400	939	935	102	101	90-110	0	15		
Fluoride	mg/L	<1.9	40	40	43.5	43.4	109	108	90-110	0	15		
Sulfate	mg/L	281	400	400	702	698	105	104	90-110	1	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2632617 2632618

Parameter	Units	40269478005		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	29.6	200	200	242	242	106	106	90-110	0	15		
Fluoride	mg/L	<0.95	20	20	22.5	22.4	109	108	90-110	0	15		
Sulfate	mg/L	137	200	200	350	347	106	105	90-110	1	15		

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QUALIFIERS

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- | | |
|----|---|
| 1q | Due to the sample matrix, DI water was added to this sample on a one to one basis and the sample was stirred before analysis. |
| D3 | Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference. |
| H6 | Analysis initiated outside of the 15 minute EPA required holding time. |
| p6 | Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25223068 EDGEWATER CCR

Pace Project No.: 40269463

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40269463001	2R-OW	EPA 3010A	457666	EPA 6020B	457761
40269463002	MW-301	EPA 3010A	457666	EPA 6020B	457761
40269463003	MW-302	EPA 3010A	457666	EPA 6020B	457761
40269463004	MW-303	EPA 3010A	457666	EPA 6020B	457761
40269463005	FIELD BLANK	EPA 3010A	457666	EPA 6020B	457761
40269463001	2R-OW				
40269463002	MW-301				
40269463003	MW-302				
40269463004	MW-303				
40269463001	2R-OW	SM 2540C	457507		
40269463002	MW-301	SM 2540C	457507		
40269463003	MW-302	SM 2540C	457507		
40269463004	MW-303	SM 2540C	457507		
40269463005	FIELD BLANK	SM 2540C	457507		
40269463001	2R-OW	EPA 9040	457433		
40269463002	MW-301	EPA 9040	457433		
40269463003	MW-302	EPA 9040	457433		
40269463004	MW-303	EPA 9040	457433		
40269463005	FIELD BLANK	EPA 9040	457433		
40269463001	2R-OW	EPA 300.0	458394		
40269463002	MW-301	EPA 300.0	458394		
40269463003	MW-302	EPA 300.0	458394		
40269463004	MW-303	EPA 300.0	458394		
40269463005	FIELD BLANK	EPA 300.0	458394		

REPORT OF LABORATORY ANALYSIS

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Pace

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at <https://rnp.pacelabs.com/hubs/pas-standard-terms.pdf>

CHAIN-OF-CUSTODY / Analytical Request Document

Section A: Required Client Information: Company: SCS ENGINEERS, Address: 2830 Dairy Drive, Madison, WI 53718, Email: rnbddget@scsengineers.com, Phone: 608-216-7382, Fax: [blank], Requested Due Date: Standard TAT

Section B: Required Project Information: Report To: Meghan Budget, Copy To: [blank], Purchase Order #: [blank], Project Name: 25223088 Edgewater, Project #: 25223088

Section C: Invoice Information: Attention: [blank], Company Name: [blank], Address: [blank], Pace Quote: [blank], Pace Project Manager: dan.melnitsky@pacelabs.com, Pace Profile #: [blank]

Regulatory Agency: [blank], State/Location: WI

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / -)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	DATE	TIME	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
				START	END															
1	2R-QW	WT				10/10	14:30			William Ouff / SCS	10/11/23	1600	Juanax Ugo Pao	10/11/23						
2	MM-301	WT					10:50													
3	MM-302	WT					12:15													
4	MM-303	WT					11:50													
5	FIELD BLANK	WT					14:40													
6																				
7																				
8																				
9																				
10																				
11																				
12																				

SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: William Ouff, SIGNATURE of SAMPLER: [Signature], DATE Signed: 10/11/23

Page: 1 Of 1

40269463

Sample Condition Upon Receipt Form (SCUR)

Client Name: SCS Engineers Project #:

WO#: **40269463**

 40269463

Courier: CS Logistics Fed Ex Speedee UPS Walto
 Client Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used SR - 117 Type of Ice: Wet Blue Dry None Meltwater Only

Cooler Temperature Uncorr. 0.5 / Corr: 1.0

Temp Blank Present: yes no Biological Tissue is Frozen: yes no

Person examining contents:
 Date: 10/12/23 /Initials: SCW
 Labeled By Initials: MH

Temp should be above freezing to 6°C.
 Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>Ink</u> <u>10/12/23</u> <u>SCW</u>
Chain of Custody Relinquished: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No - DI VOA Samples frozen upon receipt <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Date/Time.
Short Hold Time Analysis (<72hr): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6.
Rush Turn Around Time Requested: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume: For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Correct Type: Pace Green Bag , Pace IR, Non-Pace	9.
Containers Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Includes date/time/ID/Analysis Matrix: <u>W</u>	12.
Trip Blank Present: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Trip Blank Custody Seals Present <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Pace Trip Blank Lot # (if purchased): _____	13.

Client Notification/ Resolution: _____ If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample log



May 09, 2024

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 2522069 EDGEWATER CCR (CLOSED)
Pace Project No.: 40276984

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 18, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Matt Bizjack, Alliant Energy
Natalie Burris, SCS ENGINEERS
Sherren Clark, SCS Engineers
Jenny Coughlin, Alliant Energy
Tom Karwoski, SCS ENGINEERS
Ryan Matzuk, SCS Engineers
Jeff Maxted, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

ANABISO/IEC 17025:2017 Rad Cert#: L24170

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 2950

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA010

Louisiana DEQ/TNI Certification #: 04086

Maine Certification #: 2023021

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572023-03

New Hampshire/TNI Certification #: 297622

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-015

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN02867

Texas/TNI Certification #: T104704188-22-18

Utah/TNI Certification #: PA014572223-14

USDA Soil Permit #: 525-23-67-77263

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

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SAMPLE SUMMARY

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40276984001	MW-301	Water	04/16/24 10:40	04/18/24 08:40
40276984002	MW-302	Water	04/16/24 12:45	04/18/24 08:40
40276984003	MW-303	Water	04/16/24 11:40	04/18/24 08:40
40276984004	MW-304	Water	04/16/24 15:30	04/18/24 08:40
40276984005	2R-OW	Water	04/16/24 14:05	04/18/24 08:40
40276984006	FIELD BLANK	Water	04/16/24 15:35	04/18/24 08:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
40276984001	MW-301	EPA 6020B	KXS, TXW	2	PASI-G		
			LB	7	PASI-G		
		SM 2540C	TXW	1	PASI-G		
		EPA 9040	HML	1	PASI-G		
		EPA 300.0	HMB	3	PASI-G		
40276984002	MW-302	EPA 6020B	TXW	2	PASI-G		
			LB	7	PASI-G		
		SM 2540C	TXW	1	PASI-G		
		EPA 9040	HML	1	PASI-G		
		EPA 300.0	HMB	3	PASI-G		
40276984003	MW-303	EPA 6020B	KXS, TXW	2	PASI-G		
			LB	7	PASI-G		
		SM 2540C	TXW	1	PASI-G		
		EPA 9040	HML	1	PASI-G		
		EPA 300.0	HMB	3	PASI-G		
40276984004	MW-304	EPA 6020B	TXW	14	PASI-G		
			EPA 7470	RZA	1	PASI-G	
			LB	5	PASI-G		
		EPA 903.1	LL1	1	PASI-PA		
		EPA 904.0	JJS1	1	PASI-PA		
		Total Radium Calculation	JAL	1	PASI-PA		
		SM 2540C	TXW	1	PASI-G		
		EPA 9040	HML	1	PASI-G		
		EPA 300.0	HMB	3	PASI-G		
		40276984005	2R-OW	EPA 6020B	TXW	2	PASI-G
LB	7				PASI-G		
SM 2540C	TXW			1	PASI-G		
EPA 9040	HML			1	PASI-G		
EPA 300.0	HMB			3	PASI-G		
40276984006	FIELD BLANK			EPA 6020B	TXW	14	PASI-G
					EPA 7470	RZA	1
		EPA 903.1	LL1	1	PASI-PA		
		EPA 904.0	JJS1	1	PASI-PA		
		Total Radium Calculation	JAL	1	PASI-PA		
SM 2540C	TXW	1	PASI-G				
EPA 9040	HML	1	PASI-G				
EPA 300.0	HMB	3	PASI-G				

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SAMPLE ANALYTE COUNT

Project: 2522069 EDGEWATER CCR (CLOSED)
 Pace Project No.: 40276984

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
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PASI-G = Pace Analytical Services - Green Bay
 PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Sample: MW-301 **Lab ID: 40276984001** Collected: 04/16/24 10:40 Received: 04/18/24 08:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay							
Boron	6490	ug/L	200	60.6	20	04/23/24 07:07	04/30/24 15:41	7440-42-8	
Calcium	93900	ug/L	254	76.2	1	04/23/24 07:07	04/29/24 02:10	7440-70-2	
Field Data		Analytical Method: Pace Analytical Services - Green Bay							
Field pH	7.34	Std. Units			1		04/16/24 10:40		
Field Specific Conductance	785	umhos/cm			1		04/16/24 10:40		
Oxygen, Dissolved	4.32	mg/L			1		04/16/24 10:40	7782-44-7	
REDOX	132.1	mV			1		04/16/24 10:40		
Turbidity	33.5	NTU			1		04/16/24 10:40		
Static Water Level	597.38	feet			1		04/16/24 10:40		
Temperature, Water (C)	9.7	deg C			1		04/16/24 10:40		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Green Bay							
Total Dissolved Solids	572	mg/L	20.0	8.7	1		04/22/24 15:39		
9040 pH		Analytical Method: EPA 9040 Pace Analytical Services - Green Bay							
pH at 25 Degrees C	8.1	Std. Units	0.10	0.010	1		04/23/24 14:58		H6
300.0 IC Anions		Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay							
Chloride	18.8	mg/L	2.0	0.59	1		05/01/24 14:03	16887-00-6	
Fluoride	0.27J	mg/L	0.32	0.095	1		05/01/24 14:03	16984-48-8	
Sulfate	191	mg/L	20.0	4.4	10		05/01/24 14:17	14808-79-8	

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ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Sample: MW-302 **Lab ID: 40276984002** Collected: 04/16/24 12:45 Received: 04/18/24 08:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay							
Boron	1610	ug/L	10.0	3.0	1	04/23/24 07:07	04/29/24 02:21	7440-42-8	
Calcium	48600	ug/L	254	76.2	1	04/23/24 07:07	04/29/24 02:21	7440-70-2	
Field Data		Analytical Method: Pace Analytical Services - Green Bay							
Field pH	7.58	Std. Units			1		04/16/24 12:45		
Field Specific Conductance	481	umhos/cm			1		04/16/24 12:45		
Oxygen, Dissolved	1.77	mg/L			1		04/16/24 12:45	7782-44-7	
REDOX	-51.9	mV			1		04/16/24 12:45		
Turbidity	10.2	NTU			1		04/16/24 12:45		
Static Water Level	593.52	feet			1		04/16/24 12:45		
Temperature, Water (C)	10.6	deg C			1		04/16/24 12:45		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Green Bay							
Total Dissolved Solids	348	mg/L	20.0	8.7	1		04/22/24 15:40		
9040 pH		Analytical Method: EPA 9040 Pace Analytical Services - Green Bay							
pH at 25 Degrees C	8.3	Std. Units	0.10	0.010	1		04/23/24 15:01		H6
300.0 IC Anions		Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay							
Chloride	<3.0	mg/L	10.0	3.0	5		05/01/24 15:43	16887-00-6	D3
Fluoride	<0.48	mg/L	1.6	0.48	5		05/01/24 15:43	16984-48-8	D3
Sulfate	6.0J	mg/L	10.0	2.2	5		05/01/24 15:43	14808-79-8	D3

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ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Sample: MW-303 Lab ID: 40276984003 Collected: 04/16/24 11:40 Received: 04/18/24 08:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay							
Boron	5100	ug/L	200	60.6	20	04/23/24 07:07	04/30/24 15:52	7440-42-8	
Calcium	148000	ug/L	254	76.2	1	04/23/24 07:07	04/29/24 02:26	7440-70-2	
Field Data		Analytical Method: Pace Analytical Services - Green Bay							
Field pH	6.64	Std. Units			1		04/16/24 11:40		
Field Specific Conductance	1155	umhos/cm			1		04/16/24 11:40		
Oxygen, Dissolved	4.65	mg/L			1		04/16/24 11:40	7782-44-7	
REDOX	-61.6	mV			1		04/16/24 11:40		
Turbidity	50.8	NTU			1		04/16/24 11:40		
Static Water Level	587.88	feet			1		04/16/24 11:40		
Temperature, Water (C)	10.5	deg C			1		04/16/24 11:40		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Green Bay							
Total Dissolved Solids	724	mg/L	20.0	8.7	1		04/22/24 15:40		
9040 pH		Analytical Method: EPA 9040 Pace Analytical Services - Green Bay							
pH at 25 Degrees C	7.7	Std. Units	0.10	0.010	1		04/23/24 15:03		H6
300.0 IC Anions		Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay							
Chloride	22.9	mg/L	2.0	0.59	1		05/01/24 15:57	16887-00-6	
Fluoride	<0.095	mg/L	0.32	0.095	1		05/01/24 15:57	16984-48-8	
Sulfate	<0.44	mg/L	2.0	0.44	1		05/01/24 15:57	14808-79-8	

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ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Sample: MW-304 Lab ID: 40276984004 Collected: 04/16/24 15:30 Received: 04/18/24 08:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Antimony	<0.30	ug/L	2.0	0.30	2	04/23/24 07:07	04/29/24 07:57	7440-36-0	D3
Arsenic	6.9	ug/L	2.0	0.56	2	04/23/24 07:07	04/29/24 07:57	7440-38-2	
Barium	293	ug/L	4.7	1.4	2	04/23/24 07:07	04/29/24 07:57	7440-39-3	
Beryllium	1.3J	ug/L	2.0	0.49	2	04/23/24 07:07	04/29/24 07:57	7440-41-7	D3
Boron	4780	ug/L	100	30.3	10	04/23/24 07:07	04/29/24 01:49	7440-42-8	P6
Cadmium	<0.30	ug/L	2.0	0.30	2	04/23/24 07:07	04/29/24 07:57	7440-43-9	D3
Calcium	278000	ug/L	2540	762	10	04/23/24 07:07	04/29/24 01:49	7440-70-2	P6
Chromium	42.5	ug/L	6.8	2.0	2	04/23/24 07:07	04/29/24 07:57	7440-47-3	
Cobalt	13.7	ug/L	2.0	0.23	2	04/23/24 07:07	04/29/24 07:57	7440-48-4	
Lead	12.0	ug/L	2.0	0.47	2	04/23/24 07:07	04/29/24 07:57	7439-92-1	
Lithium	82.8	ug/L	2.0	0.44	2	04/23/24 07:07	04/29/24 07:57	7439-93-2	
Molybdenum	2630	ug/L	14.7	4.4	10	04/23/24 07:07	04/29/24 01:49	7439-98-7	
Selenium	0.95J	ug/L	2.1	0.63	2	04/23/24 07:07	04/29/24 07:57	7782-49-2	D3
Thallium	0.32J	ug/L	2.0	0.28	2	04/23/24 07:07	04/29/24 07:57	7440-28-0	D3
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Green Bay									
Mercury	<0.066	ug/L	0.20	0.066	1	04/30/24 15:10	05/01/24 09:34	7439-97-6	
Field Data									
Analytical Method:									
Pace Analytical Services - Green Bay									
Field pH	7.4	Std. Units			1		04/16/24 15:30		
Field Specific Conductance	563	umhos/cm			1		04/16/24 15:30		
Oxygen, Dissolved	2.79	mg/L			1		04/16/24 15:30	7782-44-7	
REDOX	225.7	mV			1		04/16/24 15:30		
Temperature, Water (C)	9.8	deg C			1		04/16/24 15:30		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	474	mg/L	20.0	8.7	1		04/22/24 15:40		
9040 pH									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	8.2	Std. Units	0.10	0.010	1		04/23/24 15:07		H6
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	22.1	mg/L	10.0	3.0	5		05/01/24 16:26	16887-00-6	
Fluoride	0.80J	mg/L	1.6	0.48	5		05/01/24 16:26	16984-48-8	D3
Sulfate	99.5	mg/L	10.0	2.2	5		05/01/24 16:26	14808-79-8	

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ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Sample: 2R-OW **Lab ID: 40276984005** Collected: 04/16/24 14:05 Received: 04/18/24 08:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay							
Boron	36.7	ug/L	10.0	3.0	1	04/23/24 07:07	04/29/24 02:42	7440-42-8	
Calcium	109000	ug/L	254	76.2	1	04/23/24 07:07	04/29/24 02:42	7440-70-2	
Field Data		Analytical Method: Pace Analytical Services - Green Bay							
Field pH	6.99	Std. Units			1		04/16/24 14:05		
Field Specific Conductance	952	umhos/cm			1		04/16/24 14:05		
Oxygen, Dissolved	0.70	mg/L			1		04/16/24 14:05	7782-44-7	
REDOX	133.4	mV			1		04/16/24 14:05		
Turbidity	3.61	NTU			1		04/16/24 14:05		
Static Water Level	607.70	feet			1		04/16/24 14:05		
Temperature, Water (C)	8.6	deg C			1		04/16/24 14:05		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Green Bay							
Total Dissolved Solids	566	mg/L	20.0	8.7	1		04/22/24 15:41		
9040 pH		Analytical Method: EPA 9040 Pace Analytical Services - Green Bay							
pH at 25 Degrees C	8.0	Std. Units	0.10	0.010	1		04/23/24 15:11		H6
300.0 IC Anions		Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay							
Chloride	67.4	mg/L	10.0	3.0	5		05/01/24 17:23	16887-00-6	
Fluoride	0.14J	mg/L	0.32	0.095	1		05/01/24 16:40	16984-48-8	M0
Sulfate	9.0	mg/L	2.0	0.44	1		05/01/24 16:40	14808-79-8	M0

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ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Sample: **FIELD BLANK** Lab ID: **40276984006** Collected: 04/16/24 15:35 Received: 04/18/24 08:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Antimony	<0.15	ug/L	1.0	0.15	1	04/23/24 07:07	04/29/24 02:47	7440-36-0	
Arsenic	<0.28	ug/L	1.0	0.28	1	04/23/24 07:07	04/29/24 02:47	7440-38-2	
Barium	<0.70	ug/L	2.3	0.70	1	04/23/24 07:07	04/29/24 02:47	7440-39-3	
Beryllium	<0.25	ug/L	1.0	0.25	1	04/23/24 07:07	04/29/24 02:47	7440-41-7	
Boron	<3.0	ug/L	10.0	3.0	1	04/23/24 07:07	04/29/24 02:47	7440-42-8	
Cadmium	<0.15	ug/L	1.0	0.15	1	04/23/24 07:07	04/29/24 02:47	7440-43-9	
Calcium	<76.2	ug/L	254	76.2	1	04/23/24 07:07	04/29/24 02:47	7440-70-2	
Chromium	1.0J	ug/L	3.4	1.0	1	04/23/24 07:07	04/29/24 02:47	7440-47-3	
Cobalt	<0.12	ug/L	1.0	0.12	1	04/23/24 07:07	04/29/24 02:47	7440-48-4	
Lead	<0.24	ug/L	1.0	0.24	1	04/23/24 07:07	04/29/24 02:47	7439-92-1	
Lithium	<0.22	ug/L	1.0	0.22	1	04/23/24 07:07	04/29/24 02:47	7439-93-2	
Molybdenum	<0.44	ug/L	1.5	0.44	1	04/23/24 07:07	04/29/24 02:47	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	04/23/24 07:07	04/29/24 02:47	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	04/23/24 07:07	04/29/24 02:47	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Green Bay									
Mercury	<0.066	ug/L	0.20	0.066	1	04/30/24 15:10	05/01/24 09:37	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	10.0J	mg/L	20.0	8.7	1		04/22/24 15:41		
9040 pH									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	7.0	Std. Units	0.10	0.010	1		04/23/24 15:39		H6
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	<0.59	mg/L	2.0	0.59	1		05/01/24 19:18	16887-00-6	
Fluoride	<0.095	mg/L	0.32	0.095	1		05/01/24 19:18	16984-48-8	
Sulfate	<0.44	mg/L	2.0	0.44	1		05/01/24 19:18	14808-79-8	

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QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

QC Batch: 473092	Analysis Method: EPA 7470
QC Batch Method: EPA 7470	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40276984004, 40276984006

METHOD BLANK: 2709401 Matrix: Water

Associated Lab Samples: 40276984004, 40276984006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	05/01/24 09:18	

LABORATORY CONTROL SAMPLE: 2709402

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2709403 2709404

Parameter	Units	2709403		2709404		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	<0.000066 mg/L	5	5	4.9	5.0	98	100	85-115	2	20

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QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

QC Batch:	472389	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020B MET
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40276984001, 40276984002, 40276984003, 40276984004, 40276984005, 40276984006

METHOD BLANK: 2705531 Matrix: Water

Associated Lab Samples: 40276984001, 40276984002, 40276984003, 40276984004, 40276984005, 40276984006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	04/29/24 01:38	
Arsenic	ug/L	<0.28	1.0	04/29/24 01:38	
Barium	ug/L	<0.70	2.3	04/29/24 01:38	
Beryllium	ug/L	<0.25	1.0	04/29/24 01:38	
Boron	ug/L	<3.0	10.0	04/29/24 01:38	
Cadmium	ug/L	<0.15	1.0	04/29/24 01:38	
Calcium	ug/L	<76.2	254	04/29/24 01:38	
Chromium	ug/L	<1.0	3.4	04/29/24 01:38	
Cobalt	ug/L	<0.12	1.0	04/29/24 01:38	
Lead	ug/L	<0.24	1.0	04/29/24 01:38	
Lithium	ug/L	<0.22	1.0	04/29/24 01:38	
Molybdenum	ug/L	<0.44	1.5	04/29/24 01:38	
Selenium	ug/L	<0.32	1.1	04/29/24 01:38	
Thallium	ug/L	<0.14	1.0	04/29/24 01:38	

LABORATORY CONTROL SAMPLE: 2705532

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	250	255	102	80-120	
Arsenic	ug/L	250	257	103	80-120	
Barium	ug/L	250	247	99	80-120	
Beryllium	ug/L	250	255	102	80-120	
Boron	ug/L	250	239	95	80-120	
Cadmium	ug/L	250	259	104	80-120	
Calcium	ug/L	10000	9820	98	80-120	
Chromium	ug/L	250	250	100	80-120	
Cobalt	ug/L	250	254	102	80-120	
Lead	ug/L	250	248	99	80-120	
Lithium	ug/L	250	248	99	80-120	
Molybdenum	ug/L	250	253	101	80-120	
Selenium	ug/L	250	267	107	80-120	
Thallium	ug/L	250	238	95	80-120	

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QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Parameter	Units	2705533		2705534		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40276984004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Antimony	ug/L	<0.30	250	250	255	259	102	103	75-125	1	20		
Arsenic	ug/L	6.9	250	250	266	268	104	105	75-125	1	20		
Barium	ug/L	293	250	250	598	603	122	124	75-125	1	20		
Beryllium	ug/L	1.3J	250	250	255	258	101	103	75-125	1	20		
Boron	ug/L	4780	250	250	4890	4930	44	63	75-125	1	20	P6	
Cadmium	ug/L	<0.30	250	250	255	258	102	103	75-125	1	20		
Calcium	ug/L	278000	10000	10000	282000	286000	32	75	75-125	2	20	P6	
Chromium	ug/L	42.5	250	250	294	301	101	103	75-125	2	20		
Cobalt	ug/L	13.7	250	250	250	256	95	97	75-125	2	20		
Lead	ug/L	12.0	250	250	268	275	102	105	75-125	3	20		
Lithium	ug/L	82.8	250	250	336	340	101	103	75-125	1	20		
Molybdenum	ug/L	2630	250	250	2840	2860	82	91	75-125	1	20		
Selenium	ug/L	0.95J	250	250	270	267	108	107	75-125	1	20		
Thallium	ug/L	0.32J	250	250	255	262	102	105	75-125	3	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

QC Batch:	472346	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40276984001, 40276984002, 40276984003, 40276984004, 40276984005, 40276984006

METHOD BLANK: 2705404 Matrix: Water

Associated Lab Samples: 40276984001, 40276984002, 40276984003, 40276984004, 40276984005, 40276984006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	04/22/24 15:38	

LABORATORY CONTROL SAMPLE: 2705405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	616	560	91	80-120	

SAMPLE DUPLICATE: 2705406

Parameter	Units	40277010005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	636	638	0	10	

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QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

QC Batch: 472428

Analysis Method: EPA 9040

QC Batch Method: EPA 9040

Analysis Description: 9040 pH

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40276984001, 40276984002, 40276984003, 40276984004, 40276984005, 40276984006

SAMPLE DUPLICATE: 2705638

Parameter	Units	40276801001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	7.8	1	20	

SAMPLE DUPLICATE: 2705639

Parameter	Units	40276911001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.4	8.4	1	20	H6

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QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

QC Batch:	473167	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40276984001, 40276984002, 40276984003, 40276984004, 40276984005

METHOD BLANK: 2709990 Matrix: Water
 Associated Lab Samples: 40276984001, 40276984002, 40276984003, 40276984004, 40276984005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	05/01/24 12:08	
Fluoride	mg/L	<0.095	0.32	05/01/24 12:08	
Sulfate	mg/L	<0.44	2.0	05/01/24 12:08	

LABORATORY CONTROL SAMPLE: 2709991

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.0	100	90-110	
Fluoride	mg/L	2	2.0	98	90-110	
Sulfate	mg/L	20	20.1	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2707760 2707761

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40276984005 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	67.4	100	100	177	177	109	109	90-110	0	15		
Fluoride	mg/L	0.14J	2	2	2.3	2.3	110	110	90-110	0	15		
Sulfate	mg/L	9.0	20	20	31.3	31.5	112	112	90-110	0	15	M0	

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QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

QC Batch:	473184	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40276984006

METHOD BLANK: 2710056 Matrix: Water

Associated Lab Samples: 40276984006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	05/01/24 18:49	
Fluoride	mg/L	<0.095	0.32	05/01/24 18:49	
Sulfate	mg/L	<0.44	2.0	05/01/24 18:49	

LABORATORY CONTROL SAMPLE: 2710057

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	21.5	108	90-110	
Fluoride	mg/L	2	2.1	105	90-110	
Sulfate	mg/L	20	21.2	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2710058 2710059

Parameter	Units	40277042001		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Chloride	mg/L	3.3	20	20	25.8	25.9	113	113	90-110	1	15	M0	
Fluoride	mg/L	0.64	2	2	2.9	2.9	111	112	90-110	0	15	M0	
Sulfate	mg/L	11.0	20	20	33.6	33.8	113	114	90-110	1	15	M0	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2710060 2710061

Parameter	Units	40277084016		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Chloride	mg/L	147	200	200	373	369	113	111	90-110	1	15	M0	
Fluoride	mg/L	<0.95	20	20	21.9	21.4	109	107	90-110	2	15		
Sulfate	mg/L	92.5	200	200	317	312	112	110	90-110	2	15	M0	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Sample: MW-304 **Lab ID: 40276984004** Collected: 04/16/24 15:30 Received: 04/18/24 08:40 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	0.834 ± 0.527 (1.00) C:NA T:90%	pCi/L	05/06/24 15:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.09 ± 0.557 (1.00) C:82% T:55%	pCi/L	05/02/24 12:26	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.92 ± 1.08 (2.00)	pCi/L	05/07/24 14:02	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FIELD BLANK Lab ID: 40276984006 Collected: 04/16/24 15:35 Received: 04/18/24 08:40 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.000 ± 0.569 (1.00) C:NA T:93%	pCi/L	05/06/24 15:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.130 ± 0.355 (1.00) C:76% T:87%	pCi/L	04/29/24 11:47	15262-20-1	1q,B
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.130 ± 0.924 (2.00)	pCi/L	05/07/24 14:02	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

QC Batch: 663571

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 40276984004, 40276984006

METHOD BLANK: 3231432

Matrix: Water

Associated Lab Samples: 40276984004, 40276984006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.366 ± 0.362 (0.742) C:78% T:78%	pCi/L	05/02/24 12:26	
Radium-228	1.25 ± 0.487 (0.738) C:78% T:78%	pCi/L	04/29/24 11:47	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

QC Batch: 663570

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 40276984004, 40276984006

METHOD BLANK: 3231431

Matrix: Water

Associated Lab Samples: 40276984004, 40276984006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.317 ± 0.248 (0.291) C:NA T:94%	pCi/L	05/06/24 15:09	

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QUALIFIERS

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - The reported result is an estimated value.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Analyte was not detected and is reported as less than the LOD or as defined by the customer.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- 1q Samples with activity less than the RDI of 1.0 pCi/L are reportable without qualification.
- B Analyte was detected in the associated method blank.
- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- H6 Analysis initiated outside of the 15 minute EPA required holding time.
- M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
- P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2522069 EDGEWATER CCR (CLOSED)

Pace Project No.: 40276984

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40276984001	MW-301	EPA 3010A	472389	EPA 6020B	472486
40276984002	MW-302	EPA 3010A	472389	EPA 6020B	472486
40276984003	MW-303	EPA 3010A	472389	EPA 6020B	472486
40276984004	MW-304	EPA 3010A	472389	EPA 6020B	472486
40276984005	2R-OW	EPA 3010A	472389	EPA 6020B	472486
40276984006	FIELD BLANK	EPA 3010A	472389	EPA 6020B	472486
40276984004	MW-304	EPA 7470	473092	EPA 7470	473217
40276984006	FIELD BLANK	EPA 7470	473092	EPA 7470	473217
40276984001	MW-301				
40276984002	MW-302				
40276984003	MW-303				
40276984004	MW-304				
40276984005	2R-OW				
40276984004	MW-304	EPA 903.1	663570		
40276984006	FIELD BLANK	EPA 903.1	663570		
40276984004	MW-304	EPA 904.0	663571		
40276984006	FIELD BLANK	EPA 904.0	663571		
40276984004	MW-304	Total Radium Calculation	667047		
40276984006	FIELD BLANK	Total Radium Calculation	667047		
40276984001	MW-301	SM 2540C	472346		
40276984002	MW-302	SM 2540C	472346		
40276984003	MW-303	SM 2540C	472346		
40276984004	MW-304	SM 2540C	472346		
40276984005	2R-OW	SM 2540C	472346		
40276984006	FIELD BLANK	SM 2540C	472346		
40276984001	MW-301	EPA 9040	472428		
40276984002	MW-302	EPA 9040	472428		
40276984003	MW-303	EPA 9040	472428		
40276984004	MW-304	EPA 9040	472428		
40276984005	2R-OW	EPA 9040	472428		
40276984006	FIELD BLANK	EPA 9040	472428		
40276984001	MW-301	EPA 300.0	473167		
40276984002	MW-302	EPA 300.0	473167		
40276984003	MW-303	EPA 300.0	473167		
40276984004	MW-304	EPA 300.0	473167		
40276984005	2R-OW	EPA 300.0	473167		
40276984006	FIELD BLANK	EPA 300.0	473184		

REPORT OF LABORATORY ANALYSIS

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Pace Location Requested (City/State): Pace Analytical Green Bay
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

CHAIN-OF-CUSTODY Analytical Request Document
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here
40276984

Company Name: SCS ENGINEERS
Street Address: 2830 Dairy Drive, Madison, WI 53718

Contact/Report To: Meghan Blodgett
Phone #: 608-216-7362
E-Mail: mblodgett@scsengineers.com
Cc E-Mail:

Customer Project #: Project Name: 2522069 EDGEWATER CCR (CLOSED ASH I-4)

Site Collection Info/Facility ID (as applicable):

Time Zone Collected: [] AK [] PT [] MT CT [] ET County / State origin of sample(s): Wisconsin

Data Deliverables: [] Level II [] Level III [] Level IV [] EQUIS [] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [] Yes [] No

Rush (Pre-approval required): [] Same Day [] 1 Day [] 2 Day [] 3 Day [] Other _____ DW PWSID # or WW Permit # as applicable.

Date Results Requested: Field Filtered (if applicable): [] Yes No Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start		Collected or Composite End		# Cont.	Res. Chlorine		Boron & Calcium	Metals (full list + Hg)	Radium 226 & 228	TDS, Cl/F/SO4, pH	Sample Comment
			Date	Time	Date	Time		Results	Units					
MW-301	WT				4/16/24	10:40				X			X	001
MW-302	WT					12:45				X			X	002
MW-303	WT					11:40				X			X	003
MW-304	WT					15:30					X	X	X	004
2R-OW	WT					14:05				X			X	005
FIELD BLANK	WT					15:35					X	X	X	006

Additional Instructions from Pace*: Collected By: William Omet (Printed Name)
Signature: *William Omet*

Customer Remarks / Special Conditions / Possible Hazards: # Coolers 1 Thermometer ID 1370 Correction Factor (°C) 0.0 Obs Temp. (°C) 0.0 Corrected Temp. (°C) 0.0 On Ice:

Relinquished by Company (Signature): *William Omet / SCS* Date/Time: 4/17/24 17:30 Received by Company (Signature): _____ Date/Time: _____ Tracking Number: _____

Relinquished by Company (Signature): *C. S. Loggins* Date/Time: 04/18/24 0840 Received by Company (Signature): *Susan Mifs Pace* Date/Time: 04/18/24 0840 Delivered by: [] In-Person [] Courier [] FedEx [] UPS [] Other

Relinquished by Company (Signature): _____ Date/Time: _____ Received by Company (Signature): _____ Date/Time: _____ Page: 1 of 1

Sample Condition Upon Receipt Form (SCUR)

Client Name: SCS Engineers
 Courier: CS Logistics Fed Ex Speedee UPS Walco
 Client Pace Other: _____

Project #: _____
WO#: 40276984

 40276984

Tracking #: _____
 Custody Seal on Cooler/Box Present: yes no Seals intact: yes no
 Custody Seal on Samples Present: yes no Seals intact: yes no
 Packing Material: Bubble Wrap Bubble Bags None Other
 Thermometer Used SR - 137 Type of Ice: Wet Blue Dry None Meltwater Only
 Cooler Temperature Uncorr: 0.0 /Corr: 0.0
 Temp Blank Present: yes no Biological Tissue is Frozen: yes no
 Temp should be above freezing to 6°C.
 Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:
 Date: 04/18/24 /Initials: SKU
 Labeled By Initials: mt

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- DI VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Correct Type: <u>Pace Green Bay</u> Pace IR, Non-Pace		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		<u>No date + time all samples</u> <u>04/18/24</u> <u>SKU</u>
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ If checked, see attached form for additional comments
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____



August 05, 2024

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25224068 EDGEWATER
Pace Project No.: 40281748

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

Report revised to include the water elevation measurement. This replaces the report from August 1, 2024.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Matt Bizjack, Alliant Energy
Natalie Burris, SCS ENGINEERS
Sherren Clark, SCS Engineers
Jenny Coughlin, Alliant Energy
Tom Karwoski, SCS ENGINEERS
Ryan Matzuk, SCS Engineers
Jeff Maxted, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25224068 EDGEWATER

Pace Project No.: 40281748

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

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SAMPLE SUMMARY

Project: 25224068 EDGEWATER
Pace Project No.: 40281748

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40281748001	MW-304	Water	07/26/24 12:55	07/27/24 08:50
40281748002	FIELD BLANK	Water	07/26/24 12:55	07/27/24 08:50

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SAMPLE ANALYTE COUNT

Project: 25224068 EDGEWATER
Pace Project No.: 40281748

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40281748001	MW-304	EPA 6020B	SIS	1
			AG1	7
40281748002	FIELD BLANK	EPA 6020B	SIS	1

PASI-G = Pace Analytical Services - Green Bay

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SUMMARY OF DETECTION

Project: 25224068 EDGEWATER

Pace Project No.: 40281748

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40281748001	MW-304					
EPA 6020B	Calcium	83800	ug/L	2540	07/29/24 19:36	P6
	Field pH	7.68	Std. Units		07/26/24 12:55	
	Field Specific Conductance	572.9	umhos/cm		07/26/24 12:55	
	Oxygen, Dissolved	0.09	mg/L		07/26/24 12:55	
	REDOX	-2.6	mV		07/26/24 12:55	
	Turbidity	63.37	NTU		07/26/24 12:55	
	Static Water Level	593.43	feet		07/26/24 12:55	
	Temperature, Water (C)	11.0	deg C		07/26/24 12:55	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25224068 EDGEWATER

Pace Project No.: 40281748

Sample: MW-304 Lab ID: 40281748001 Collected: 07/26/24 12:55 Received: 07/27/24 08:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay							
Calcium	83800	ug/L	2540	762	10	07/29/24 08:25	07/29/24 19:36	7440-70-2	P6
Field Data		Analytical Method: Pace Analytical Services - Green Bay							
Field pH	7.68	Std. Units			1		07/26/24 12:55		
Field Specific Conductance	572.9	umhos/cm			1		07/26/24 12:55		
Oxygen, Dissolved	0.09	mg/L			1		07/26/24 12:55	7782-44-7	
REDOX	-2.6	mV			1		07/26/24 12:55		
Turbidity	63.37	NTU			1		07/26/24 12:55		
Static Water Level	593.43	feet			1		07/26/24 12:55		
Temperature, Water (C)	11.0	deg C			1		07/26/24 12:55		

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ANALYTICAL RESULTS

Project: 25224068 EDGEWATER

Pace Project No.: 40281748

Sample: FIELD BLANK Lab ID: 40281748002 Collected: 07/26/24 12:55 Received: 07/27/24 08:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Calcium	<76.2	ug/L	254	76.2	1	07/29/24 08:25	07/29/24 19:28	7440-70-2	

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QUALITY CONTROL DATA

Project: 25224068 EDGEWATER

Pace Project No.: 40281748

QC Batch: 480526

Analysis Method: EPA 6020B

QC Batch Method: EPA 3010A

Analysis Description: 6020B MET

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40281748001, 40281748002

METHOD BLANK: 2752353

Matrix: Water

Associated Lab Samples: 40281748001, 40281748002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	ug/L	<76.2	254	07/29/24 19:24	

LABORATORY CONTROL SAMPLE: 2752354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	9950	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2752355 2752356

Parameter	Units	2752355		2752356		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40281748001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	ug/L	83800	10000	10000	93400	101000	96	167	75-125	7	20 P6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 25224068 EDGEWATER

Pace Project No.: 40281748

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - The reported result is an estimated value.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Analyte was not detected and is reported as less than the LOD or as defined by the customer.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25224068 EDGEWATER
Pace Project No.: 40281748

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40281748001	MW-304	EPA 3010A	480526	EPA 6020B	480614
40281748002	FIELD BLANK	EPA 3010A	480526	EPA 6020B	480614
40281748001	MW-304				

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Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>.

Section A
 Required Client Information:
 Company: SCS ENGINEERS
 Address: 2830 Dairy Drive
 Madison, WI 53718
 Email: mblodgett@scsengineers.com
 Phone: 608-216-7362
 Requested Due Date: Standard TAT

Section B
 Required Project Information:
 Report To: Meghan Blodgett
 Copy To:
 Project Name: 25224068 Edgewater
 Project #: 25224068

Section C
 Invoice Information:
 Attention: Company Name
 Address: Pace Quote
 Pace Project Manager: dan.milewsky@pacelabs.com
 Pace Profile #:

Regulatory Agency
 State / Location: WI

Page: 1 of 1

CHAIN-OF-CUSTODY / Analytical Request Document

46281748

ITEM #	MATRIX	CODE	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analyses Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	SAMPLE CONDITIONS	
			START DATE	START TIME	END DATE			END TIME	Unpreserved	H2SO4	HNO3	HCl	NaOH					Na2S2O3
1	MW-304	WT	7/26	1255			1	X										001
2	Field Blank	WTG	7/26	1255			1	X										002
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

REQUISITIONED BY / AFFILIATION: SCS Logistics
 DATE: 7/26/24
 TIME: 0850

ACCEPTED BY / AFFILIATION: [Signature]
 DATE: 7/27/24
 TIME: 0850

TEMP in C: 1.0

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): Y

Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE: Colin Gloede
 PRINT Name of SAMPLER: Colin Gloede
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed: 7/26/24

Sample Condition Upon Receipt Form (SCUR)

Project #:

Client Name: SCS Engineers

WO#: 40281748

Courier: CS Logistics Fed Ex Speedee UPS Walto
 Client Pace Other: _____



Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used SR - 134 Type of Ice: Wet Blue Dry None Meltwater Only

Cooler Temperature Uncorr. 1.0 / Corr: 1.0

Temp Blank Present: yes no

Biological Tissue is Frozen: yes no

Person examining contents:
 Date: 7/27/24 / Initials: NE
 Labeled By Initials: GF

Temp should be above freezing to 6°C.
 Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- DI VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time: _____
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Correct Type: Pace Green Bay Pace IR, Non-Pace		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logir



September 23, 2024

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25224068 EDGEWATER
Pace Project No.: 40283322

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on August 29, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Matt Bizjack, Alliant Energy
Natalie Burris, SCS ENGINEERS
Sherren Clark, SCS Engineers
Jenny Coughlin, Alliant Energy
Tom Karwoski, SCS ENGINEERS
Ryan Matzuk, SCS Engineers
Jeff Maxted, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

ANABISO/IEC 17025:2017 Rad Cert#: L24170

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 2950

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA010

Louisiana DEQ/TNI Certification #: 04086

Maine Certification #: 2023021

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572023-03

New Hampshire/TNI Certification #: 297622

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-015

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN02867

Texas/TNI Certification #: T104704188-22-18

Utah/TNI Certification #: PA014572223-14

USDA Soil Permit #: 525-23-67-77263

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

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SAMPLE SUMMARY

Project: 25224068 EDGEWATER
Pace Project No.: 40283322

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40283322001	MW-304	Water	08/28/24 13:05	08/29/24 09:00
40283322002	FIELD BLANK	Water	08/28/24 13:15	08/29/24 09:00

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SAMPLE ANALYTE COUNT

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40283322001	MW-304	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AG1	7	PASI-G
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	LMB	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40283322002	FIELD BLANK	EPA 6020B	KXS
EPA 7470	AJT			1	PASI-G
EPA 903.1	CLM			1	PASI-PA
EPA 904.0	JJS1			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	LMB			1	PASI-G
EPA 9040	HML			1	PASI-G
EPA 300.0	HMB			3	PASI-G

PASI-G = Pace Analytical Services - Green Bay

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

Sample: MW-304 **Lab ID: 40283322001** Collected: 08/28/24 13:05 Received: 08/29/24 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Antimony	<0.15	ug/L	1.0	0.15	1	09/03/24 11:28	09/05/24 14:36	7440-36-0	
Arsenic	1.4	ug/L	1.0	0.28	1	09/03/24 11:28	09/05/24 14:36	7440-38-2	
Barium	69.1	ug/L	2.3	0.70	1	09/03/24 11:28	09/05/24 14:36	7440-39-3	
Beryllium	<0.25	ug/L	1.0	0.25	1	09/03/24 11:28	09/05/24 14:36	7440-41-7	
Boron	4230	ug/L	100	30.3	10	09/03/24 11:28	09/06/24 09:29	7440-42-8	
Cadmium	<0.15	ug/L	1.0	0.15	1	09/03/24 11:28	09/05/24 14:36	7440-43-9	
Calcium	82700	ug/L	254	76.2	1	09/03/24 11:28	09/05/24 14:36	7440-70-2	
Chromium	1.6J	ug/L	3.4	1.0	1	09/03/24 11:28	09/05/24 14:36	7440-47-3	
Cobalt	0.72J	ug/L	1.0	0.12	1	09/03/24 11:28	09/05/24 14:36	7440-48-4	
Lead	0.47J	ug/L	1.0	0.24	1	09/03/24 11:28	09/05/24 14:36	7439-92-1	
Lithium	57.9	ug/L	1.0	0.22	1	09/03/24 11:28	09/05/24 14:36	7439-93-2	
Molybdenum	1950	ug/L	14.7	4.4	10	09/03/24 11:28	09/06/24 09:29	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	09/03/24 11:28	09/05/24 14:36	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	09/03/24 11:28	09/05/24 14:36	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Green Bay									
Mercury	<0.066	ug/L	0.20	0.066	1	09/03/24 12:30	09/04/24 07:58	7439-97-6	
Field Data									
Analytical Method:									
Pace Analytical Services - Green Bay									
Field pH	7.70	Std. Units			1		08/28/24 13:05		
Field Specific Conductance	571.5	umhos/cm			1		08/28/24 13:05		
Oxygen, Dissolved	0.11	mg/L			1		08/28/24 13:05	7782-44-7	
REDOX	-26.5	mV			1		08/28/24 13:05		
Turbidity	30.16	NTU			1		08/28/24 13:05		
Static Water Level	593.71	feet			1		08/28/24 13:05		
Temperature, Water (C)	11.1	deg C			1		08/28/24 13:05		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	404	mg/L	20.0	8.7	1		09/04/24 12:21		
9040 pH									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	7.8	Std. Units	0.10	0.010	1		09/05/24 14:36		H6
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	25.0	mg/L	2.0	0.59	1		09/10/24 18:25	16887-00-6	
Fluoride	0.83	mg/L	0.32	0.095	1		09/10/24 18:25	16984-48-8	
Sulfate	94.5	mg/L	10.0	2.2	5		09/11/24 14:40	14808-79-8	

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ANALYTICAL RESULTS

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

Sample: **FIELD BLANK** Lab ID: **40283322002** Collected: 08/28/24 13:15 Received: 08/29/24 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Antimony	<0.15	ug/L	1.0	0.15	1	09/03/24 11:28	09/05/24 14:03	7440-36-0	
Arsenic	<0.28	ug/L	1.0	0.28	1	09/03/24 11:28	09/05/24 14:03	7440-38-2	
Barium	<0.70	ug/L	2.3	0.70	1	09/03/24 11:28	09/05/24 14:03	7440-39-3	
Beryllium	<0.25	ug/L	1.0	0.25	1	09/03/24 11:28	09/05/24 14:03	7440-41-7	
Boron	<3.0	ug/L	10.0	3.0	1	09/03/24 11:28	09/05/24 14:03	7440-42-8	
Cadmium	<0.15	ug/L	1.0	0.15	1	09/03/24 11:28	09/05/24 14:03	7440-43-9	
Calcium	<76.2	ug/L	254	76.2	1	09/03/24 11:28	09/05/24 14:03	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	09/03/24 11:28	09/05/24 14:03	7440-47-3	
Cobalt	<0.12	ug/L	1.0	0.12	1	09/03/24 11:28	09/05/24 14:03	7440-48-4	
Lead	<0.24	ug/L	1.0	0.24	1	09/03/24 11:28	09/05/24 14:03	7439-92-1	
Lithium	<0.22	ug/L	1.0	0.22	1	09/03/24 11:28	09/05/24 14:03	7439-93-2	
Molybdenum	<0.44	ug/L	1.5	0.44	1	09/03/24 11:28	09/05/24 14:03	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	09/03/24 11:28	09/05/24 14:03	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	09/03/24 11:28	09/05/24 14:03	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Green Bay									
Mercury	<0.066	ug/L	0.20	0.066	1	09/03/24 12:30	09/04/24 08:00	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		09/04/24 12:21		
9040 pH									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	6.9	Std. Units	0.10	0.010	1		09/05/24 14:52		H6
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	<0.59	mg/L	2.0	0.59	1		09/10/24 18:36	16887-00-6	
Fluoride	<0.095	mg/L	0.32	0.095	1		09/10/24 18:36	16984-48-8	
Sulfate	<0.44	mg/L	2.0	0.44	1		09/10/24 18:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

QC Batch: 483413	Analysis Method: EPA 7470
QC Batch Method: EPA 7470	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40283322001, 40283322002

METHOD BLANK: 2767701 Matrix: Water

Associated Lab Samples: 40283322001, 40283322002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	09/04/24 07:09	

LABORATORY CONTROL SAMPLE: 2767702

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2767703 2767704

Parameter	Units	2767703		2767704		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40283303003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	ug/L	<0.066	5	5	4.2	4.2	84	84	85-115	0	20 M0

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QUALITY CONTROL DATA

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

QC Batch: 483423

Analysis Method: EPA 6020B

QC Batch Method: EPA 3010A

Analysis Description: 6020B MET

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40283322001, 40283322002

METHOD BLANK: 2767724

Matrix: Water

Associated Lab Samples: 40283322001, 40283322002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	09/05/24 13:25	
Arsenic	ug/L	<0.28	1.0	09/05/24 13:25	
Barium	ug/L	<0.70	2.3	09/05/24 13:25	
Beryllium	ug/L	<0.25	1.0	09/05/24 13:25	
Boron	ug/L	<3.0	10.0	09/05/24 13:25	
Cadmium	ug/L	<0.15	1.0	09/05/24 13:25	
Calcium	ug/L	80.8J	254	09/05/24 13:25	
Chromium	ug/L	<1.0	3.4	09/05/24 13:25	
Cobalt	ug/L	<0.12	1.0	09/05/24 13:25	
Lead	ug/L	<0.24	1.0	09/05/24 13:25	
Lithium	ug/L	<0.22	1.0	09/05/24 13:25	
Molybdenum	ug/L	<0.44	1.5	09/05/24 13:25	
Selenium	ug/L	<0.32	1.1	09/05/24 13:25	
Thallium	ug/L	<0.14	1.0	09/05/24 13:25	

LABORATORY CONTROL SAMPLE: 2767725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	250	244	97	80-120	
Arsenic	ug/L	250	242	97	80-120	
Barium	ug/L	250	244	97	80-120	
Beryllium	ug/L	250	251	100	80-120	
Boron	ug/L	250	235	94	80-120	
Cadmium	ug/L	250	247	99	80-120	
Calcium	ug/L	10000	10100	101	80-120	
Chromium	ug/L	250	239	96	80-120	
Cobalt	ug/L	250	245	98	80-120	
Lead	ug/L	250	249	100	80-120	
Lithium	ug/L	250	245	98	80-120	
Molybdenum	ug/L	250	248	99	80-120	
Selenium	ug/L	250	244	98	80-120	
Thallium	ug/L	250	242	97	80-120	

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QUALITY CONTROL DATA

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2767726												2767727	
Parameter	Units	40283441001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Antimony	ug/L	<0.15	250	250	246	245	98	98	75-125	1	20		
Arsenic	ug/L	1.3	250	250	242	242	96	96	75-125	0	20		
Barium	ug/L	54.5	250	250	290	291	94	95	75-125	0	20		
Beryllium	ug/L	<0.25	250	250	252	250	101	100	75-125	1	20		
Boron	ug/L	49.3	250	250	280	282	92	93	75-125	1	20		
Cadmium	ug/L	<0.15	250	250	242	244	97	97	75-125	1	20		
Calcium	ug/L	44600	10000	10000	53400	53100	88	85	75-125	0	20		
Chromium	ug/L	<1.0	250	250	235	235	94	94	75-125	0	20		
Cobalt	ug/L	0.13J	250	250	232	232	93	93	75-125	0	20		
Lead	ug/L	<0.24	250	250	244	245	97	98	75-125	0	20		
Lithium	ug/L	4.5	250	250	243	244	95	96	75-125	1	20		
Molybdenum	ug/L	52.4	250	250	301	302	99	100	75-125	1	20		
Selenium	ug/L	<0.32	250	250	241	239	96	96	75-125	1	20		
Thallium	ug/L	<0.14	250	250	239	241	96	96	75-125	1	20		

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QUALITY CONTROL DATA

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

QC Batch: 483502

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40283322001, 40283322002

METHOD BLANK: 2767904

Matrix: Water

Associated Lab Samples: 40283322001, 40283322002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	16.0J	20.0	09/04/24 12:19	

LABORATORY CONTROL SAMPLE: 2767905

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	582	582	100	80-120	

SAMPLE DUPLICATE: 2767911

Parameter	Units	40283261001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	730	726	1	10	

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QUALITY CONTROL DATA

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

QC Batch: 483652

Analysis Method: EPA 9040

QC Batch Method: EPA 9040

Analysis Description: 9040 pH

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40283322001, 40283322002

SAMPLE DUPLICATE: 2768614

Parameter	Units	40283322001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.8	0	20	H6

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QUALITY CONTROL DATA

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

QC Batch:	483974	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40283322001, 40283322002

METHOD BLANK: 2770601 Matrix: Water

Associated Lab Samples: 40283322001, 40283322002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	09/10/24 12:53	
Fluoride	mg/L	<0.095	0.32	09/10/24 12:53	
Sulfate	mg/L	<0.44	2.0	09/10/24 12:53	

LABORATORY CONTROL SAMPLE: 2770602

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	19.8	99	90-110	
Fluoride	mg/L	2	1.9	97	90-110	
Sulfate	mg/L	20	19.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2770603 2770604

Parameter	Units	40283779002		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	6.2J	100	100	109	110	102	104	90-110	1	15		
Fluoride	mg/L	<0.48	10	10	10.8	10.9	108	109	90-110	1	15		
Sulfate	mg/L	33.8	100	100	143	144	109	110	90-110	1	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2770605 2770606

Parameter	Units	40283537003		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	145	200	200	362	372	109	114	90-110	3	15	M0	
Fluoride	mg/L	<0.95	20	20	21.7	22.4	109	112	90-110	3	15	M0	
Sulfate	mg/L	12.5J	200	200	224	233	106	110	90-110	4	15		

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

Sample: MW-304 **Lab ID: 40283322001** Collected: 08/28/24 13:05 Received: 08/29/24 09:00 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.113 ± 0.542 (1.00) C:NA T:94%	pCi/L	09/11/24 15:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.559 ± 0.383 (1.00) C:81% T:87%	pCi/L	09/06/24 12:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.672 ± 0.925 (2.00)	pCi/L	09/12/24 15:44	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FIELD BLANK Lab ID: 40283322002 Collected: 08/28/24 13:15 Received: 08/29/24 09:00 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.224 ± 0.492 (1.00) C:NA T:95%	pCi/L	09/11/24 15:20	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.236 ± 0.366 (1.00) C:84% T:89%	pCi/L	09/06/24 12:02	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.460 ± 0.858 (2.00)	pCi/L	09/12/24 15:44	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

QC Batch: 693332

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 40283322001, 40283322002

METHOD BLANK: 3376074

Matrix: Water

Associated Lab Samples: 40283322001, 40283322002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.703 ± 0.384 (0.692) C:78% T:91%	pCi/L	09/06/24 12:00	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

QC Batch: 693335

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 40283322001, 40283322002

METHOD BLANK: 3376082

Matrix: Water

Associated Lab Samples: 40283322001, 40283322002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.375 ± 0.321 (0.435) C:NA T:88%	pCi/L	09/11/24 15:06	

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QUALIFIERS

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - The reported result is an estimated value.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Analyte was not detected and is reported as less than the LOD or as defined by the customer.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA required holding time.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25224068 EDGEWATER

Pace Project No.: 40283322

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40283322001	MW-304	EPA 3010A	483423	EPA 6020B	483495
40283322002	FIELD BLANK	EPA 3010A	483423	EPA 6020B	483495
40283322001	MW-304	EPA 7470	483413	EPA 7470	483479
40283322002	FIELD BLANK	EPA 7470	483413	EPA 7470	483479
40283322001	MW-304				
40283322001	MW-304	EPA 903.1	693335		
40283322002	FIELD BLANK	EPA 903.1	693335		
40283322001	MW-304	EPA 904.0	693332		
40283322002	FIELD BLANK	EPA 904.0	693332		
40283322001	MW-304	Total Radium Calculation	695733		
40283322002	FIELD BLANK	Total Radium Calculation	695733		
40283322001	MW-304	SM 2540C	483502		
40283322002	FIELD BLANK	SM 2540C	483502		
40283322001	MW-304	EPA 9040	483652		
40283322002	FIELD BLANK	EPA 9040	483652		
40283322001	MW-304	EPA 300.0	483974		
40283322002	FIELD BLANK	EPA 300.0	483974		

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Sample Condition Upon Receipt Form (SCUR)

Project #:

Client Name: SCS Engineers

WO#: **40283322**

Courier: CS Logistics Fed Ex Speedee UPS Waltco
 Client Pace Other: _____



Tracking #: _____

Custody Seal on Cooler/Box Present: Yes no Seals intact: yes no

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used SR - 134 Type of Ice: Wet Blue Dry None Meltwater Only

Cooler Temperature Uncorr. 1.5 /Corr: 1.5

Temp Blank Present: yes no Biological Tissue is Frozen: yes no

Person examining contents:
 Date: 8/29/24 Initials: NR
 Labeled By Initials: _____

Temp should be above freezing to 6°C.
 Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.


Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- DI VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time: _____
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Correct Type: <u>Pace Green Bay</u> , Pace IR, Non-Pace		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: _____ If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi



Appendix D

Historical Monitoring Results

Single Location
Name: WPL -
Edgewater Closed

Location ID: 2R-OW
 Number of Sampling Dates: 22

Parameter Name	Units	4/8/2016	6/20/2016	8/9/2016	10/20/2016	1/24/2017	4/6/2017	6/6/2017	8/1/2017	10/23/2017	4/2/2018	10/1/2018	4/8/2019	10/7/2019	4/8/2020	10/15/2020	4/14/2021
Boron	ug/L	100	22.4	32.6	43.1	31.2	70.6	45.2	35.7	55.9	19.7	34.7	35.8	58.8	52.3	29.9	45.7
Calcium	ug/L	205000	148000	145000	155000	152000	143000	145000	164000	170000	121000	190000	121000	132000	117000	124000	154000
Chloride	mg/L	91.7	232	215	217	201	102	115	272	305	108	462	55.3	88.8	67.5	179	116
Fluoride	mg/L	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.12	<0.1	<0.1	<0.1	<0.095	0.096	<0.095
Field pH	Std. Units	7.34	7.02	6.1	6.98	7.15	7.01	6.86	7	7.23	7.29	7.03	8.57	6.88	7.08	7.2	7.52
Sulfate	mg/L	19.5	28	25.4	21.6	23.9	17.6	17.8	28.8	29.3	17.2	37.2	10.6	13.2	11.6	20.3	15.3
Total Dissolved Solids	mg/L	774	908	974	944	854	750	744	1000	1010	680	1260	610	706	604	806	737
Antimony	ug/L	0.3	<0.073	<0.073	<0.073	0.073	<0.073	0.32	<0.15	--	--	--	--	--	--	--	--
Arsenic	ug/L	5.2	0.34	0.39	0.39	0.65	0.35	0.71	1.2	--	--	--	--	--	--	--	--
Barium	ug/L	344	110	155	189	158	150	172	154	--	--	--	--	--	--	--	--
Beryllium	ug/L	0.83	<0.13	<0.13	<0.13	<0.13	<0.13	<0.18	<0.18	--	--	--	--	--	--	--	--
Cadmium	ug/L	0.21	<0.089	<0.089	<0.089	<0.089	<0.089	0.2	<0.081	--	--	--	--	--	--	--	--
Chromium	ug/L	23.6	3.1	2.9	1.7	2.6	2.2	1.6	4.3	--	--	--	--	--	--	--	--
Cobalt	ug/L	6	0.081	0.05	0.21	0.22	0.28	0.7	1.7	--	--	--	--	--	--	--	--
Lead	ug/L	13	0.17	0.14	0.074	0.38	0.48	0.4	1.2	--	--	--	--	--	--	--	--
Lithium	ug/L	19.6	9.6	9	8.2	8.2	5.3	6.2	15.1	--	--	--	--	--	--	--	--
Molybdenum	ug/L	0.58	0.28	0.32	0.25	0.28	0.5	0.54	0.44	--	--	--	--	--	--	--	--
Selenium	ug/L	2.2	<0.21	<0.21	<0.21	<0.21	<0.21	0.34	<0.32	--	--	--	--	--	--	--	--
Thallium	ug/L	0.19	<0.14	<0.14	<0.14	<0.14	<0.14	0.45	<0.14	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--	--	--
Total Radium	pCi/L	0.945	0.815	0.432	0.896	0.627	1.02	1.58	2.12	--	--	--	--	--	--	--	--
pH at 25 Degrees C	Std. Units	7.4	7.4	7	7.4	7.4	7.1	6.9	7.1	7.1	7.4	7	7.5	7.1	7.1	7.4	7.4
Radium-226	pCi/L	0.304	0.433	0.0836	0.193	0	0.418	0.531	0.658	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.641	0.382	0.348	0.703	0.627	0.605	1.05	0.502	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	1332	1277	1697	1533	1579	1387	1294	1651	1864	1177	2202	1077	1261	1081	1490	1229
Oxygen, Dissolved	mg/L	4.6	0.9	1	0.6	1	0.5	0.1	0	4.9	6.7	1.6	0.6	2.5	1.5	3.5	6.9
Field Oxidation Potential	mV	130	82	140	117	87	120	-20	-22	131	85	180	75	148	43.7	282	282
Groundwater Elevation	feet	610.02	606.7	605.74	607.27	609.64	609.27	607.63	604.59	601.74	607.87	604.61	609.5	609.39	608.97	604.27	608.5
Temperature, Water (C)	deg C	5.6	10.6	13.9	14.1	7.5	7	10.1	13	13	5.2	13.4	6.7	14	6.1	13.6	6.6
Turbidity	NTU	612.3	10.97	3.64	3.32	11.71	16.46	0.55	41.3	2.24	6.38	7.09	8.59	--	15.24	28.74	413

Single Location

Name: WPL -
Edgewater Closed

Location ID: 2R-OW

Number of Sampling Dates: 22

Parameter Name	Units	10/26/2021	4/13/2022	10/6/2022	4/26/2023	10/10/2023	4/16/2024
Boron	ug/L	47.2	27.9	49	32	33.5	36.7
Calcium	ug/L	192000	160000	152000	91800	156000	109000
Chloride	mg/L	493	275	414	53.4	420	67.4
Fluoride	mg/L	<4.8	<0.95	<0.095	0.11	<0.95	0.14
Field pH	Std. Units	7.01	7.2	7.08	7.3	7.06	6.99
Sulfate	mg/L	35.7	18.5	28	7.5	28.7	9
Total Dissolved Solids	mg/L	1170	866	1110	512	1080	566
Antimony	ug/L	--	--	--	--	--	--
Arsenic	ug/L	--	--	--	--	--	--
Barium	ug/L	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--
Cadmium	ug/L	--	--	--	--	--	--
Chromium	ug/L	--	--	--	--	--	--
Cobalt	ug/L	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--
Lithium	ug/L	--	--	--	--	--	--
Molybdenum	ug/L	--	--	--	--	--	--
Selenium	ug/L	--	--	--	--	--	--
Thallium	ug/L	--	--	--	--	--	--
Mercury	ug/L	--	--	--	--	--	--
Total Radium	pCi/L	--	--	--	--	--	--
pH at 25 Degrees C	Std. Units	7.2	7.2	7.1	7.4	7	8
Radium-226	pCi/L	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	2290	1549	1992	889	1902	952
Oxygen, Dissolved	mg/L	0.6	6.72	1.06	0.9	1.22	0.7
Field Oxidation Potential	mV	242	425.6	522.7	306.2	544.4	133.4
Groundwater Elevation	feet	604.04	609.5	602.8	607.74	600.38	607.7
Temperature, Water (C)	deg C	14	7.5	13.6	6.9	12.7	8.6
Turbidity	NTU	95.2	205	2.75	3.62	3.78	3.61

Single Location
Name: WPL -
Edgewater Closed

Location ID: MW-301
 Number of Sampling Dates: 23

Parameter Name	Units	4/11/2016	6/20/2016	8/9/2016	10/20/2016	1/23/2017	4/6/2017	6/6/2017	8/2/2017	10/24/2017	4/2/2018	10/1/2018	4/8/2019	10/7/2019	4/8/2020	6/26/2020	10/15/2020
Boron	ug/L	8550	8190	8450	8620	9280	8370	9160	8610	8820	7950	8230	7310	7220	7450	--	6550
Calcium	ug/L	88700	92200	84000	89400	89200	98800	94900	83600	87200	78900	88800	77500	87600	80800	--	114000
Chloride	mg/L	16.2	15.9	13.7	13.9	13.8	12.7	13.5	12.3	11.9	11.2	11.5	11.4	11.1	12.5	--	13.9
Fluoride	mg/L	0.33	0.36	0.33	0.34	0.42	0.21	<0.1	0.32	<0.1	0.25	0.2	0.29	0.24	0.39	0.26	<0.48
Field pH	Std. Units	7.91	7.48	6.47	7.68	8.03	7.98	7.7	7.58	7.43	8.02	7.71	8.18	7.56	7.82	7.53	7.64
Sulfate	mg/L	372	343	368	369	372	367	362	340	341	332	318	322	312	298	--	293
Total Dissolved Solids	mg/L	838	794	862	838	826	838	804	780	772	752	722	724	694	718	--	678
Antimony	ug/L	0.49	0.21	<0.073	0.083	0.2	<0.15	0.33	<0.15	--	--	--	--	--	--	--	--
Arsenic	ug/L	4.3	2.4	2.3	4.2	1.8	2.8	1.9	1.5	--	--	--	--	--	--	--	--
Barium	ug/L	48.7	32.6	30.5	31.4	32.2	53.8	30.3	28.2	--	--	--	--	--	--	--	--
Beryllium	ug/L	0.18	<0.13	<0.13	<0.13	0.28	<0.25	<0.18	<0.18	--	--	--	--	--	--	--	--
Cadmium	ug/L	0.2	0.22	<0.089	<0.089	0.17	<0.18	<0.081	<0.081	--	--	--	--	--	--	--	--
Chromium	ug/L	3.5	0.55	<0.39	0.86	1.1	6.4	<1	<1	--	--	--	--	--	--	--	--
Cobalt	ug/L	1.2	0.39	0.38	0.39	0.24	1.5	0.24	0.2	--	--	--	--	--	--	--	--
Lead	ug/L	2.2	0.3	<0.04	0.29	0.47	2.1	0.28	0.29	--	--	--	--	--	--	--	--
Lithium	ug/L	21.4	14.2	15.6	15.8	16.3	20.6	17	15.8	--	--	--	--	--	--	--	--
Molybdenum	ug/L	2200	2040	2160	2300	2210	2090	2460	2070	--	--	--	--	--	--	--	--
Selenium	ug/L	0.52	<0.21	<0.21	<0.21	<0.21	<0.42	<0.32	<0.32	--	--	--	--	--	--	--	--
Thallium	ug/L	0.31	<0.14	<0.14	<0.14	0.22	<0.29	0.17	<0.14	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--	--	--
Total Radium	pCi/L	0.41	1.62	0.456	0.729	1.09	1.51	0.494	1.67	--	--	--	--	--	--	--	--
pH at 25 Degrees C	Std. Units	7.9	7.6	7.4	7.5	7.9	7.9	7.7	7.5	7.5	7.8	7.7	7.9	7.8	7.9	--	7.6
Radium-226	pCi/L	0.32	0.958	-0.17	0.193	0.136	0.734	0.179	0.548	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.0904	0.661	0.456	0.536	0.951	0.774	0.315	0.296	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	1206	1173	1230	1214	1198	1213	1147	1111	1096	1071	1086	1022	1052	977	983	996
Oxygen, Dissolved	mg/L	4.8	1.6	0.1	0.2	7.4	5.5	3	0.5	0	6.5	4.5	6.2	2.7	6.9	5.47	0.8
Field Oxidation Potential	mV	5.2	89	-31	-24	173	51	-15	-13	-18	44	53	55	146	17.1	49.1	140
Groundwater Elevation	feet	599.94	598.3	598	598.5	597.1	600.04	598.77	597.4	597.2	598.54	597.6	598.92	599.56	599.17	597.89	595.1
Temperature, Water (C)	deg C	7.2	10.1	10.5	10.8	8.8	8.9	9.5	11.6	10.7	7.8	11	9	12.2	8.5	16.8	11.2
Turbidity	NTU	10.88	3.13	2.42	46.07	21.84	168.6	16.11	6.51	11.58	12.19	13.32	32.91	79.44	37.12	62.57	130

Single Location

Name: WPL -
Edgewater Closed

Location ID: MW-301
Number of Sampling Dates: 23

Parameter Name	Units	4/14/2021	10/26/2021	4/13/2022	10/6/2022	4/25/2023	10/10/2023	4/16/2024
Boron	ug/L	7200	6710	7240	6230	6770	6600	6490
Calcium	ug/L	118000	102000	89300	86900	87900	98500	93900
Chloride	mg/L	13.5	13.8	14	15.5	17.9	18.3	18.8
Fluoride	mg/L	0.25	0.24	<0.095	0.21	0.21	0.2	0.27
Field pH	Std. Units	7.96	7.01	7.38	7.56	7.63	7.66	7.34
Sulfate	mg/L	195	203	212	213	168	185	191
Total Dissolved Solids	mg/L	614	538	560	572	554	560	572
Antimony	ug/L	--	--	--	--	--	--	--
Arsenic	ug/L	--	--	--	--	--	--	--
Barium	ug/L	--	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--	--
Cadmium	ug/L	--	--	--	--	--	--	--
Chromium	ug/L	--	--	--	--	--	--	--
Cobalt	ug/L	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--
Lithium	ug/L	--	--	--	--	--	--	--
Molybdenum	ug/L	--	--	--	--	--	--	--
Selenium	ug/L	--	--	--	--	--	--	--
Thallium	ug/L	--	--	--	--	--	--	--
Mercury	ug/L	--	--	--	--	--	--	--
Total Radium	pCi/L	--	--	--	--	--	--	--
pH at 25 Degrees C	Std. Units	7.7	7.1	7.5	7.6	7.7	7.5	8.1
Radium-226	pCi/L	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	815	811	777	804	765	339	785
Oxygen, Dissolved	mg/L	8.2	5.4	2.82	0.39	3.14	4.85	4.32
Field Oxidation Potential	mV	226	196	417.1	-41.7	416.4	548	132.1
Groundwater Elevation	feet	595.17	590.68	594.89	590.21	597.77	592.51	597.38
Temperature, Water (C)	deg C	7.8	11.2	9	11.6	8.5	10.4	9.7
Turbidity	NTU	124	88.4	25.6	20.7	96.1	--	33.5

Single Location
Name: WPL -
Edgewater Closed

Location ID: MW-302
 Number of Sampling Dates: 22

Parameter Name	Units	4/8/2016	6/20/2016	8/9/2016	10/20/2016	1/24/2017	4/6/2017	6/6/2017	8/2/2017	10/24/2017	4/2/2018	10/1/2018	4/8/2019	10/7/2019	4/8/2020	10/15/2020	4/14/2021
Boron	ug/L	1950	2010	2000	2150	2000	1970	1970	1890	1760	1800	1570	1670	1730	1570	1410	1550
Calcium	ug/L	122000	116000	75900	72100	87400	114000	72200	62600	68100	68000	64700	64800	67500	66800	124000	81200
Chloride	mg/L	18.9	27.2	18	19.5	18.6	18.9	20	19.3	18.9	18.5	18.6	18.4	17.8	19.2	20.9	20.6
Fluoride	mg/L	0.83	1.3	0.8	0.8	0.89	0.76	0.9	0.78	0.84	0.78	0.81	0.87	0.85	0.97	1	0.88
Field pH	Std. Units	8.01	7.73	6.55	7.89	7.98	7.99	7.84	7.76	7.6	7.78	7.99	7.98	7.86	7.56	7.9	8.19
Sulfate	mg/L	75.1	89.6	80.7	77.2	71.1	85.8	88.5	80.2	72.2	72.7	59.2	71.7	55.7	65.3	73.1	70.5
Total Dissolved Solids	mg/L	352	364	396	348	328	358	350	360	316	314	306	324	290	316	182	342
Antimony	ug/L	0.3	0.085	<0.073	<0.073	0.86	<0.36	0.16	<0.15	--	--	--	--	--	--	--	--
Arsenic	ug/L	10.3	9.7	10.2	8.4	10.9	9.6	8.7	9	--	--	--	--	--	--	--	--
Barium	ug/L	152	109	66.7	57.2	90.1	104	58.4	50.9	--	--	--	--	--	--	--	--
Beryllium	ug/L	0.59	0.35	<0.13	<0.13	0.78	<0.63	<0.18	<0.18	--	--	--	--	--	--	--	--
Cadmium	ug/L	0.24	<0.089	<0.089	<0.089	0.49	<0.44	<0.081	<0.081	--	--	--	--	--	--	--	--
Chromium	ug/L	18.7	11.1	3.5	2.5	7.1	10	6.6	1.1	--	--	--	--	--	--	--	--
Cobalt	ug/L	6.2	3.6	1.1	0.84	2.6	3.2	1.5	0.53	--	--	--	--	--	--	--	--
Lead	ug/L	5.5	3.3	0.84	0.71	2.3	5.2	0.7	0.44	--	--	--	--	--	--	--	--
Lithium	ug/L	58.1	62.3	55.4	51.8	54.8	58.7	52.3	52.2	--	--	--	--	--	--	--	--
Molybdenum	ug/L	610	640	652	685	674	654	631	649	--	--	--	--	--	--	--	--
Selenium	ug/L	1.3	0.76	<0.21	0.22	<1	<1	<0.32	<0.32	--	--	--	--	--	--	--	--
Thallium	ug/L	0.35	<0.14	<0.14	<0.14	1.6	<0.71	<0.14	<0.14	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--	--	--
Total Radium	pCi/L	1.47	0.505	0.0999	0.771	1.9	1.18	1.66	1.08	--	--	--	--	--	--	--	--
pH at 25 Degrees C	Std. Units	7.3	7.8	7.7	7.8	7.7	7.9	7.5	7.7	7.7	7.8	7.6	7.8	7.6	7.8	7.7	7.8
Radium-226	pCi/L	0.843	-0.408	-0.153	0.331	0.37	0.371	0.706	0.474	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.623	0.505	0.0999	0.44	1.53	0.813	0.95	0.604	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	531	564	539	525	519	552	465	532	505	517	504	519	487	476	523	517
Oxygen, Dissolved	mg/L	1	0.2	0.1	1	0.1	0	0.5	0	0	0.6	0.8	1.6	1.3	0.4	0.3	1.8
Field Oxidation Potential	mV	-41	-123	-123	-111	-87	-517	-40	-121	-118	-123	-96	-95	124	-107.6	-83	41
Groundwater Elevation	feet	596.39	595.68	595.53	595.46	596.3	593.57	595.86	595.22	595.25	595.71	595.28	595.68	595.58	595.33	598.56	600.56
Temperature, Water (C)	deg C	9	13.1	13.2	11.2	9.3	9.6	12.2	12.6	11.1	10.3	11.6	11.9	13.5	11.3	11.2	7.5
Turbidity	NTU	885.4	369.4	108.3	62.99	161.1	367.5	94.92	39.69	42.45	24.89	55.15	59.51	32.69	69.22	161.8	252

Single Location

Name: WPL -
Edgewater Closed

Location ID: MW-302
Number of Sampling Dates: 22

Parameter Name	Units	10/26/2021	4/13/2022	10/6/2022	4/26/2023	10/10/2023	4/16/2024
Boron	ug/L	1580	1460	1610	1450	1400	1610
Calcium	ug/L	78200	61500	64000	46900	59400	48600
Chloride	mg/L	20.7	21.2	21.2	16.5	22	<3
Fluoride	mg/L	0.88	0.91	0.87	0.75	0.85	<0.48
Field pH	Std. Units	7.6	7.7	7.89	7.85	7.89	7.58
Sulfate	mg/L	71.2	68.5	70.5	75.4	57.5	6
Total Dissolved Solids	mg/L	290	318	306	344	308	348
Antimony	ug/L	--	--	--	--	--	--
Arsenic	ug/L	--	--	--	--	--	--
Barium	ug/L	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--
Cadmium	ug/L	--	--	--	--	--	--
Chromium	ug/L	--	--	--	--	--	--
Cobalt	ug/L	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--
Lithium	ug/L	--	--	--	--	--	--
Molybdenum	ug/L	--	--	--	--	--	--
Selenium	ug/L	--	--	--	--	--	--
Thallium	ug/L	--	--	--	--	--	--
Mercury	ug/L	--	--	--	--	--	--
Total Radium	pCi/L	--	--	--	--	--	--
pH at 25 Degrees C	Std. Units	7.8	7.7	7.8	8	7.8	8.3
Radium-226	pCi/L	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	496	488	499	501	465	481
Oxygen, Dissolved	mg/L	0.1	1.39	0.61	1.86	1.4	1.77
Field Oxidation Potential	mV	134	337.4	105.4	169.1	310.8	-51.9
Groundwater Elevation	feet	599.82	600.5	599.41	593.63	592.01	593.52
Temperature, Water (C)	deg C	11.1	8.7	12.1	8.7	11.7	10.6
Turbidity	NTU	69.8	26.2	21.9	3.1	4.82	10.2

Single Location
Name: WPL -
Edgewater Closed

Location ID: MW-303
 Number of Sampling Dates: 22

Parameter Name	Units	4/8/2016	6/20/2016	8/9/2016	10/20/2016	1/24/2017	4/6/2017	6/6/2017	8/2/2017	10/24/2017	4/2/2018	10/1/2018	4/8/2019	10/7/2019	4/8/2020	10/15/2020	4/14/2021
Boron	ug/L	4210	3360	3860	3740	4210	4170	4570	3780	3480	3040	2360	2930	2830	3380	3310	4600
Calcium	ug/L	176000	138000	145000	147000	147000	135000	154000	139000	173000	146000	139000	135000	136000	144000	132000	176000
Chloride	mg/L	21.8	31.5	22.8	26	26.2	22.7	25.4	23.2	20.4	19.7	4.3	20	19.1	23.5	20.9	22.5
Fluoride	mg/L	<0.2	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.48	<0.48	<0.095
Field pH	Std. Units	7.04	6.79	6.09	6.94	6.94	6.88	7	6.94	7.14	6.86	6.93	7.15	6.9	6.7	7.11	7.27
Sulfate	mg/L	3	11.4	2.4	5.6	<5	<5	<5	<5	<5	<5	<1	<5	<5	<2.2	<2.2	0.54
Total Dissolved Solids	mg/L	660	716	732	744	738	700	714	714	566	630	620	668	584	692	620	710
Antimony	ug/L	0.14	<0.073	<0.073	<0.073	<0.073	<0.073	0.32	0.25	--	--	--	--	--	--	--	--
Arsenic	ug/L	12.8	9.7	10.7	18.1	25.3	21.8	25.2	21.9	--	--	--	--	--	--	--	--
Barium	ug/L	229	189	195	180	186	142	143	144	--	--	--	--	--	--	--	--
Beryllium	ug/L	0.3	<0.13	<0.13	<0.13	<0.13	<0.13	0.33	0.21	--	--	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	0.17	0.14	--	--	--	--	--	--	--	--
Chromium	ug/L	14.1	1.5	2	1.8	1.4	1.5	2.1	1.7	--	--	--	--	--	--	--	--
Cobalt	ug/L	8.7	5.3	5	4.4	4.3	3	3.4	3.2	--	--	--	--	--	--	--	--
Lead	ug/L	4.7	0.28	0.35	0.21	0.19	0.16	0.56	0.66	--	--	--	--	--	--	--	--
Lithium	ug/L	17.6	9.1	10.4	8.9	8.3	8.3	9.3	10.7	--	--	--	--	--	--	--	--
Molybdenum	ug/L	25.1	11.6	12.7	9	7.7	5.1	4.5	5.9	--	--	--	--	--	--	--	--
Selenium	ug/L	1.2	0.48	0.31	0.55	0.71	0.38	0.5	0.6	--	--	--	--	--	--	--	--
Thallium	ug/L	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.36	0.26	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--	--	--
Total Radium	pCi/L	1.44	1.93	1.22	1.48	1.16	1.31	1.2	1.81	--	--	--	--	--	--	--	--
pH at 25 Degrees C	Std. Units	7.2	7	6.9	7.2	7	6.8	6.9	7	6.8	7	6.8	6.9	7	6.8	7	7.1
Radium-226	pCi/L	0.239	1.03	0.651	0.521	0.386	0.123	0.276	0.772	--	--	--	--	--	--	--	--
Radium-228	pCi/L	1.2	0.898	0.567	0.962	0.772	1.19	0.926	1.04	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	1273	1196	1220	1313	1335	1320	1112	1218	1095	1131	1105	1196	1127	1241	1123	1222
Oxygen, Dissolved	mg/L	0.49	0.9	0.1	0	0	0	0.8	0	0	0.3	0.2	0.3	0.2	0.2	0.2	2.3
Field Oxidation Potential	mV	-48	-71	-81	-102	-89	-20	-58	-116	-108	-97	-93	-85	122	-102.9	-32	-41
Groundwater Elevation	feet	589.24	587.22	587.72	588.37	588.84	589.04	588.44	587.36	587.97	588.77	588.17	588.88	588.77	588.66	593.19	595.01
Temperature, Water (C)	deg C	9.1	11.6	11.9	10.7	10.5	10	10.2	10.4	11	9.8	10.7	10.3	11.8	10	10.9	7.7
Turbidity	NTU	409.5	18.26	48.39	16.45	12.58	9.61	186.4	28.41	563	233.5	107.1	61.84	94.01	87.6	70.42	408

Single Location

Name: WPL -
Edgewater Closed

Location ID: MW-303
Number of Sampling Dates: 22

Parameter Name	Units	10/26/2021	4/13/2022	10/6/2022	4/25/2023	10/10/2023	4/16/2024
Boron	ug/L	3650	4360	3650	4870	4160	5100
Calcium	ug/L	148000	139000	135000	128000	134000	148000
Chloride	mg/L	21.6	23.4	22	22.3	19.9	22.9
Fluoride	mg/L	<0.48	<0.48	<0.095	<0.095	<0.095	<0.095
Field pH	Std. Units	6.92	6.78	6.92	6.87	6.99	6.64
Sulfate	mg/L	<2.2	<2.2	<0.44	0.5	<0.44	<0.44
Total Dissolved Solids	mg/L	640	722	658	740	600	724
Antimony	ug/L	--	--	--	--	--	--
Arsenic	ug/L	--	--	--	--	--	--
Barium	ug/L	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--
Cadmium	ug/L	--	--	--	--	--	--
Chromium	ug/L	--	--	--	--	--	--
Cobalt	ug/L	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--
Lithium	ug/L	--	--	--	--	--	--
Molybdenum	ug/L	--	--	--	--	--	--
Selenium	ug/L	--	--	--	--	--	--
Thallium	ug/L	--	--	--	--	--	--
Mercury	ug/L	--	--	--	--	--	--
Total Radium	pCi/L	--	--	--	--	--	--
pH at 25 Degrees C	Std. Units	7	6.8	6.8	7.1	6.9	7.7
Radium-226	pCi/L	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	1171	1224	1184	1230	1030	1155
Oxygen, Dissolved	mg/L	1.6	1.98	1.31	5.27	3.49	4.65
Field Oxidation Potential	mV	170	330.2	175.4	370.4	311.5	-61.6
Groundwater Elevation	feet	594.07	595.2	593.63	587.99	585.79	587.88
Temperature, Water (C)	deg C	12.3	8.6	11.8	8	11.4	10.5
Turbidity	NTU	88.4	75.1	165	44.1	--	50.8


Single Location

Name: WPL -
Edgewater Closed

Location ID: MW-304

Number of Sampling Dates: 3

Parameter Name	Units	4/16/2024	7/26/2024	8/28/2024
Boron	ug/L	4780	--	4230
Calcium	ug/L	278000	83800	82700
Chloride	mg/L	22.1	--	25
Fluoride	mg/L	0.8	--	0.83
Field pH	Std. Units	7.4	7.68	7.7
Sulfate	mg/L	99.5	--	94.5
Total Dissolved Solids	mg/L	474	--	404
Antimony	ug/L	<0.3	--	<0.15
Arsenic	ug/L	6.9	--	1.4
Barium	ug/L	293	--	69.1
Beryllium	ug/L	1.3	--	<0.25
Cadmium	ug/L	<0.3	--	<0.15
Chromium	ug/L	42.5	--	1.6
Cobalt	ug/L	13.7	--	0.72
Lead	ug/L	12	--	0.47
Lithium	ug/L	82.8	--	57.9
Molybdenum	ug/L	2630	--	1950
Selenium	ug/L	0.95	--	<0.32
Thallium	ug/L	0.32	--	<0.14
Mercury	ug/L	<0.066	--	<0.066
Total Radium	pCi/L	1.92	--	0.672
pH at 25 Degrees C	Std. Units	8.2	--	7.8
Radium-226	pCi/L	0.834	--	0.113
Radium-228	pCi/L	1.09	--	0.559
Field Specific Conductance	umhos/cm	563	572.9	571.5
Oxygen, Dissolved	mg/L	2.79	0.09	0.11
Field Oxidation Potential	mV	225.7	-2.6	-26.5
Groundwater Elevation	feet	--	593.43	593.71
Temperature, Water (C)	deg C	9.8	11	11.1
Turbidity	NTU	--	63.37	30.16



Appendix E
Alternative Source Demonstration (ASD)

Alternative Source Demonstration October 2023 Detection Monitoring

Edgewater Generating Station
Sheboygan, Wisconsin

Prepared for:



SCS ENGINEERS

25224068.00 | April 26, 2024

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

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PE CERTIFICATION

	<p>I, Sherren Clark, hereby certify that the information in this alternate source demonstration is accurate and meets the requirements of 40 CFR 257.94(e)(2). This certification is based on my review of the groundwater data and related site information available for the Edgewater Generating Station Ash Ponds. I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.</p>	
		<p>4/26/2024</p>
	<p>(signature)</p>	<p>(date)</p>
	<p>Sherren Clark, PE</p>	
	<p>(printed or typed name)</p>	
<p>License number E-29863</p>		
<p>My license renewal date is July 31, 2024.</p>		
<p>Pages or sheets covered by this seal: Alternative Source Demonstration – October 2023 Detection Monitoring, Edgewater Generating Station, Sheboygan Wisconsin (Entire Document)</p>		

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1.0 INTRODUCTION

This Alternative Source Demonstration (ASD) was prepared to support compliance with the groundwater monitoring requirements of the “Coal Combustion Residuals (CCR) Final Rule” published by the U.S. Environmental Protection Agency (U.S. EPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (U.S. EPA, 2015), and subsequent amendments. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.94(e)(2). The applicable sections of the Rule are provided below in *italics*.

1.1 §257.94(E)(2) ALTERNATIVE SOURCE DEMONSTRATION REQUIREMENTS

The owner and operator may demonstrate that a source other than the CCR Unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels.

An ASD is completed when there are exceedances of one or more benchmarks established within the groundwater monitoring program. The ASD is completed to determine if any other sources are likely causes of the identified exceedance(s) of the established benchmark(s) at the site. This ASD was performed in response to results indicating a statistically significant increase (SSI) over background levels during detection monitoring under the CCR Rule.

This ASD report is evaluating the SSIs observed in the statistical evaluation of the October 2023 detection monitoring event at the Edgewater Generating Station (EDG). The first ASD was prepared for this facility evaluating the SSIs observed in the statistical evaluation of the October 2017 detection monitoring event (SCS Engineers [SCS], 2018b). The October 2017 ASD and subsequent semiannual updates have concluded that several lines of evidence demonstrate that SSIs reported for boron, fluoride, and sulfate concentrations in the downgradient monitoring wells (MW-301, MW-302, and MW-303) were likely due to leachate from the closed landfill, which is not subject to the requirements of 40 CFR 257.50-107.

As discussed in more detail in **Section 4.2** of this ASD, the findings for the October 2023 monitoring event were consistent with those for the previous events.

1.2 SITE INFORMATION AND MAP

EDG is located at 3739 Lakeshore Drive in Sheboygan, Sheboygan County, Wisconsin (**Figure 1**). EDG is an active coal-burning generating station. The EDG property includes a closed landfill and a series of CCR settling ponds, located on the opposite side of Lakeshore Drive from the plant itself (**Figure 1**). The EDG landfill is closed and no longer receives CCR. The groundwater monitoring system at EDG is a multi-unit system monitoring four former existing CCR Units, which were contiguous:

- EDG Slag Pond (existing CCR surface impoundment)
- EDG North A-Pond (existing CCR surface impoundment)
- EDG South A-Pond (existing CCR surface impoundment)
- EDG B-Pond (existing CCR surface impoundment)

Closure of the four CCR surface impoundments was initiated in 2020, the cover was in place in June 2021, and the closure was certified on August 9, 2021. The existing monitoring system is being used to monitor the closure area. A map showing the CCR Units and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided on **Figure 2**.

The closed CCR landfill (Wisconsin Department of Natural Resources [WDNR] Permit No. 2524) is located immediately west of the former ponds location. The landfill contains primarily fly ash with some slag and was closed in 1987. Because this CCR landfill did not accept CCR after October 19, 2015, the landfill is not subject to the requirements of 40 CFR 257.50-107. The closed landfill is unlined and is known to be impacting groundwater at the site (SCS, 2016). Previous investigations done at the site (BT², Inc., 1993; RMT, 1997) concluded that the groundwater impacts downgradient of the landfill and ponds were attributable to groundwater interaction with the landfill, rather than leakage from the ponds.

1.3 STATISTICALLY SIGNIFICANT INCREASES IDENTIFIED

SSIs were identified for boron, fluoride, and sulfate at one or more wells based on the October 2023 detection monitoring event. A summary of the October 2023 constituent concentrations and the established benchmark concentrations are provided in **Table 1**. The constituent concentrations with SSIs above the background concentration are highlighted in the table.

1.4 OVERVIEW OF ALTERNATIVE SOURCE DEMONSTRATION

This ASD report includes:

- Background information (**Section 2.0**)
- Evaluation of potential that SSIs are due to methodology or analysis (**Section 3.0**)
- Evaluation of potential that SSIs are due to natural sources or man-made sources other than the CCR Units (**Section 4.0**)
- ASD conclusions (**Section 5.0**)
- Monitoring recommendations (**Section 6.0**)

The boron, fluoride, and sulfate results from background and compliance sampling are provided in **Table 2**. The laboratory report for the October 2023 detection monitoring event will be included in the 2024 annual groundwater monitoring and corrective action report to be completed in January 2025. Complete laboratory reports for the background monitoring events and previous detection monitoring events were included in the previous annual groundwater monitoring and corrective action reports.

2.0 BACKGROUND

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

- Geologic and hydrogeologic setting
- CCR Rule monitoring system
- Other monitoring wells
- Groundwater flow direction

A more detailed discussion of the background information for the site is provided in the ASD for the October 2017 event (SCS, 2018a).

2.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

For the purposes of groundwater monitoring, the unconsolidated sand and gravel aquifer is considered to be the uppermost aquifer, as defined under 40 CFR 257.53, at the EDG ponds. The sand and gravel aquifer is present in some parts of Sheboygan County (Skinner and Borman, 1973). Boring logs from monitoring wells at the EDG ponds and for nearby private wells indicate that the unconsolidated material at, and near, the site contains a significant amount of sand. Private well logs from the surrounding area indicate that the sand and gravel aquifer has been used as a water source; however, several older sand wells in the area have been replaced with bedrock water supply wells.

The dolomite aquifer underlies the unconsolidated material at the site. The total thickness of the dolomite aquifer at the site is unknown. The dolomite aquifer is underlain by the Maquoketa shale, which is a confining unit. The Maquoketa shale is underlain by the Cambrian-Ordovician sandstone aquifer. This sequence of sedimentary bedrock units is over 1,500 feet thick in the site vicinity.

The regional groundwater flow in the unconsolidated sand and gravel aquifer in the vicinity of the site is to the east and slightly southeast.

2.2 CCR MONITORING SYSTEM

The groundwater monitoring system established under the CCR Rule consists of one upgradient (background) monitoring well and three downgradient monitoring wells, as shown on **Figure 2**. The upgradient monitoring well is 2R-OW. The downgradient monitoring wells include MW-301, MW-302, and MW-303. The CCR compliance monitoring wells were installed in the unconsolidated sediments with screens in the uppermost soil layer producing appreciable water, which was a sandy silt unit. Well depths range from approximately 14.5 to 40 feet, measured from the top of the well casing.

2.3 OTHER MONITORING WELLS

Sixteen groundwater monitoring wells currently exist at the EDG site as part of the monitoring system developed for the state monitoring program for the closed landfill. The well locations are shown on **Figure 2**. These monitoring wells are used to monitor groundwater conditions at the site under the WDNR state monitoring program.

Monitoring wells for the state monitoring program are installed in the unconsolidated material at the site. This shallow monitoring system includes water table wells and piezometers. Well depths range from approximately 9 to 43 feet, measured from the top of the well casing.

2.4 GROUNDWATER FLOW DIRECTION

Shallow groundwater in the area of the EDG site generally flows to the south-southeast, toward Fish Creek, which discharges into Lake Michigan. There is some localized groundwater mounding associated with the EDG ponds. The water table map shown on **Figure 3** represents the site conditions of the unconsolidated deposits during the October 2023 detection monitoring event. The water table map shows a generally southward flow direction. The groundwater elevations at the CCR and state monitoring wells during the October 2023 detection monitoring event are in **Tables 3A** and **3B**.

3.0 METHODOLOGY AND ANALYSIS REVIEW

To evaluate the potential that an SSI is due to a source other than the regulated CCR Unit, SCS used a two-step evaluation process. First, the sample collection, field and laboratory analysis, and statistical evaluation were reviewed to identify any potential error or analysis that led to the exceedance of the benchmark. Second, potential alternative sources, including natural variation and man-made sources other than the CCR Unit, were evaluated. This section of the report provides the findings of the methodology and analysis review. **Section 4.0** of the report addresses the potential alternative sources.

3.1 SAMPLING AND FIELD ANALYSIS REVIEW

Field notes and sampling results were reviewed to determine if any sampling error may have caused or contributed to the observed SSIs. Potential field sampling errors or issues could include mislabeling of samples, improper sample handling, missed holding times, cross-contamination during sampling, or another field error. Field blank sample results were also reviewed for any indication of potential contamination from sampling equipment or containers. Based on the review of the field notes and results, SCS did not identify any indication that the SSI concentrations were due to a sampling error.

3.2 LABORATORY ANALYSIS REVIEW

The laboratory report for the October 2023 detection monitoring was reviewed to evaluate whether any laboratory analysis error or issue may have caused or contributed to the observed SSIs for boron, fluoride, or sulfate. The laboratory report review included reviewing the laboratory quality control flags and narrative, verifying that correct methods were used and desired detection limits were achieved, and checking the field and laboratory blank sample results. Laboratory reports for the background monitoring events were reviewed for the October 2017 ASD. Laboratory reports for subsequent detection monitoring events were reviewed as part of the ASD preparation for each event.

Based on the review of the laboratory reports, SCS did not identify any indication that the SSI concentrations were due to a laboratory analysis error. There were no laboratory quality control flags or issues identified in the laboratory reports that affect the usability of the data for detection monitoring.

Time series plots of the analytical data were also reviewed for any anomalous results that might indicate a possible sampling or laboratory error (e.g., dilution error or incorrect sample labeling). Time series plots for the Appendix III parameters are provided in **Appendix A**. No indications of sampling or laboratory errors were noted based on the time series review. The October 2023 boron, fluoride, and sulfate results for 2R-OW, MW-301, MW-302, and MW-303 are consistent with the historical data.

3.3 STATISTICAL EVALUATION REVIEW

The review of the statistical results and methods includes a quality control check of the following:

- Input analytical data vs. laboratory analytical reports
- Review of statistical method and outlier concentration lists for each monitoring well/CCR unit

Based on the review of the statistical evaluation, SCS did not identify any errors or issues in the statistical evaluation that caused or contributed to the determination of interwell SSIs for the October 2023 detection monitoring event.

3.4 SUMMARY OF METHODOLOGY AND ANALYSIS REVIEW FINDINGS

In summary, there were no changes to the SSI determinations for the October 2023 monitoring event based on the methodology and analysis review, and no errors or issues causing or contributing to the reported SSIs were identified.

4.0 ALTERNATIVE SOURCES

This section of the report discusses the potential alternative sources for the boron, fluoride, and sulfate SSIs at MW-301, MW-302, and MW-303; identifies the most likely alternative source(s); and presents the lines of evidence indicating that an alternative source is most likely the cause of the observed SSIs for boron, fluoride, and sulfate.

4.1 POTENTIAL CAUSES OF SSI

4.1.1 Natural Variation

The statistical analysis was completed using an interwell approach, comparing the October 2023 detection monitoring results to the upper prediction limits (UPLs) calculated based on the sampling of the background well (2R-OW). If concentrations of a constituent that is naturally present in the aquifer vary spatially, then the potential exists that the downgradient concentrations may be higher than upgradient concentrations due to natural variation.

Although natural variation is present in the shallow aquifer, it does not appear likely that natural variation is the primary source causing the boron and sulfate SSIs. These parameters were detected at higher concentrations than would likely be present naturally.

Natural variation may have caused or contributed to the SSI for fluoride at MW-302. Elevated natural fluoride concentrations significantly higher than those reported for the downgradient wells (above 2 milligrams per liter [mg/L]) have been observed in a region in eastern Wisconsin extending along the Lake Michigan shoreline from Kewaunee County in the north to the Illinois border in the south, as described in Luczaj, J., and Masarik, K., 2015, *Groundwater Quantity and Quality Issues in a Water-Rich Region: Examples from Wisconsin, USA*. The authors note that most of the wells with elevated fluoride appear to be drawing from the Pleistocene glacial sediments and Silurian dolomite units. Skinner and Borman (1973) and Kammerer (1995) also identify the Lake Michigan shoreline area of eastern Wisconsin as having somewhat elevated fluoride concentrations in groundwater.

The fluoride concentrations reported for MW-302 for October 2017 through April 2020 and April 2021 through October 2023 were just above the laboratory's limit of quantitation (LOQ), ranging from 0.75 mg/L in April 2023 to 0.88 mg/L in October 2021. These results are within the range of fluoride results at MW-302 during background monitoring for the CCR rule prior to October 2017 (**Table 2**). The result at MW-302 is within the range of reported regional natural concentrations, indicating that the fluoride concentration observed in this well is potentially due to natural variability in the glacial sediments and shallow groundwater. As discussed below, there is also a potential that fluoride in MW-302 is associated with impacts from the closed CCR landfill.

4.1.2 Man-Made Alternative Sources

Man-made alternative sources that could potentially contribute to the boron, fluoride, and sulfate SSIs could include the closed CCR landfill, the coal storage area, or other plant operations. Based on the groundwater flow directions and previous investigations at the site, the closed landfill appears to be the most likely cause of the SSIs for wells MW-301, MW-302, and MW-303.

4.2 LINES OF EVIDENCE

The lines of evidence indicating that the SSIs for boron, fluoride, and sulfate in compliance wells MW-301, MW-302, and MW-303, relative to the background well, are due to an alternative source include:

1. A previous study of the CCR ponds and the closed CCR landfill determined that the landfill was the primary source of groundwater impacts in the area, based on multiple lines of evidence.
2. Past and current monitoring performed under the state monitoring program shows that boron, fluoride, and sulfate are present in the CCR landfill leachate.
3. Past and current monitoring performed under the state monitoring program shows that the highest boron and sulfate concentrations are in the monitoring wells near and downgradient from the CCR landfill.

Lines of evidence regarding natural variability as an additional alternative source of the fluoride SSIs are discussed above in **Section 4.1.1**.

Each of these lines of evidence and the supporting data were discussed in detail in the ASD for the October 2017 detection monitoring event (SCS, 2018b). The lines of evidence are discussed briefly below, focusing on any updated information collected since the previous ASDs.

4.2.1 Previous CCR Pond and Landfill Study

A previous investigation titled *Field Investigation Report: Edgewater Closed Ash Disposal Facility*, completed by BT² in 1993, found that groundwater impacts were likely due to the closed landfill (**Figure 2**) located immediately west of the ponds (BT², 1993). The purpose of the 1993 investigation was to investigate the likely impact on groundwater quality of lining or abandoning the CCR impoundments (referred to in the report as the Wisconsin Pollutant Discharge Elimination System [WPDES] lagoons). The results from the investigation indicated that the CCR impoundments were not the primary source of downgradient groundwater impacts, and that closure or lining was not warranted at that time. The WDNR concurred with that finding in a letter dated April 20, 1994.

The primary lines of evidence from the 1993 report that supported this finding, and support the ASD for boron, fluoride, and sulfate, included:

- Water samples collected from each of the ponds met the Wisconsin groundwater enforcement standards established under NR 140, Wisconsin Administrative Code.
- Soil borings installed in the material below the larger ash pond, where the slag pond and the WPDES lagoons (North Pond A and South Pond A) were constructed, indicated that material below the ponds was almost entirely slag material. Water leaking out of the lagoons and moving downward would encounter primarily slag, which is relatively inert, and not fly ash.

- Results for water leach testing of site-wide composite samples of fly ash and slag confirmed that the fly ash had a higher potential than slag to impact groundwater. Water leach test results for the fly ash composite sample were higher for boron, sulfate, and fluoride in comparison to the slag composite sample.
- Ash disposal in the closed landfill was primarily fly ash. For seven borings in the landfill, the percent fly ash ranged from 60 to 86 percent.
- Water leach testing for individual boring samples of fly ash and/or slag also confirmed that fly ash leachate had significantly higher concentrations of boron and sulfate than slag leachate. For example, boron leach test results for seven samples from borings within the landfill, consisting mainly of fly ash, ranged from 624 to 3,370 micrograms per liter ($\mu\text{g/L}$), with most results over 2,000 $\mu\text{g/L}$. Boron leach test results for nine samples from borings around and between the ponds, consisting mainly of slag, ranged from less than 16 to 206 $\mu\text{g/L}$.
- Water sampling within the landfill and pond area, in CCR above the native soil, documented that groundwater/leachate within the landfill had significantly higher concentrations of boron than the groundwater/leachate within the slag berms immediately adjacent to and between the Slag Pond, North/South Pond A, and Pond B.
- Groundwater monitoring results indicated that the highest concentrations of boron and sulfate were in monitoring wells downgradient from the landfill, including 18-OW and 29-OW. Elevated boron and sulfate were also reported for samples from wells 4-OW and 5-OW, located near the southwest and northwest corners of the landfill. Monitoring wells 6-OW and 7-OW, located east and southeast of the ponds, had much lower concentrations of boron and sulfate.

In the April 1994 approval letter, the WDNR approved the 1993 investigation of the WPDES lagoons/CCR impoundments and concurred with the findings of the report. The WDNR requested additional monitoring from the four new monitoring wells installed within the CCR (36-OW, 37-OW, 38R-OW, and 39R-OW) and requested the addition of fluoride and arsenic to the monitoring program for these groundwater/leachate head wells.

The results of the additional monitoring were reported to the WDNR in a Groundwater Assessment Report dated September 30, 1997. The WDNR responded to the 1997 report in a letter dated April 16, 1998, which stated, "We agree with the report's finding that the WPDES ponds [Slag Pond, North Pond A, and South Pond A] do not appear to be significantly contributing to the contaminant plume downgradient of the facility. No further remedial action concerning the influence of the ponds on the landfill is warranted at this time." The WDNR also noted that the leachable constituents migrating from the saturated portion of the closed landfill have stabilized or also decreased since the landfill's closure and capping.

4.2.2 CCR Constituents in Landfill Leachate

Past and current monitoring performed under the state monitoring program shows that boron and sulfate are present in the CCR landfill leachate. Recent groundwater and leachate monitoring results for boron and sulfate in samples from the state monitoring program wells are summarized in **Table 4** (April 2016 through April 2023). The leachate head wells monitoring conditions within the CCR landfill are 37-OW, 38R-OW, and 39R-OW, listed near the end of the table. Beginning in October 2020, one or more of these wells have not been sampled because they were dry, or did not have

enough water in the well for sample collection; however, historical results can be used to characterize the leachate. Water levels within the landfill have decreased in response to the pond closures.

Boron: Boron concentrations in samples from leachate head wells 37-OW, 38R-OW, and 39R-OW have generally exceeded those reported for the CCR monitoring wells.

Sulfate: Sulfate concentrations in samples from leachate head wells 37-OW, 38R-OW, and 39R-OW have generally exceeded those reported for the CCR monitoring wells.

Fluoride: Fluoride is not part of the routine state monitoring program for the closed CCR landfill, but was sampled from the leachate wells (37-OW, 38R-OW, and 39R-OW) and the pond berm well (36-OW) from 1994 to 1997, as requested by the WDNR. The fluoride concentrations ranged from 0.25 to 0.97 mg/L (**Table 5**). The fluoride concentration for the sample collected at MW-302 (0.85 mg/L) was less than the highest observed concentration at the leachate wells.

Based on these results, fly ash disposal in the closed CCR landfill is a likely historical source of elevated boron and sulfate in groundwater, and is a potential source of fluoride.

4.2.3 State Program Groundwater Monitoring Results

Current monitoring performed under the state monitoring program continues to show that the highest boron and sulfate concentrations are in the monitoring wells near and downgradient from the CCR landfill. State program monitoring results for the CCR Rule detection monitoring parameters that overlap with the state program are summarized in **Table 4**, and well locations are on **Figure 2**.

Although boron concentrations in the downgradient state monitoring wells have decreased significantly since the time of the 1993 report, the recent groundwater monitoring results indicate that the highest concentrations of boron continue to be in monitoring wells downgradient from the landfill, including 40-OW (replaced former 18-OW) and 29-OW. Sulfate concentrations at 29-OW have decreased since 1993, but remain elevated at downgradient well 40-OW. Elevated boron and sulfate also continue to be reported for samples from wells 4R-OW (replacement well for 4-OW) and 5-OW, located near the southwest and northwest corners of the landfill. Concentrations of boron and sulfate in the CCR program monitoring wells are somewhat lower than current concentrations in the downgradient state program wells, and much lower than historic concentrations in the downgradient state program wells, consistent with the closed CCR landfill as the primary source.

5.0 ALTERNATIVE SOURCE DEMONSTRATION CONCLUSIONS

The lines of evidence discussed above regarding the SSIs reported for boron, fluoride, and sulfate concentrations in downgradient monitoring wells MW-301, MW-302, and/or MW-303 demonstrate that the SSIs are likely primarily due to leachate from the closed landfill, which is not subject to the requirements of 40 CFR 257.50-107. The landfill is regulated by the WDNR under the solid waste program. Natural variation may also contribute to the SSI reported for fluoride in downgradient monitoring well MW-302.

6.0 SITE GROUNDWATER MONITORING RECOMMENDATIONS

In accordance with section 257.94(e)(2) of the CCR Rule, the EDG pond site may continue with detection monitoring based on this ASD. The ASD report will be included in the 2024 Annual Report due January 31, 2025.

7.0 REFERENCES

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Tables

- 1 Groundwater Analytical Results Summary – October 2023
- 2 Historical Analytical Results for Parameters with SSIs
- 3A Groundwater Elevations – State Monitoring Wells
- 3B Groundwater Elevations – CCR Rule Monitoring Wells
- 4 2016-2023 Groundwater Analytical Results – Closed Landfill State Monitoring Program Wells
- 5 Analytical Results – Closed Landfill Leachate Fluoride Monitoring

**Table 1. Groundwater Analytical Results Summary
Edgewater Generating Station / SCS Engineers Project #25224068.00**

Parameter Name	UPL	Background Well	Compliance Wells		
		2R-OW 10/10/2023	MW-301 10/10/2023	MW-302 10/10/2023	MW-303 10/10/2023
Groundwater Elevation, ft amsl		600.38	592.51	592.01	585.79
Appendix III					
Boron, µg/L	78.4	33.5	6,600	1,400	4,160
Calcium, µg/L	201,000	156,000 P6	98,500	59,400	134,000
Chloride, mg/L	456	420	18.3	22.0	19.9
Fluoride, mg/L	0.200	<0.95 D3	0.20 J	0.85	<0.095
Field pH, Std. Units	8.57	7.06	7.66	7.89	6.99
Sulfate, mg/L	36.7	28.7	185	57.5	<0.44
Total Dissolved Solids, mg/L	1,220	1,080	560	308	600

4.4 Blue shaded cell indicates the compliance well result exceeds the UPL (background) and the Limit of Quantitation (LOQ).

Abbreviations:

UPL = Upper Prediction Limit
-- = Not Applicable

LOD = Limit of Detection mg/L = milligrams per liter
LOQ = Limit of Quantitation µg/L = micrograms per liter

Lab Notes:

D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

J = Estimated concentration at or above the LOD and below the LOQ.

P6 = Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

Notes:

1. An individual result above the UPL does not constitute an SSI above background. See the accompanying report text for identification of statistically significant results.
2. Interwell UPLs calculated based on results from background well 2R-OW. Interwell UPLs based on a 1-of-2 retesting approach. The interwell UPLs were updated in July 2023 using data from April 2016 through April 2023.

Created by: <u>RM</u>	Date: <u>11/17/2023</u>
Last revision by: <u>RM</u>	Date: <u>11/17/2023</u>
Checked by: <u>BAS</u>	Date: <u>12/14/2023</u>
Scientist/PM QA/QC: <u>TK</u>	Date: <u>1/13/2024</u>

**Table 2. Historical Analytical Results for Parameters with SSIs
Edgewater Generating Station, Sheboygan, Wisconsin
SCS Engineers Project #25224068.00**

Well Group	Well	Collection Date	Boron (µg/L)	Fluoride (mg/L)	Sulfate (mg/L)	
Background	2R-OW	4/8/2016	100	<0.20	19.5	
		6/20/2016	22.4	<0.20	28.0	
		8/9/2016	32.6	<0.20	25.4	
		10/20/2016	43.1	<0.10	21.6	
		1/24/2017	31.2	<0.10	23.9	
		4/6/2017	70.6	<0.10	17.6	
		6/6/2017	45.2	<0.10	17.8	
		8/1/2017	35.7	<0.10	28.8	
		10/23/2017	55.9	<0.10	29.3	
		4/2/2018	19.7	0.12 J	17.2	
		10/1/2018	34.7	<0.10	37.2	
		4/8/2019	35.8	<0.10	10.6	
		10/7/2019	58.8	<0.10	13.2	
		4/8/2020	52.3	<0.095	11.6	
		10/15/2020	29.9	<0.096 J	20.3	
		4/14/2021	45.7	<0.095	15.3	
		10/27/2021	47.2	<4.8 D3	35.7 J, D3	
		4/13/2022	27.9 1q	<0.95 D3	18.5 J, D3	
10/6/2022	49.0	<0.095	28.0			
4/26/2023	32.0	0.11 J	7.5			
10/10/2023	33.5	<0.95 D3	28.7			
Compliance	MW-301	4/11/2016	8,550	0.33 J	372	
		6/20/2016	8,190	0.36 J	343	
		8/9/2016	8,450	0.33 J	368	
		10/20/2016	8,620	0.34	369	
		1/23/2017	9,280	0.42	372	
		4/6/2017	8,370	0.21 J	367	
		6/6/2017	9,160	<0.10	362	
		8/2/2017	8,610	0.32	340	
		10/24/2017	8,820	<0.10	341	
		4/2/2018	7,950	0.25 J	332	
		10/1/2018	8,230	0.20 J	318	
		4/8/2019	7,310	0.29 J	322	
		10/7/2019	7,220	0.24 J	312	
		4/8/2020	7,450	0.39 M0	298	
		10/15/2020	6,550	<0.48 D3, M0	293	
		4/14/2021	7,200	0.25 J	195	
		10/26/2021	6,710	0.24 J, M0	203 M0	
		4/13/2022	7,240	<0.095	212	
	10/6/2022	6,230	0.21 J	213		
	4/25/2023	6,770	0.21 J	168		
	10/10/2023	6,600	0.20 J	185		
	MW-302	MW-302	4/8/2016	1,950	0.83	75.1
			6/20/2016	2,010	1.3 J	89.6
			8/9/2016	2,000	0.80	80.7
			10/20/2016	2,150	0.80	77.2
			1/24/2017	2,000	0.89 J	71.1
			4/6/2017	1,970	0.76	85.8
			6/6/2017	1,970	0.9	88.5
			8/2/2017	1,890	0.78	80.2
			10/24/2017	1,760	0.84	72.2
			4/2/2018	1,800	0.78	72.7
			10/1/2018	1,570	0.81	59.2
			4/8/2019	1,670	0.87	71.7
			10/7/2019	1,730	0.85	55.7
4/8/2020			1,570	0.97	65.3	
10/15/2020			1,410	1.0 J, D3	73.1	
4/14/2021			1,550	0.88	70.5	
10/26/2021	1,580	0.88	71.2			
4/13/2022	1,460	0.91	68.5			
10/6/2022	1,610	0.87	70.5			
4/26/2023	1,450	0.75	75.4			
10/10/2023	1,400	0.85	57.5			

**Table 2. Historical Analytical Results for Parameters with SSIs
Edgewater Generating Station, Sheboygan, Wisconsin
SCS Engineers Project #25224068.00**

Well Group	Well	Collection Date	Boron (µg/L)	Fluoride (mg/L)	Sulfate (mg/L)
Compliance	MW-303	4/8/2016	4,210	<0.20	3.0 J
		6/20/2016	3,360	<1.0	11.4 J
		8/9/2016	3,860	<0.20	2.4 J
		10/20/2016	3,740	<0.50	5.6 J
		1/24/2017	4,210	<0.50	<5.0
		4/6/2017	4,170	<0.50	<5.0
		6/6/2017	4,570	<0.50	<5.0
		8/2/2017	3,780	<0.50	<5.0
		10/24/2017	3,480	<0.50	<5.0
		4/2/2018	3,040	<0.50	<5.0
		10/1/2018	2,360	<0.10	<1.0
		4/8/2019	2,930	<0.50	<5.0
		10/7/2019	2,830	<0.50	<5.0
		4/8/2020	3,380	<0.48	<2.2
		10/15/2020	3,310	<0.48 D3	<2.2 D3
		4/14/2021	4,600	<0.095	0.54 J
		10/26/2021	3,650	<0.48 D3	<2.2 D3
		4/13/2022	4,360	<0.48 D3	<2.2 D3
		10/6/2022	3,650	<0.095	<0.44
		4/25/2023	4,870	<0.095	0.50 J
10/10/2023	4,160	<0.095	<0.44		

Abbreviations:

µg/L = micrograms per liter or parts per billion (ppb)

mg/L = milligrams per liter or parts per million (ppm)

-- = not analyzed

J = Estimated value below laboratory's limit of quantitation (LOQ)

M0 = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

1q = Analyte was measured in the associated method blank at -3.1 µg/L.

Notes:

- Complete laboratory reports are included in the Annual Groundwater Monitoring and Corrective Action Reports, Edgewater Generating Station.

Created by:	<u>RM</u>	Date:	<u>1/15/2024</u>
Last revision by:	<u>RM</u>	Date:	<u>1/15/2024</u>
Checked by:	<u>NLB</u>	Date:	<u>1/16/2024</u>

**Table 3A. Groundwater Elevations - State Monitoring Wells
Edgewater 1-4 Closed Ash Disposal Facility / SCS Engineers Project #25224068.00**

Well Number	Ground Water Elevation in feet above mean sea level (amsl)																	Water Elevation within Landfill				
	1-OW	2R-OW	3R-OW	4R-OW	5-OW	W-5A	6-AR	6R-OW	7A-OW	7-OW	18-OW	29-OW	29-A	30-OW	31-OW	32-OW	36-OW	40-OW	37-OW	38R-OW	39R-OW	
Top of Casing Elevation (ft amsl)[^]	592.18	611.85	591.59	594.68	600.94	600.66	590.78	591.74	593.45	593.19	ABAND	588.72	588.43	591.13	589.22	589.21	ABAND	586.69	615.30	620.24	614.27	
Screen Length (ft)																						
Total Depth (ft from top of casing)	11.10	17.53	15.82	16.48	10.65	21.51	19.86	10.37	20.21	9.93	14.25	19.96	43.12	14.88	14.98	14.95	21.01	17.3	18.55	29.00	22.29	
Top of Well Screen Elevation (ft)	580.62	595.19	575.50	579.12	590.07	580.33	571.46	580.61	573.20	582.58	572.22	568.90	546.13	575.93	574.02	574.12	593.62		596.47	591.98	591.75	
Measurement Date																						
October 24, 2012	588.11	607.82	582.64	585.24	595.63	596.69	587.42	587.40	592.00	589.78	583.49	585.33	586.60	586.40	582.58	583.63	599.77		599.42	599.38	598.05	
April 18, 2012					595.89	597.13	587.33	587.35	592.35	589.79		585.32	588.39									
October 24, 2012					595.63	596.69	587.42	587.40	592.00	589.78		585.33	586.60									
April 8, 2013	588.50	609.92	588.37	586.35	596.66	597.65	588.40	587.34	592.79	589.95	583.97	585.78	588.07	588.57	584.35	584.50	600.79	--	600.24	600.16	598.30	
October 22, 2013	584.88	601.15	580.90	584.46	594.23	595.64	582.64	584.83	591.23	587.24	NM ⁽¹⁾	584.70	586.76	582.19	580.40	580.76	599.13	--	598.22	598.42	596.56	
April 22, 2014	588.05	609.22	587.99	586.11	595.18	597.10	587.00	587.37	589.27	589.51	NM ⁽¹⁾	585.38	588.22	587.53	583.75	583.75	NM ⁽¹⁾	--	599.67	599.38	598.56	
October 28, 2014	586.14	607.27	586.30	585.08	595.33	596.51	587.68	586.99	591.92	589.29	NM ⁽¹⁾	585.00	587.84	585.48	582.88	582.68	600.07	--	599.81	599.26	598.37	
April 7 - 9, 2015	587.90	608.47	587.44	585.52	595.66	596.76	586.99	587.50	591.95	588.50	ABAND	585.44	587.55	586.29	583.21	583.87	599.69	583.77	599.21	599.21	597.46	
October 8, 2015	584.78	604.22	583.34	584.52	594.76	594.47	582.65	585.67	591.23	589.71	ABAND	584.69	587.27	584.26	581.60	582.52	600.29	583.01	599.47	599.70	598.09	
April 4-5, 2016	588.40	610.02	587.72	586.69	596.70	597.81	584.52	585.68	592.41	587.93	ABAND	582.95	587.25	586.91	584.35	584.47	601.05	579.28	601.37	601.18	601.13	
October 17, 2016 ⁽²⁾	587.50	607.27	586.71	585.15	595.41	596.82	584.34	586.61	592.01	587.65	ABAND	581.25	586.10	586.23	583.02	583.83	600.87	579.42	600.70	600.74	599.49	
April 12-13, 2017	588.23	609.80	587.95	586.31	596.08	597.69	586.77	587.32	592.19	587.06	ABAND	583.74	585.43	585.36	583.68	584.52	602.01	584.02	602.11	602.08	601.29	
October 9, 2017	584.14	600.87	581.00	584.49	594.68	596.04	583.03	583.51	590.50	585.96	ABAND	583.01	584.88	582.76	580.93	581.18	600.18	583.05	598.48	599.65	598.07	
April 2, 2018	587.79	607.87	586.63	586.68	595.73	596.88	586.80	587.44	591.76	589.62	ABAND	585.51	587.11	585.68	582.95	582.85	600.71	583.64	600.00	600.04	597.99	
June 19, 2018	NM	605.70	585.49	585.20	595.41	NM	NM	NM	NM	587.20	ABAND	585.43	585.79	584.96	582.29	NM	NM ⁽¹⁾	583.07	600.44	600.68	599.61	
October 1, 2018	585.37	604.61	584.18	584.86	595.24	596.44	586.10	586.86	591.01	588.75	ABAND	585.04	584.94	584.79	582.11	582.81	600.30	583.17	600.12	600.27	599.79	
April 8, 2019	588.57	609.50	588.01	591.93	596.03	597.33	584.61	587.35	591.92	590.06	ABAND	585.76	586.75	587.83	584.18	584.85	600.21	583.75	599.60	599.74	598.49	
October 9-10, 2019	587.85	609.39	587.39	585.99	595.68	596.92	586.42	587.24	591.66	587.53	ABAND	585.14	585.10	587.15	583.63	584.48	599.92	583.08	600.25	600.01	599.82	
April 8-9, 2020	588.03	608.97	587.70	586.05	595.57	596.89	585.74	586.95	591.61	587.76	ABAND	584.98	587.35	587.29	583.70	584.59	599.40	583.01	599.52	599.48	599.38	
October 14-15, 2020	584.62	604.37	582.20	584.54	593.27	594.86	582.71	583.45	588.81	586.53	ABAND	583.95	586.83	583.83	582.60	582.82	ABAND	583.26	596.87	NM	594.72	
April 14, 2021	587.95	608.50	587.64	585.42	594.87	596.13	586.53	587.29	591.28	589.89	ABAND	585.16	587.64	587.06	583.46	584.25	ABAND	583.08	DRY	596.50	593.95	
October 27-28, 2021	584.53	603.62	580.74	584.47	593.06	594.70	579.90	584.60	590.45	587.39	ABAND	584.60	586.65	582.89	581.88	582.02	ABAND	582.74	DRY	595.49	592.34	
February 28, 2022	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	ABAND	NM	NM	NM	NM	NM	ABAND	NM	DRY	595.25	NM	
April 13, 2022	588.64	608.63	588.30	585.06	595.72	595.11	586.08	588.15	591.60	590.70	ABAND	584.69	584.82	588.02	584.10	585.09	ABAND	583.09	DRY	594.43	DRY	
October 6, 2022	584.39	601.93	580.62	583.52	593.16	593.41	582.43	584.86	590.02	587.38	ABAND	583.21	584.18	583.09	581.55	581.98	ABAND	582.60	DRY	594.62	593.36	
April 25-26, 2023	588.51	607.74	588.00	585.15	595.48	595.22	588.13	588.18	591.90	590.13	ABAND	584.92	586.46	587.94	583.60	584.62	ABAND	583.17	597.35	596.81	598.09	
October 10-11, 2023	583.99	599.85	579.87	583.26	592.52	592.83	583.52	582.36	588.67	585.67	ABAND	583.46	583.80	582.27	580.47	581.37	ABAND	582.01	DRY	595.63	594.40	
Bottom of Well Elevation (ft)	591.72	612.72	591.32	595.60	600.72	601.84	591.32	590.98	573.20	582.58	572.22	568.90	546.13	575.93	574.02	574.12	593.62	568.75	596.47	592.14	591.75	

Notes: Created by: MDB Date: 5/6/2013
 NM = not measured Last revision by: NLB Date: 12/29/2023
 ABAND = abandoned Checked by: RM Date: 1/11/2024

1: Well broken
 2: Well casings at 7-OW, 7A, and 29-OW were cut down to allow the protective covers to close. 7-OW was cut down by 0.22 ft, 7A was cut down by 0.29 ft, and 29-OW was cut down by 0.17 ft.
 Top of casing elevations in this table were adjusted accordingly.
 *: Well was frozen

[^]: Monitoring well adjustments and resurveys:
 Monitoring well 38R-OW was extended on October 30, 2020 during repairs following well damage by pond closure construction equipment.
 Monitoring Well 40-OW cut down to have a top of casing elevation of 586.05 fmsl on December 3, 2021.
 All active monitoring wells were resurveyed in January 2023. These elevations are retroactively applied to 2022 monitoring events.

Table 3B. Groundwater Elevations - CCR Monitoring Wells
WPL - Edgewater 1-4 (Closed) Ash Disposal Facility / SCS Engineers Project #25224068.00

Ground Water Elevation in feet above mean sea level (amsl)				
Well Number	MW-301	MW-302	MW-303	2R-OW
Top of Casing Elevation (feet AMSL)^(1,2,3)	606.90	607.70	604.78	611.85
Screen Length (ft)	5.00	5.00	5.00	10.00
Total Depth (ft from top of casing)	27.47	40.00	33.26	14.50
Top of Well Screen Elevation (ft)	581.95	580.15	579.60	608.22
Measurement Date				
April 8, 2016	599.75	596.19	589.04	609.68
June 20, 2016	598.30	595.68	587.22	606.70
August 9, 2016	598.00	595.53	587.72	605.74
October 20, 2016	598.50	595.46	588.37	607.27
January 23-24, 2017	597.10	596.30	588.84	609.64
April 6, 2017	600.04	593.57	589.04	609.72
October 24, 2017	598.77	595.86	588.44	607.63
August 1, 2017	597.40	595.22	587.36	604.59
October 24, 2017	597.20	595.25	587.97	601.74
April 2, 2018	598.54	595.71	588.77	607.87
October 1, 2018	597.60	595.28	588.17	604.61
April 8, 2019	598.92	595.68	588.88	609.50
October 7, 2019	599.56	595.58	588.77	609.39
June 26, 2020	597.89	NM	NM	NM
October 15, 2020	595.10	590.18	585.07	604.27
April 14, 2021	596.81	592.18	586.89	608.50
October 26, 2021	592.32	591.44	585.95	604.04
April 13, 2022	597.37	593.05	587.99	608.63
October 6, 2022	592.69	591.96	586.42	601.93
April 25-26, 2023	597.77	593.63	587.99	607.74
October 10, 2023	592.51	592.01	585.79	600.38
Bottom of Well Elevation (ft)	576.95	575.15	578.73	598.22

Notes:

NM = not measured

(1): MW-302 and MW-303 were shortened in September 2020 due to site regrading during pond closure. The wells were resurveyed in November 2020.

(2): MW-301 was extended in November 2020 due to site regrading during pond closure. The well was resurveyed in November 2020.

(3): All site wells were re-surveyed in January 2023, and elevations were tied to NGS benchmark PID #DE7593. These elevations are retroactively applied to 2022 monitoring events.

Created by:	<u>MDB</u>	Date:	<u>6/27/2016</u>
Last rev. by:	<u>MDB</u>	Date:	<u>5/2/2023</u>
Checked by:	<u>REO</u>	Date:	<u>5/4/2023</u>
Scientist QA/QC:	<u>TK</u>	Date:	<u>1/8/2024</u>

**Table 4. 2016 - 2023 Groundwater Analytical Results -
Closed Landfill State Monitoring Program Wells
WPL - Edgewater Generating Station / SCS Project #25224068.00
Sheboygan, Wisconsin**

Point Name	Reporting Period	pH-Field (Standard Units)	Boron, dissolved (µg/L as B)	Sulfate, dissolved (mg/L as SO ₄)
Monitoring Wells				
2R-OW	2016-Apr	7.45	26.6	30.9
2R-OW	2016-Oct	6.98	40.4	22.9
2R-OW	2017-Apr	7.30	69.3 J	28.6
2R-OW	2017-Oct	7.66	35.2	32.9
2R-OW	2018-Apr	7.29	23.3	18.2
2R-OW	2018-Oct	7.03	41.8	35.5
2R-OW	2019-Apr	8.57	40.6	12.2
2R-OW	2019-Oct	6.76	88.5	29.3
2R-OW	2020-Apr	7.40	45.8	16.9
2R-OW	2020-Oct	7.40	29.9	21.8
2R-OW	2021-Apr	7.52	31.1	22.7
2R-OW	2021-Oct	8.12	39.2	26
2R-OW	2022-Apr	7.20	25.7	14.1 M0
2R-OW	2022-Oct	7.08	36.3	28.0
2R-OW	2023-Apr	7.30	34.9	7.9 M0
2R-OW	2023-Oct	7.06	32.4	34.4 J,D3
3R-OW	2016-Apr	7.41	392	533
3R-OW	2016-Oct	7.32	468	372
3R-OW	2017-Apr	7.35	400	409
3R-OW	2017-Oct	7.39	389	637
3R-OW	2018-Apr	7.24	351	498
3R-OW	2018-Oct	7.03	462	495
3R-OW	2019-Apr	7.70	337	279
3R-OW	2019-Oct	6.45	454	299
3R-OW	2020-Apr	7.21	473	498
3R-OW	2020-Oct	7.57	339	654
3R-OW	2021-Apr	7.76	316	172
3R-OW	2021-Oct	7.21	260	497
3R-OW	2022-Apr	7.45	234	126
3R-OW	2022-Oct	7.19	272	567
3R-OW	2023-Apr	7.27	387	392
3R-OW	2023-Oct	7.37	309	498
4R-OW	2016-Apr	7.69	7,710	120
4R-OW	2016-Oct	7.71	17,300	252
4R-OW	2017-Apr	7.44	12,600	180
4R-OW	2017-Oct	7.31	15,700	178
4R-OW	2018-Apr	7.51	12,700	164
4R-OW	2018-Oct	7.22	8,630	129
4R-OW	2019-Apr	6.67	10,200	158
4R-OW	2019-Oct	7.51	9,200	161
4R-OW	2020-Apr	7.40	9,320	90.9
4R-OW	2020-Oct	7.57	10,200	134
4R-OW	2021-Apr	8.16	10,800	191
4R-OW	2021-Oct	7.62	10,400	140
4R-OW	2022-Apr	7.67	8,930	76
4R-OW	2022-Oct	7.47	8,840	112
4R-OW	2023-Apr	7.28	8,200	95.5
4R-OW	2023-Oct	7.66	6,400	66.7
5-OW	2016-Apr	7.64	4,330	215
5-OW	2016-Oct	7.75	5,970	210
5-OW	2017-Apr	7.51	5,490	258
5-OW	2017-Oct	7.54	6,040	230
5-OW	2018-Apr	7.90	3,900	143
5-OW	2018-Oct	7.43	6,180	226
5-OW	2019-Apr	6.74	4,140	197
5-OW	2019-Oct	7.19	4,680	179
5-OW	2020-Apr	--	4,610	199
5-OW	2020-Oct	7.78	4,870	161
5-OW	2021-Apr	8.31	2,670	111
5-OW	2021-Oct	7.82	3,250	100
5-OW	2022-Apr	7.75	2,280	82.1
5-OW	2022-Oct	7.62	3,830	101
5-OW	2023-Apr	7.99	1,550	21.0
5-OW	2023-Oct	7.94	3,620	135

**Table 4. 2016 - 2023 Groundwater Analytical Results -
Closed Landfill State Monitoring Program Wells
WPL - Edgewater Generating Station / SCS Project #25224068.00
Sheboygan, Wisconsin**

Point Name	Reporting Period	pH-Field (Standard Units)	Boron, dissolved (µg/L as B)	Sulfate, dissolved (mg/L as SO ₄)
Monitoring Wells (continued)				
7-OW	2016-Apr	8.14	610	255
7-OW	2016-Oct	7.59	964	251
7-OW	2017-Apr	8.10	761	259
7-OW	2017-Oct	7.73	1,130	246
7-OW	2018-Apr	8.08	818	243
7-OW	2018-Oct	7.69	1150	218
7-OW	2019-Apr	7.85	914	254
7-OW	2019-Oct	7.47	1,200	224
7-OW	2020-Apr	8.01	928	214
7-OW	2020-Oct	7.74	1,290	242
7-OW	2021-Apr	8.12	961	247
7-OW	2021-Oct	7.94	1,350	224
7-OW	2022-Apr	7.47	1,110	225
7-OW	2022-Oct	7.80	1,210	189
7-OW	2023-Apr	7.69	1,090	213
7-OW	2023-Oct	7.81	1,250	166
29-A	2016-Apr	9.07	357	40.9
29-A	2016-Oct	8.54	264	39.6
29-A	2017-Apr	9.09	365	41.5
29-A	2017-Oct	8.97	278	42.1
29-A	2018-Apr	8.72	264	39.4
29-A	2018-Oct	8.38	268	39.2
29-A	2019-Apr	8.10	292	44.2
29-A	2019-Oct	8.81	258	39.1
29-A	2020-Apr	8.82	268	37.5
29-A	2020-Oct	8.90	263	42.9
29-A	2021-Apr	8.62	262	214
29-A	2021-Oct	9.35	233	40.8
29-A	2022-Apr	7.94	250	39.6
29-A	2022-Oct	8.82	495	44.3
29-A	2023-Apr	8.86	268	44.1
29-A	2023-Oct	9.32	263	39.0
29-OW	2016-Apr	8.03	10,600	120
29-OW	2016-Oct	7.69	10,900	85.7
29-OW	2017-Apr	8.49	9,500	77.0
29-OW	2017-Oct	8.15	9,060	62.0
29-OW	2018-Apr	7.97	8,640	102
29-OW	2018-Oct	7.84	11,000	109
29-OW	2019-Apr	7.89	10,600	190
29-OW	2019-Oct	7.57	10,800	114
29-OW	2020-Apr	7.90	9,160	69.9
29-OW	2020-Oct	8.09	8,480	73.3
29-OW	2021-Apr	8.2	7,120	66.4
29-OW	2021-Oct	8.59	8,700	86.7
29-OW	2022-Apr	7.55	9,160	77.2
29-OW	2022-Oct	7.76	9,160	70.2
29-OW	2023-Apr	8.10	8,570	69.2
29-OW	2023-Oct	7.99	7,410	42.2
30-OW	2016-Apr	8.26	79.1	4.80
30-OW	2016-Oct	7.56	113	4.60
30-OW	2017-Apr	8.47	176	7.50
30-OW	2017-Oct	7.44	135	16.7
30-OW	2018-Apr	7.96	94.5	21.5
30-OW	2018-Oct	7.47	115	11.4
30-OW	2019-Apr	8.07	52.1	2.40 J
30-OW	2019-Oct	7.37	84.9	5.60
30-OW	2020-Apr	7.61	54.4	2.80
30-OW	2020-Oct	7.24	118	15.2
30-OW	2021-Apr	8.26	42.3	5.5
30-OW	2021-Oct	7.52	108	14.9
30-OW	2022-Apr	7.91	35.9	3.6
30-OW	2022-Oct	7.48	93.1	10.7
30-OW	2023-Apr	7.78	27.5	5.0
30-OW	2023-Oct	7.85	80.6	11.0

**Table 4. 2016 - 2023 Groundwater Analytical Results -
Closed Landfill State Monitoring Program Wells
WPL - Edgewater Generating Station / SCS Project #25224068.00
Sheboygan, Wisconsin**

Point Name	Reporting Period	pH-Field (Standard Units)	Boron, dissolved (µg/L as B)	Sulfate, dissolved (mg/L as SO ₄)
Monitoring Wells (continued)				
31-OW	2016-Apr	7.63	114	91.2
31-OW	2016-Oct	7.68	34.7	63.3
31-OW	2017-Apr	7.99	76.9	82.4
31-OW	2017-Oct	7.79	190	70.3
31-OW	2018-Apr	7.71	30.8	51.5
31-OW	2018-Oct	7.64	36.7	62.7
31-OW	2019-Apr	7.95	18.5	68.6
31-OW	2019-Oct	7.41	38.6	57.5
31-OW	2020-Apr	7.54	25.8	39.1
31-OW	2020-Oct	7.69	30.8	58.5
31-OW	2021-Apr	8.33	51	59.5
31-OW	2021-Oct	7.47	39.5	35
31-OW	2022-Apr	7.94	32.2	26.5
31-OW	2022-Oct	7.66	48.3	30.4
31-OW	2023-Apr	7.72	30.7	35.2
31-OW	2023-Oct	7.87	46.3	31.6
40-OW	2016-Apr	8.04	8,030	731
40-OW	2016-Oct	7.91	29,400	768
40-OW	2017-Apr	7.97	8,680	849
40-OW	2017-Oct	7.91	8,800	873
40-OW	2018-Apr	7.93	9,790	771
40-OW	2018-Oct	7.51	11,300	797
40-OW	2019-Apr	6.80	8,620	636
40-OW	2019-Oct	7.53	10,600	836
40-OW	2020-Apr	7.83	10,900	836
40-OW	2020-Oct	8.03	9,870	818
40-OW	2021-Apr	8.23	8,010	827
40-OW	2021-Oct	8.53	9,180	839
40-OW	2022-Apr	7.68	10,000	807
40-OW	2022-Oct	8.03	8,840	748
40-OW	2023-Apr	8.01	7,670	709
40-OW	2023-Oct	8.17	6,850	707
Leachate Monitoring Wells				
37-OW	2016-Apr	7.49	19,100	759
37-OW	2016-Oct	7.31	12,500	439
37-OW	2017-Apr	8.01	15,900	633
37-OW	2017-Oct	7.24	9,440	264
37-OW	2018-Apr	7.68	5,890	159
37-OW	2018-Oct	7.42	16,600	555
37-OW	2019-Apr	7.57	15,800	492
37-OW	2019-Oct	7.13	16,300	798
37-OW	2020-Apr	7.70	20,200	769
37-OW	2020-Oct	--	--	--
37-OW	2021-Apr	--	--	--
37-OW	2021-Oct	--	--	--
37-OW	2022-Apr	--	--	--
37-OW	2022-Oct	--	--	--
37-OW	2023-Apr	--	--	--
37-OW	2023-Oct	--	--	--
38R-OW	2016-Apr	8.00	33,800	1,000
38R-OW	2016-Oct	7.71	17,100	514
38R-OW	2017-Apr	7.86	21,100	932
38R-OW	2017-Oct	7.72	10,800	364
38R-OW	2018-Apr	7.72	4,250	123
38R-OW	2018-Oct	7.98	32,400	956
38R-OW	2019-Apr	7.64	9,720	330
38R-OW	2019-Oct	8.06	30,400	1,020
38R-OW	2020-Apr	8.20	51,800	1,520
38R-OW	2020-Oct	--	--	--
38R-OW	2021-Apr	7.65	37,400	1,380
38R-OW	2021-Oct	7.48	38,400	1,310
38R-OW	2022-Apr	--	--	--
38R-OW	2022-Oct	7.40	41,700	1,420
38R-OW	2023-Apr	7.40	44,800	1,220 M0
38R-OW	2023-Oct	7.66	38,800	1130

**Table 4. 2016 - 2023 Groundwater Analytical Results -
Closed Landfill State Monitoring Program Wells
WPL - Edgewater Generating Station / SCS Project #25224068.00
Sheboygan, Wisconsin**

Point Name	Reporting Period	pH-Field (Standard Units)	Boron, dissolved (µg/L as B)	Sulfate, dissolved (mg/L as SO ₄)
Leachate Monitoring Wells (continued)				
39R-OW	2016-Apr	7.26	10,100	534
39R-OW	2016-Oct	7.32	29,900	1,390
39R-OW	2017-Apr	7.44	22,400	1,150
39R-OW	2017-Oct	7.52	32,800	1,400
39R-OW	2018-Apr	--	28,800	772
39R-OW	2018-Oct	7.40	24,700	1,160
39R-OW	2019-Apr	7.14	26,000	1,520
39R-OW	2019-Oct	7.13	17,100	601
39R-OW	2020-Apr	7.42	19,100	1,160
39R-OW	2020-Oct	7.69	34,200	1,190
39R-OW	2021-Apr	7.95	24,800	1,140
39R-OW	2021-Oct	--	--	--
39R-OW	2022-Apr	--	--	--
39R-OW	2022-Oct	--	--	--
39R-OW	2023-Apr	7.4	16,800	261
39R-OW	2023-Oct	--	--	--

Abbreviations:

µg/L = micrograms per liter or parts per billion (ppb)
mg/L = milligrams per liter or parts per million (ppm)

Notes:

-- : not measured

Laboratory Notes:

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

M0 = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Created by: SCC
Last revision by: RM
Checked by: NLB

Date: 2/24/2014
Date: 1/15/2024
Date: 1/16/2024

**Table 5. Analytical Results - Closed Landfill Leachate Fluoride Monitoring
Edgewater Generating Station, Sheboygan, Wisconsin
SCS Engineers Project #25224068.00**

Collection Date	Fluoride (mg/L)			
	36-OW	37-OW	38R-OW	39R-OW
9/8/1994	0.25	0.62	0.57	0.79
9/14/1995	0.38	0.51	0.71	0.87
9/17/1996	0.56	0.42	0.71	0.97
9/16/1997	0.60	0.44	0.73	0.97

Abbreviations:

mg/L = milligrams per liter or parts per million (ppm)

Notes:

1. Data compiled from WDNR Groundwater Environmental Monitoring System (GEMS) website.

Created by: <u>NDK</u>	Date: <u>3/5/2018</u>
Last revision by: <u>NDK</u>	Date: <u>3/5/2018</u>
Checked by: <u>AJR</u>	Date: <u>4/5/2018</u>

I:\25222068.00\Deliverables\2022 Apr ASD Edg Closed\Tables\[Table 5 - EDG - closed-Leachate Fluoride Monitoring.xlsx]Table 5- Fl results

Figures

- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations
- 3 Water Table Map – October 2023



SITE LOCATION



SHEBOYGAN SOUTH QUADRANGLE
 WISCONSIN-SHEBOYGAN CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)
 2018
 SCALE: 1" = 2,000'



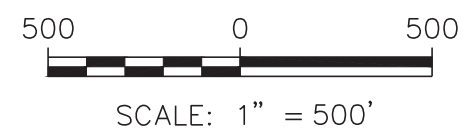
CLIENT	WISCONSIN POWER AND LIGHT EDGEWATER GENERATING STATION 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081		SITE	EDGEWATER 1-4 (CLOSED) ASH DISPOSAL FACILITY SHEBOYGAN, WISCONSIN		ENGINEER	SITE LOCATION MAP	
	PROJECT NO.	25222068.00		DRAWN BY:	BSS		SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE
DRAWN:	11/20/2019	CHECKED BY:	MDB					
REVISED:	01/16/2023	APPROVED BY:	TK, 1/16/2023					

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LEGEND	
	CCR RULE MONITORING WELL
	CCR RULE BACKGROUND MONITORING WELL
	ADDITIONAL MONITORING WELL
	ADDITIONAL PIEZOMETER
	ABANDONED MONITORING WELL
	ABANDONED STAFF GAUGE
	CCR UNITS
	CLOSED LANDFILL LIMITS

- NOTES:
1. AERIAL PHOTOGRAPH FROM ARCMAP WORLDMAP: MAXAR. DATE OF IMAGE IS APRIL 3, 2021.
 2. WELL LOCATIONS ARE APPROXIMATE AND ARE BASED ON OCTOBER 2011 WATER TABLE MAP PREPARED BY TRC.
 3. CCR UNIT LIMITS AND CLOSED LANDFILL LOCATION ARE APPROXIMATE.
 4. MONITORING WELLS MW-301, MW-302, AND MW-303 WERE INSTALLED BY BADGER STATE DRILLING BETWEEN JANUARY 14 AND FEBRUARY 4, 2016.
 5. THE BACKGROUND MONITORING WELL FOR THE EDGEWATER GENERATING STATION IS 2R-OW.



PROJECT NO.	25222068.00	DRAWN BY:	BSS
DRAWN:	11/20/2019	CHECKED BY:	MDB
REVISED:	01/16/2023	APPROVED BY:	TK, 1/16/2023

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

CLIENT
 WISCONSIN POWER AND LIGHT
 EDGEWATER GENERATING STATION
 3739 LAKESHORE DRIVE
 SHEBOYGAN, WI 53081

SITE
 EDGEWATER 1-4 (CLOSED)
 ASH DISPOSAL FACILITY
 SHEBOYGAN, WISCONSIN

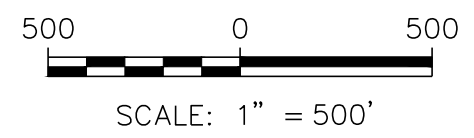
SITE PLAN AND MONITORING WELL LOCATIONS

FIGURE
 2




LEGEND	
	ABANDONED MONITORING WELL
	CCR MONITORING WELL
	MONITORING WELL
	PIEZOMETER
	ABANDONED STAFF GAUGE
	CCR UNITS
	CLOSED LANDFILL LIMITS
	DESIGN MANAGEMENT ZONE
598.54	WATER TABLE ELEVATION
[595.63]	WATER TABLE ELEVATION WITHIN LANDFILL
	WATER TABLE CONTOUR (5' INTERVAL)
	APPROXIMATE GROUNDWATER FLOW DIRECTION

- NOTES:
1. AERIAL PHOTOGRAPH FROM ARCMAP WORLDMAP: MAXAR. DATE OF IMAGE IS APRIL 3, 2021.
 2. EXISTING WELL LOCATIONS ARE APPROXIMATE AND ARE BASED ON OCTOBER 2011 WATER TABLE MAP PREPARED BY TRC.
 3. DESIGN MANAGEMENT ZONE LOCATION IS APPROXIMATE
 4. NEW MONITORING WELL LOCATIONS WERE SURVEYED BY CQM, INC. ON FEBRUARY 12, 2016.
 5. MW-301, MW-302, AND MW-303 ARE NOT INCLUDED IN THE WDNR-APPROVED SITE-SPECIFIC MONITORING PLAN
 6. GROUNDWATER ELEVATIONS COLLECTED FROM MONITORING WELLS ON OCTOBER 10-11, 2023.



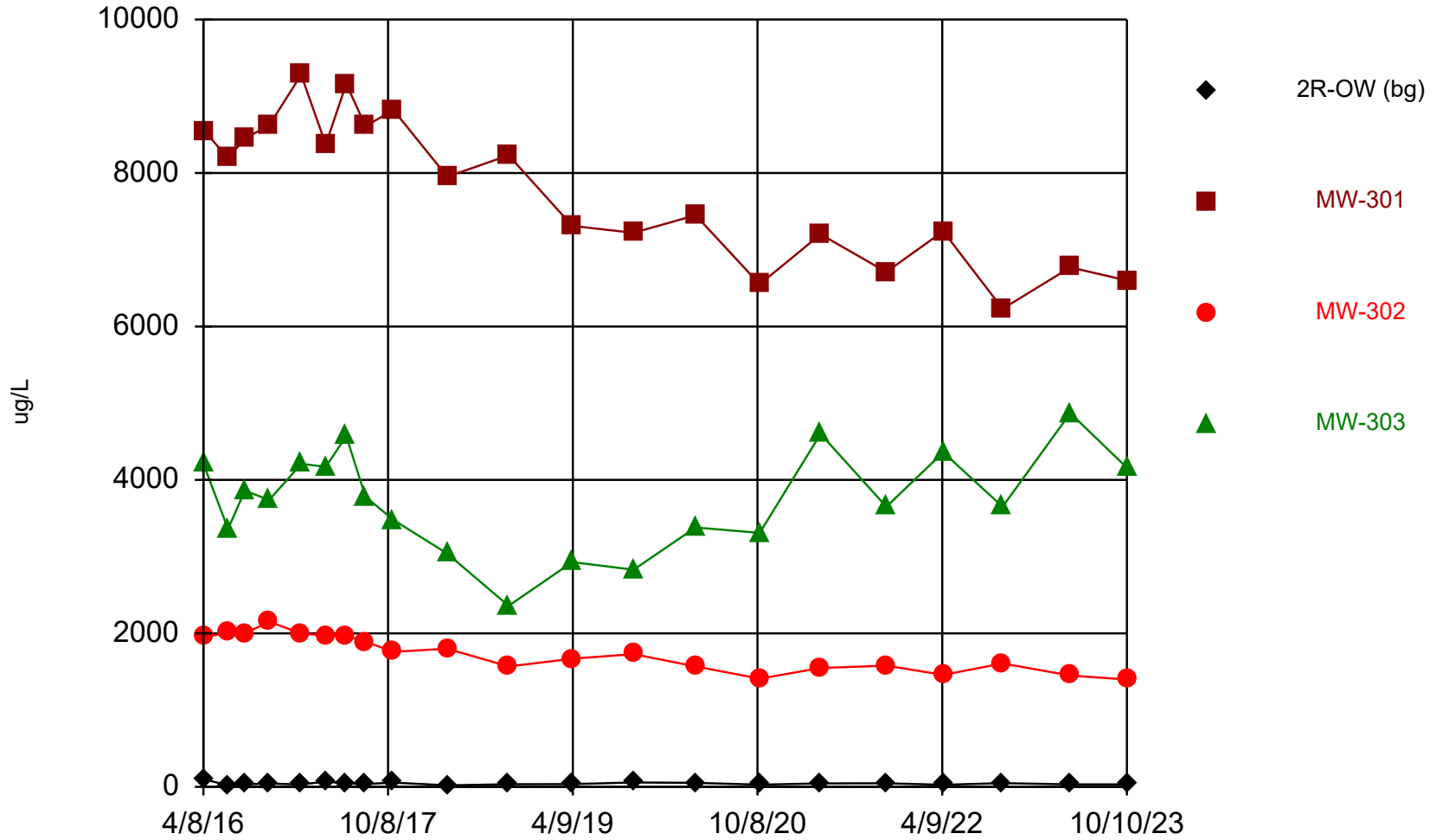
PROJECT NO. 25223068.00	DRAWN BY: KP	 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	CLIENT WISCONSIN POWER AND LIGHT EDGEWATER GENERATING STATION 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081	SITE EDGEWATER 1-4 (CLOSED) ASH DISPOSAL FACILITY SHEBOYGAN, WISCONSIN	WATER TABLE MAP OCTOBER 2023	FIGURE
DRAWN: 12/01/2023	CHECKED BY: NLB					3
REVISED: 01/11/2024	APPROVED BY: TK 4/25/2024					

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Appendix A
Trend Plots for CCR Wells

Boron



Time Series Analysis Run 1/15/2024 2:42 PM View: CCR - UPL - 2020

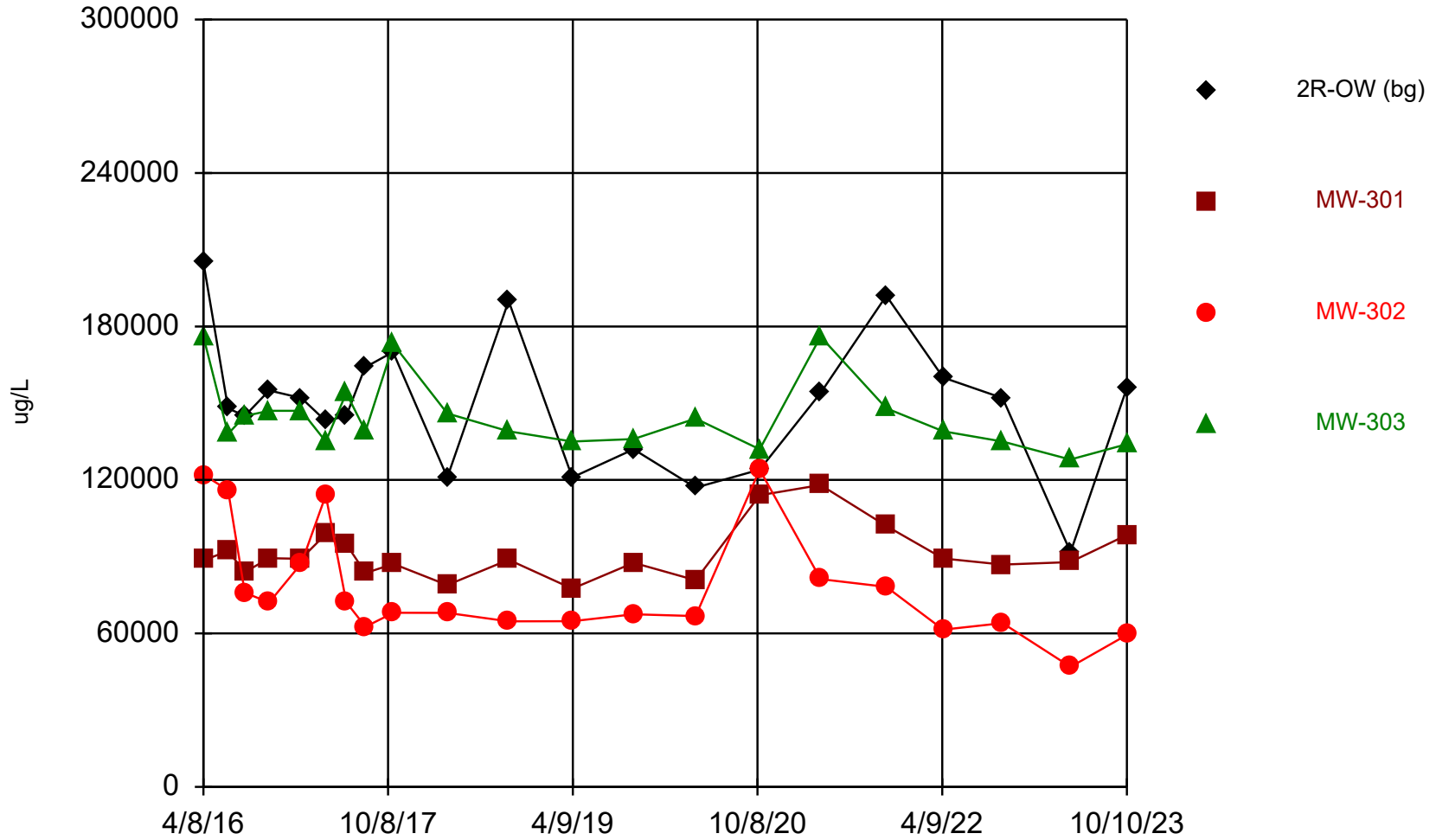
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

Time Series

Constituent: Boron (ug/L) Analysis Run 1/15/2024 2:43 PM View: CCR - UPL - 2020
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

	2R-OW (bg)	MW-301	MW-302	MW-303
4/8/2016	100		1950	4210
4/11/2016		8550		
6/20/2016	22.4	8190	2010	3360
8/9/2016	32.6	8450	2000	3860
10/20/2016	43.1	8620	2150	3740
1/23/2017		9280		
1/24/2017	31.2		2000	4210
4/6/2017	70.6	8370	1970	4170
6/6/2017	45.2	9160	1970	4570
8/1/2017	35.7			
8/2/2017		8610	1890	3780
10/23/2017	55.9			
10/24/2017		8820	1760	3480
4/2/2018	19.7	7950	1800	3040
10/1/2018	34.7	8230	1570	2360
4/8/2019	35.8	7310	1670	2930
10/7/2019	58.8	7220	1730	2830
4/8/2020	52.3	7450	1570	3380
10/15/2020	29.9	6550	1410	3310
4/14/2021	45.7	7200	1550	4600
10/26/2021	47.2	6710	1580	3650
4/13/2022	27.9	7240	1460	4360
10/6/2022	49	6230	1610	3650
4/25/2023		6770		4870
4/26/2023	32		1450	
10/10/2023	33.5	6600	1400	4160

Calcium



Time Series Analysis Run 1/15/2024 2:42 PM View: CCR - UPL - 2020

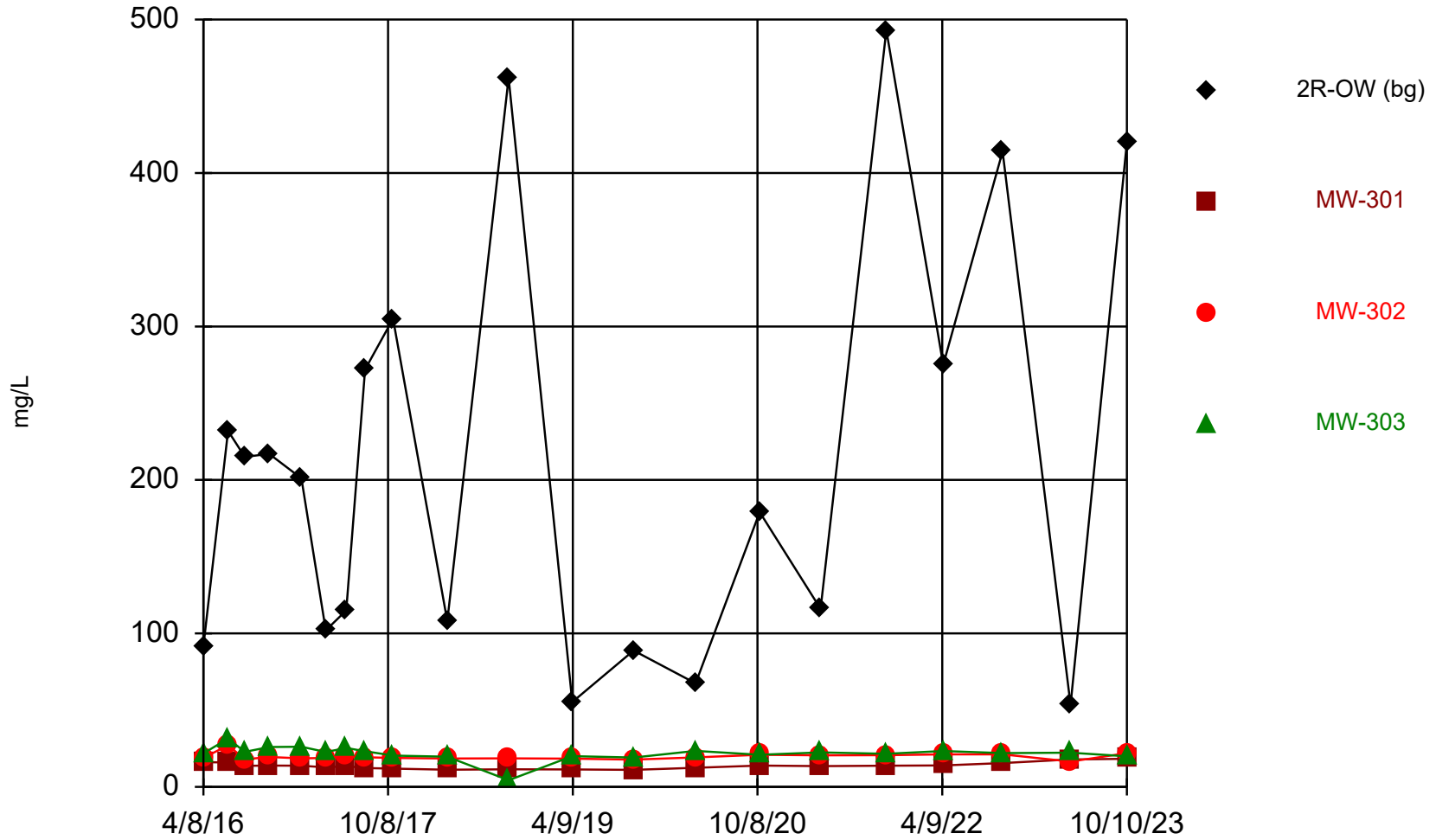
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

Time Series

Constituent: Calcium (ug/L) Analysis Run 1/15/2024 2:43 PM View: CCR - UPL - 2020
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

	2R-OW (bg)	MW-301	MW-302	MW-303
4/8/2016	205000		122000	176000
4/11/2016		88700		
6/20/2016	148000	92200	116000	138000
8/9/2016	145000	84000	75900	145000
10/20/2016	155000	89400	72100	147000
1/23/2017		89200		
1/24/2017	152000		87400	147000
4/6/2017	143000	98800	114000	135000
6/6/2017	145000	94900	72200	154000
8/1/2017	164000			
8/2/2017		83600	62600	139000
10/23/2017	170000			
10/24/2017		87200	68100	173000
4/2/2018	121000	78900	68000	146000
10/1/2018	190000	88800	64700	139000
4/8/2019	121000	77500	64800	135000
10/7/2019	132000	87600	67500	136000
4/8/2020	117000	80800	66800	144000
10/15/2020	124000	114000	124000	132000
4/14/2021	154000	118000	81200	176000
10/26/2021	192000	102000	78200	148000
4/13/2022	160000	89300	61500	139000
10/6/2022	152000	86900	64000	135000
4/25/2023		87900		128000
4/26/2023	91800		46900	
10/10/2023	156000	98500	59400	134000

Chloride



Time Series Analysis Run 1/15/2024 2:42 PM View: CCR - UPL - 2020

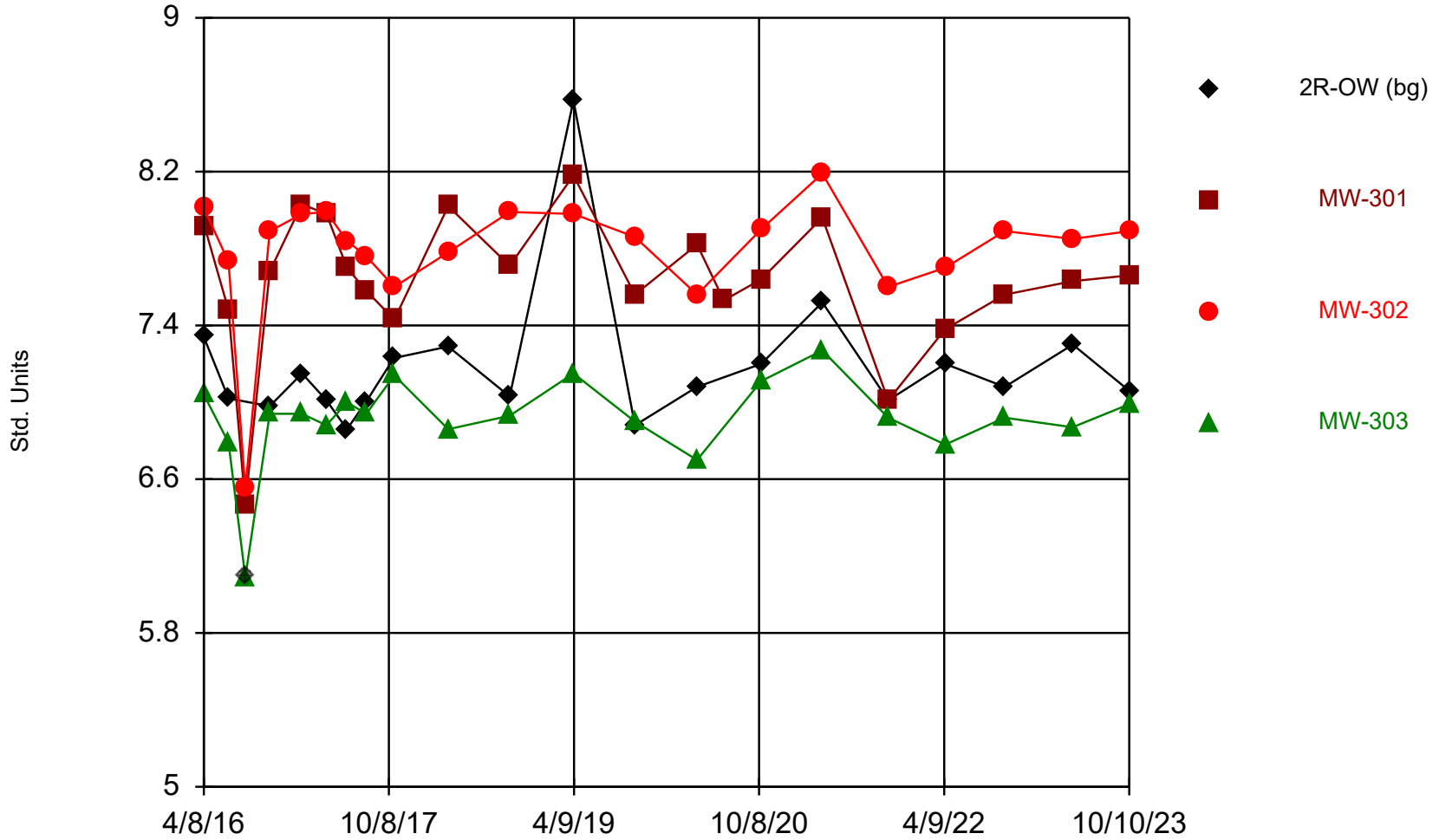
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

Time Series

Constituent: Chloride (mg/L) Analysis Run 1/15/2024 2:43 PM View: CCR - UPL - 2020
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

	2R-OW (bg)	MW-301	MW-302	MW-303
4/8/2016	91.7		18.9	21.8
4/11/2016		16.2		
6/20/2016	232	15.9	27.2	31.5
8/9/2016	215	13.7	18	22.8
10/20/2016	217	13.9	19.5	26
1/23/2017		13.8		
1/24/2017	201		18.6	26.2
4/6/2017	102	12.7	18.9	22.7
6/6/2017	115	13.5	20	25.4
8/1/2017	272			
8/2/2017		12.3	19.3	23.2
10/23/2017	305			
10/24/2017		11.9	18.9	20.4
4/2/2018	108	11.2	18.5	19.7
10/1/2018	462	11.5	18.6	4.3
4/8/2019	55.3	11.4	18.4	20
10/7/2019	88.8	11.1	17.8	19.1
4/8/2020	67.5	12.5	19.2	23.5
10/15/2020	179	13.9	20.9	20.9
4/14/2021	116	13.5	20.6	22.5
10/26/2021	493	13.8	20.7	21.6
4/13/2022	275	14	21.2	23.4
10/6/2022	414	15.5	21.2	22
4/25/2023		17.9		22.3
4/26/2023	53.4		16.5	
10/10/2023	420	18.3	22	19.9

Field pH



Time Series Analysis Run 1/15/2024 2:42 PM View: CCR - UPL - 2020

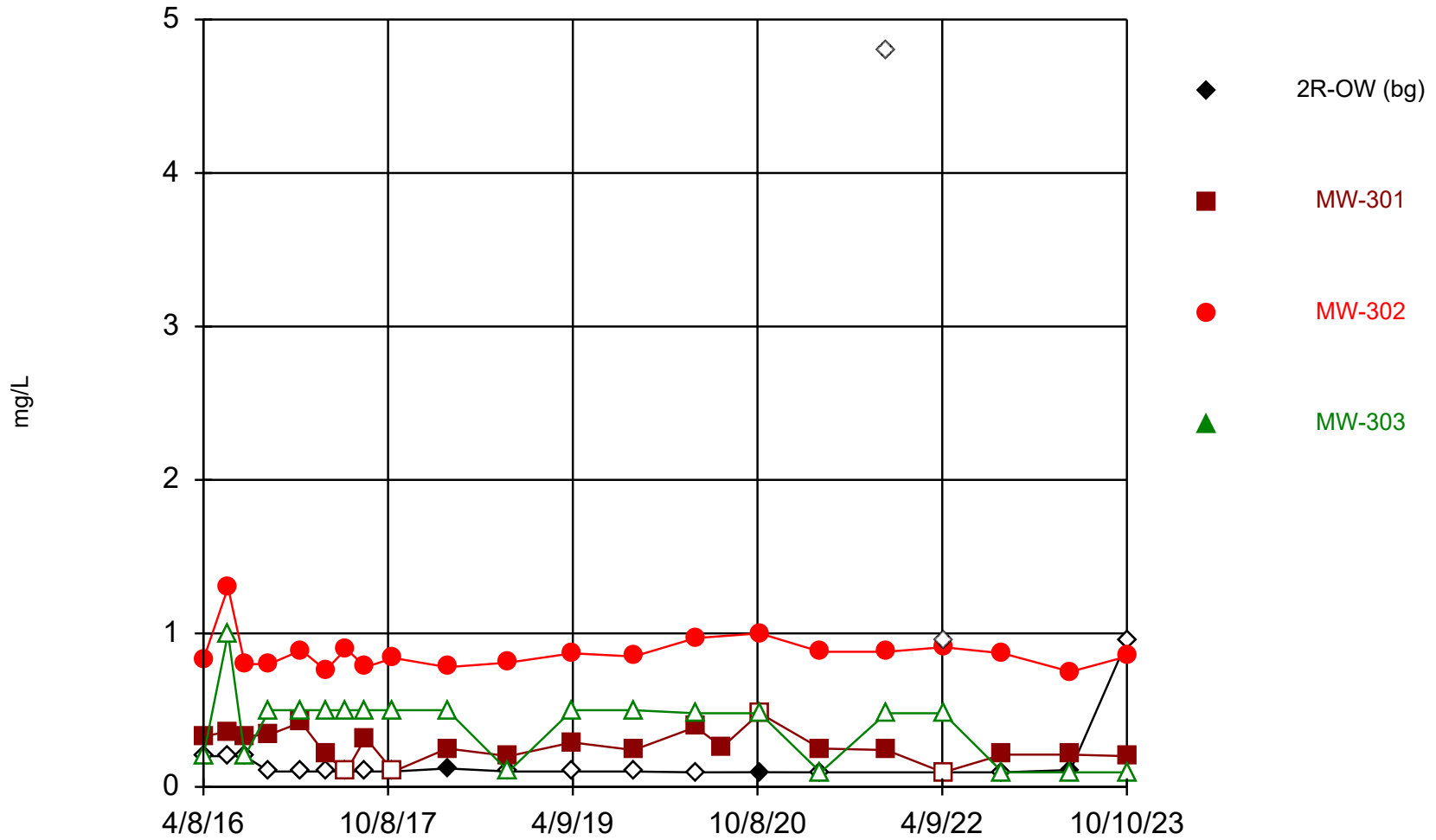
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

Time Series

Constituent: Field pH (Std. Units) Analysis Run 1/15/2024 2:43 PM View: CCR - UPL - 2020
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

	2R-OW (bg)	MW-301	MW-302	MW-303
4/8/2016	7.34		8.01	7.04
4/11/2016		7.91		
6/20/2016	7.02	7.48	7.73	6.79
8/9/2016	6.1 (X)	6.47	6.55	6.09
10/20/2016	6.98	7.68	7.89	6.94
1/23/2017		8.03		
1/24/2017	7.15		7.98	6.94
4/6/2017	7.01	7.98	7.99	6.88
6/6/2017	6.86	7.7	7.84	7
8/1/2017	7			
8/2/2017		7.58	7.76	6.94
10/23/2017	7.23			
10/24/2017		7.43	7.6	7.14
4/2/2018	7.29	8.02	7.78	6.86
10/1/2018	7.03	7.71	7.99	6.93
4/8/2019	8.57	8.18	7.98	7.15
10/7/2019	6.88	7.56	7.86	6.9
4/8/2020	7.08	7.82	7.56	6.7
6/26/2020		7.53		
10/15/2020	7.2	7.64	7.9	7.11
4/14/2021	7.52	7.96	8.19	7.27
10/26/2021	7.01	7.01	7.6	6.92
4/13/2022	7.2	7.38	7.7	6.78
10/6/2022	7.08	7.56	7.89	6.92
4/25/2023		7.63		6.87
4/26/2023	7.3		7.85	
10/10/2023	7.06	7.66	7.89	6.99

Fluoride



Time Series Analysis Run 1/15/2024 2:42 PM View: CCR - UPL - 2020

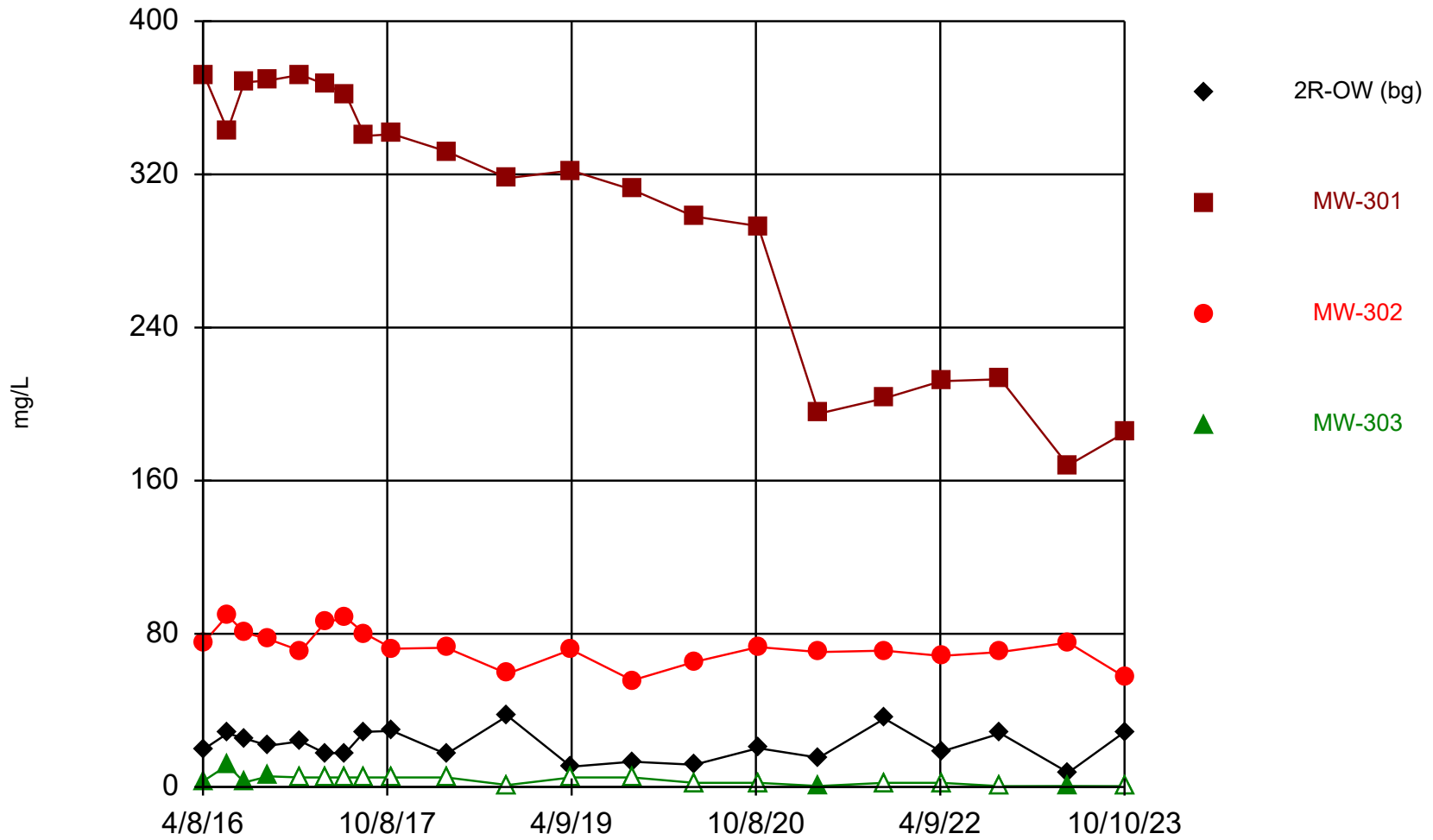
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

Time Series

Constituent: Fluoride (mg/L) Analysis Run 1/15/2024 2:43 PM View: CCR - UPL - 2020
 Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

	2R-OW (bg)	MW-301	MW-302	MW-303
4/8/2016	<0.2 (U)		0.83	<0.2 (U)
4/11/2016		0.33 (J)		
6/20/2016	<0.2 (U)	0.36 (J)	1.3 (J)	<1 (U)
8/9/2016	<0.2 (U)	0.33 (J)	0.8	<0.2 (U)
10/20/2016	<0.1 (U)	0.34	0.8	<0.5 (U)
1/23/2017		0.42		
1/24/2017	<0.1 (U)		0.89 (J)	<0.5 (U)
4/6/2017	<0.1 (U)	0.21 (J)	0.76	<0.5 (U)
6/6/2017	<0.1 (U)	<0.1 (U)	0.9	<0.5 (U)
8/1/2017	<0.1 (U)			
8/2/2017		0.32	0.78	<0.5 (U)
10/23/2017	<0.1 (U)			
10/24/2017		<0.1 (U)	0.84	<0.5 (U)
4/2/2018	0.12 (J)	0.25 (J)	0.78	<0.5 (U)
10/1/2018	<0.1 (U)	0.2 (J)	0.81	<0.1 (U)
4/8/2019	<0.1 (U)	0.29 (J)	0.87	<0.5 (U)
10/7/2019	<0.1 (U)	0.24 (J)	0.85	<0.5 (U)
4/8/2020	<0.095 (U)	0.39	0.97	<0.48 (U)
6/26/2020		0.26 (J)		
10/15/2020	0.096 (J)	<0.48 (U)	1 (J)	<0.48 (U)
4/14/2021	<0.095 (U)	0.25 (J)	0.88	<0.095
10/26/2021	<4.8 (UX)	0.24 (J)	0.88	<0.48
4/13/2022	<0.95 (UX)	<0.095 (U)	0.91	<0.48 (U)
10/6/2022	<0.095 (U)	0.21 (J)	0.87	<0.095 (U)
4/25/2023		0.21 (J)		<0.095 (U)
4/26/2023	0.11 (J)		0.75	
10/10/2023	<0.95 (U)	0.2 (J)	0.85	<0.095 (U)

Sulfate



Time Series Analysis Run 1/15/2024 2:42 PM View: CCR - UPL - 2020

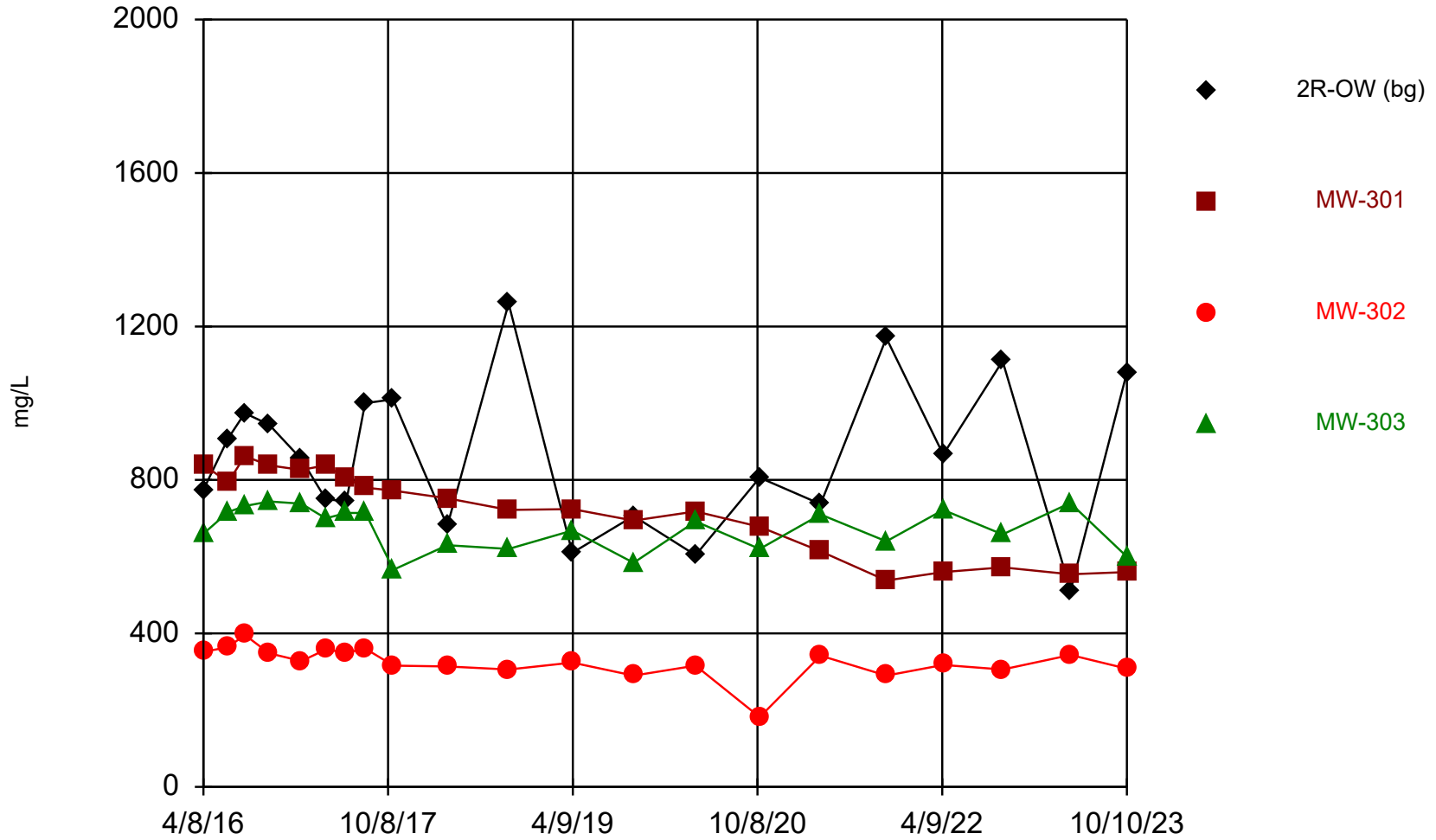
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

Time Series

Constituent: Sulfate (mg/L) Analysis Run 1/15/2024 2:43 PM View: CCR - UPL - 2020
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

	2R-OW (bg)	MW-301	MW-302	MW-303
4/8/2016	19.5		75.1	3 (J)
4/11/2016		372		
6/20/2016	28	343	89.6	11.4 (J)
8/9/2016	25.4	368	80.7	2.4 (J)
10/20/2016	21.6	369	77.2	5.6 (J)
1/23/2017		372		
1/24/2017	23.9		71.1	<5 (U)
4/6/2017	17.6	367	85.8	<5 (U)
6/6/2017	17.8	362	88.5	<5 (U)
8/1/2017	28.8			
8/2/2017		340	80.2	<5 (U)
10/23/2017	29.3			
10/24/2017		341	72.2	<5 (U)
4/2/2018	17.2	332	72.7	<5 (U)
10/1/2018	37.2	318	59.2	<1 (U)
4/8/2019	10.6	322	71.7	<5 (U)
10/7/2019	13.2	312	55.7	<5 (U)
4/8/2020	11.6	298	65.3	<2.2 (U)
10/15/2020	20.3	293	73.1	<2.2 (U)
4/14/2021	15.3	195	70.5	0.54 (J)
10/26/2021	35.7 (J)	203	71.2	<2.2 (U)
4/13/2022	18.5 (J)	212	68.5	<2.2 (U)
10/6/2022	28	213	70.5	<0.44 (U)
4/25/2023		168		0.5 (J)
4/26/2023	7.5		75.4	
10/10/2023	28.7	185	57.5	<0.44 (U)

Total Dissolved Solids



Time Series Analysis Run 1/15/2024 2:42 PM View: CCR - UPL - 2020

Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 1/15/2024 2:43 PM View: CCR - UPL - 2020
Edgewater Closed Generating Station Client: SCS Engineers Data: EDG_Clsd - Chem- export-Dec2020

	2R-OW (bg)	MW-301	MW-302	MW-303
4/8/2016	774		352	660
4/11/2016		838		
6/20/2016	908	794	364	716
8/9/2016	974	862	396	732
10/20/2016	944	838	348	744
1/23/2017		826		
1/24/2017	854		328	738
4/6/2017	750	838	358	700
6/6/2017	744	804	350	714
8/1/2017	1000			
8/2/2017		780	360	714
10/23/2017	1010			
10/24/2017		772	316	566
4/2/2018	680	752	314	630
10/1/2018	1260	722	306	620
4/8/2019	610	724	324	668
10/7/2019	706	694	290	584
4/8/2020	604	718	316	692
10/15/2020	806	678	182	620
4/14/2021	737	614	342	710
10/26/2021	1170	538	290	640
4/13/2022	866	560	318	722
10/6/2022	1110	572	306	658
4/25/2023		554		740
4/26/2023	512		344	
10/10/2023	1080	560	308	600