Alliant Energy
4902 North Biltmore Lane
P.O. Box 77007
Madison, WI 53707-1007

1-800-ALLIANT (800-255-4268)
alliantenergy.com

January 31, 2025

Submitted via electronic mail

Mr. Tony Peterson
Wisconsin Department of Natural Resources
141 NW Barstow St Ste 180
Waukesha, WI 53188-3789

Subject: **Annual CCR Landfill Report**
I-43 Ash Disposal Facility (License #2853)
Wisconsin Power and Light Company
Sheboygan, WI

Dear Mr. Peterson,

On behalf of Wisconsin Power and Light Company (WPL), Alliant Energy is submitting this Annual CCR Landfill Report in accordance with NR 506.20(3). The annual report consists of the following required documents:

- Annual CCR Fugitive Dust Control Report
- Annual Inspection Report [NR 506.20(2)(b)]
- Annual Groundwater Monitoring and Corrective Action Report [NR 507.15(3)(m)]
- Leachate Pipe Cleaning and Inspection Report [NR 506.07(5)(g)]

Please note that many of these items are also required by the federal Coal Combustion Residuals (CCR) Rule and have been prepared to satisfy federal requirements. Please call me if you have any questions or concerns regarding these documents and Wisconsin-specific requirements.

Thank you very much for your consideration of this initial submittal. If you have any questions or comments regarding this information, please call me at (608) 458-3853.

Regards,

Jeff Maxted
Manager – Environmental Services
Alliant Energy

CC: Mark Peters – Wisconsin DNR

Nils Madden – Manager of Operations – Edgewater Generating Station
Keith DeBlaey – Edgewater Generating Station
Phil Gearing, Tom Karwoski, Meg Blodgett – SCS Engineers

Annual CCR Fugitive Dust Control Report

Wisconsin Power and Light Company

Edgewater Generating Station (EDG) I-43 Ash Disposal Facility

Annual Coal Combustion Residuals (CCR) Fugitive Dust Control Report

November 15, 2024

This report applies to the following CCR unit at this facility:

CCR Landfill

EDG I-43 Ash Disposal Facility (Phase 3, Modules 1-2; Phase 4, Module 1)

Annual Coal Combustion Residuals (CCR) Fugitive Dust Control Report

November 15, 2024

Background

This report describes the actions taken to minimize fugitive CCR dust from CCR unit at this facility, provides a record of citizen complaints received since the previous report, and summarizes any corrective actions taken to minimize CCR fugitive dust. This report has been developed in accordance with 40 CFR 257.80(c).

Description of the Actions Taken to Control CCR Fugitive Dust

In accordance with the CCR Fugitive Dust Control Plan developed for this facility, the following measures were taken when needed to minimize CCR from becoming airborne:

- Establishing and enforcing a vehicle speed limit of 15 mph or less. Reduced speeds minimize fugitive dust generated from vehicle traffic.
- Covering all open-bodied vehicles that are transporting CCR to minimize the generation of fugitive dust during transport of CCR.
- Wetting CCR prior to placing the material in vehicles used for transport to the landfill. Moistened CCR is less likely to become airborne.
- Minimizing fall distances when handling or transferring CCR. The use of best practices when handling CCR can be used to minimize the generation of fugitive dust.
- Promptly collecting CCR that is observed in vehicle loading/unloading areas to minimize the potential for CCR to become airborne.
- Applying water directly to CCR using a water truck or irrigation system. Moistened CCR is less likely to become airborne.
- Suspending CCR management activities, including placement of CCR, during excessively windy conditions to minimize CCR from becoming airborne.
- Placement of soil and/or vegetated cover to minimize exposure of CCR in inactive landfill areas to conditions that could lead to fugitive dust.

Record of Citizen Complaints

Citizen complaints pertaining to fugitive dust are managed in accordance with Alliant Corporate Policy ENV-107. Specifically, the complaint must be reported to Environmental Services (1) via phone call and (2) in writing by submitting a completed Environmental Incident Report to Environmental Services within 10 business days. Citizen complaints are tracked within the Alliant Environmental Management Information System ("ENVIANCE").

There were no citizen complaints at this facility related to CCR fugitive dust during this reporting period.

Summary of Corrective Measures Taken

Corrective actions in response to citizen complaints were not required during this reporting period.

Periodic Review of CCR Fugitive Dust Control Plan

The CCR Fugitive Dust Control Plan is reviewed annually, and updated as necessary, in conjunction with preparation of the Annual CCR Fugitive Dust Control Report [40 CFR 257.80(c)]. During the periodic review, staff evaluate each measure for controlling fugitive dust to ensure that it is still appropriate for minimizing CCR from becoming airborne at the facility, verify that the procedures for conditioning CCR prior to landfilling and the procedure for logging complaints are sufficient, and evaluate other operations changes at the facility to determine whether additional dust control measures should be added.

- END -

Annual Inspection Report

Annual CCR Landfill Inspection

Edgewater I-43 Ash Disposal Facility

Prepared for:

Wisconsin Power and Light Company
Edgewater Generating Station
3739 Lakeshore Drive
Sheboygan, Wisconsin 53081

SCS ENGINEERS

25224069.00 | December 19, 2024

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

Table of Contents

Section Page

I:\25224069.00\Deliverables\2024 Federal CCR Inspection\241219_I43_Annual CCR LF Inspection.docx

[This page left blank intentionally]

PE CERTIFICATION

12/19/2024

I, Phillip E. Gearing, hereby certify that this Annual CCR Landfill Inspection Report meets the requirements of 40 CFR 257.84(b)(2), was prepared by me or under my direct supervision, and that I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

12/19/2024

(signature) (date)

Phillip E. Gearing

(printed or typed name)

License number E-45115

My license renewal date is July 31, 2026.

Pages or sheets covered by this seal:

All – Annual CCR Landfill Inspection – Edgewater I43 Ash Disposal Facility

[This page left blank intentionally]

1.0 INTRODUCTION

1.1 PURPOSE

SCS Engineers (SCS) completed an annual inspection of the Wisconsin Power and Light Company (WPL) Edgewater I-43 Ash Disposal Facility (I-43) in Sheboygan, Wisconsin. The annual inspection was completed on July 19, 2024, in accordance with the U.S. Environmental Protection Agency (U.S. EPA) Coal Combustion Residuals (CCR) rule, 40 CFR 257 Subpart D, in particular 257.84(b)(1). According to 40 CFR 257.84(b)(1), an annual inspection by a qualified professional engineer is required for all existing and new CCR landfills and any lateral expansion of a CCR landfill. The purpose of the annual inspection is to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

- A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person and results of previous annual inspections); and

- A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

This report has been prepared in accordance with 40 CFR 257.84(b)(2) to document the annual inspection.

1.2 BACKGROUND

The I-43 facility includes a closed CCR landfill, which consists of disposal Phase 1 and Phase 2, and an active CCR landfill, which currently consists of an existing CCR unit in disposal Phase 3 and Phase 4. The two landfills are located on the same property, but are not contiguous. Phase 1 and Phase 2, which comprise an inactive CCR landfill that closed prior to October 15, 2015, are not the subject of this report.

The subject of this report is the active CCR landfill at I-43, which includes the following modules:

- Phase 3, Module 1
- Phase 3, Module 2
- Phase 4, Module 1

These phases were previously described as separate existing CCR landfills, although they are managed as a single landfill by the facility and by the Wisconsin Department of Natural Resources. WPL previously clarified that Phase 3, Module 1; Phase 3, Module 2; and Phase 4, Module 1 are one existing CCR landfill under the federal CCR Rule, and this report reflects WPL's clarification.

The modules are used to describe the location of items observed during the inspection. The inspection requirements in 40 CFR 257.84(b)(1) apply to the existing (active) CCR unit.

At the time of the inspection, the active CCR landfill modules were in various stages of development and use as described in the table below.

Unit	CCR Rule Status	Basis for Status
Existing Active Landfill (Includes Phase 3, Module 1; Phase 3, Module 2; Phase 4, Module 1)	Existing CCR Landfill. Currently accepting CCR.	Filling is occurring in Phase 3, Module 2 and overlay from Phase 3, Module 2 is currently occurring on Phase 3, Module 1. Final or interim waste grades have been reached in some areas, and final or intermediate cover is present on portions of the CCR unit. Final closure per 257.102 will not be completed until final grades are reached throughout the CCR unit.

2.0 SUMMARY OF RESULTS AND RECOMMENDATIONS

SCS identified no deficiencies or releases during the annual inspection of the CCR unit at I-43. Deficiencies and releases must be remedied by the owner or operator as soon as feasible and the remedy documented.

Although no deficiencies or releases were identified during the inspection on July 19, 2024, there was a release of CCR outside the active disposal area during a large rain event on August 16, 2024. The release occurred during intermediate cover placement and did not extend beyond the property. Activities were completed to rectify the release and place all CCR within the active fill area. The work completed to address the release of CCR is also discussed in Section 4.5

SCS identified conditions during the annual inspection that are not considered deficiencies but have the potential to become a deficiency if left unaddressed. Each condition and the recommendations provided by SCS to address them are summarized in the table below. Based on correspondence with WPL in follow-up to the visual inspection, the recommended maintenance was performed and will continue to be performed during routine landfill maintenance.

These conditions, recommendations, and maintenance performed are described in further detail in Section 4.0.

Condition	CCR Unit / Location	Recommendation(s)	Report Section
Vegetation growth in berm drainage material	Separation berm between Phase 3, Module 2 and contact water swale	Remove vegetation, especially woody and deep-rooted vegetation, before it becomes established. Monitor during 7-day inspections. Continue to inspect and remove vegetation growth in drainage layer material and other areas during general maintenance.	4.3.2

Condition	CCR Unit / Location	Recommendation(s)	Report Section
Vegetation grown in drainage layer material	Phase 3, Module 2 drainage layer material (Southwest corner)	Remove vegetation, especially woody and deep-rooted vegetation, before it becomes established. Monitor during 7-day inspections. Continue to inspect and remove vegetation growth in drainage layer material and other areas during general maintenance.	4.3.2

3.0 ANNUAL INSPECTION

Mr. Phillip Gearing of SCS completed an annual inspection of the active CCR landfill at I-43 on July 19, 2024. Mr. Gearing is a licensed professional engineer in Wisconsin and holds a Bachelor of Science degree in Geological Engineering. He has over 18 years of experience in the design, construction, and operation of solid waste disposal facilities. The scope of the annual inspection is described in Sections 3.1 and 3.2. The results of the annual inspection are discussed in Section 4.0.

3.1 OPERATING RECORD REVIEW

SCS reviewed the available information in the operating record for I-43. Information reviewed by SCS included operating record materials provided by WPL and the information posted on Alliant Energy's CCR Rule Compliance Data and Information website for the I-43 facility.

3.2 VISUAL INSPECTION

SCS completed a visual inspection of the I-43 landfill to identify signs of distress or malfunction of the CCR unit.

The visual inspection included observations of the following:

- CCR placement areas including active filling areas, intermediate cover areas, final cover areas, and exterior non-CCR berms or slopes.
- Leachate collection and removal system components including visible leachate drainage layer materials.
- Leachate and contact water run-off management features including swales, the storage basin, and the storage basin pumping system.
- Non-contact storm water run-on and run-off control features, including swales located adjacent to active fill areas but outside the landfill limits and the on-site storm water management basin.

4.0 INSPECTION RESULTS

The results of the annual inspection, along with a description of any deficiencies or releases identified during the visual inspection, are summarized in the following sections.

4.1 CHANGES IN GEOMETRY

No apparent changes in geometry were noted that would indicate distress or malfunction of the CCR unit since the previous annual inspection at the I-43 facility completed under 40 CFR 257.84(b)(1). All changes in geometry observed during the annual inspection were the result of planned CCR filling.

At the time of the visual inspection, CCR placement was ongoing in Phase 3, Module 2 and overlay from Phase 3, Module 2 is currently occurring on Phase 3, Module 1. Final or interim waste grades have been reached in some areas through the unit. Final cover exists in areas where final waste grades have been reached and intermediate cover exists in remaining interim grade areas that are awaiting future CCR placement.

4.2 CCR VOLUMES

The approximate volume of CCR contained in the CCR unit at the time of the inspection is summarized below. A description of how the estimate was developed and the sources used are also summarized below.

Unit	Estimated Volume of CCR in Place	Basis for Estimate and Source
Existing Active Landfill (Includes Phase 3, Module 1; Phase 3, Module 2; Phase 4, Module 1)	491,400 cubic yards	Estimated volume is: • Based on a September 19, 2024, existing conditions survey compared to approved base grades in Phase 3, Module 1 and documented drainage layer grades in Phase 3, Module 2. • Excludes final cover or intermediate cover material installed at time of survey. • Interpolated to the July 19, 2024, inspection date based on placed CCR tonnages.

4.3 APPEARANCE OF STRUCTURAL WEAKNESS

The inspection included a review of the appearance of actual or potential structural weakness of the CCR unit. The visual inspection included a review of CCR fill areas including the top slopes, internal side slopes, external side slopes, and internal ramps/haul roads for the presence of the following conditions:

- Signs of surface movement or instability:
  - Sloughing, slumping, or sliding
  - Surface cracking

  - Slopes greater than three horizontal to one vertical (3H:1V)
  - Toe of slope bench movement
  - Evidence of inadequate compaction of exposed CCR

- Inappropriate vegetation growth
- Animal burrows
- Erosion damage
- Unusual surface damage caused by vehicle traffic

4.3.1 Signs of Surface Movement or Instability

No signs of surface movement or instability were noted during the inspection of the landfill.

4.3.2 Inappropriate Vegetation Growth

No inappropriate vegetation growth impacting the CCR unit was noted during the inspection, except as observed below:

- Vegetation growth was observed in the separation berm drainage layer material between Phase 3, Module 2 and the contact water swale. SCS recommends the removal of vegetation, especially woody and deep-rooted vegetation before it becomes established, and these areas be monitored during the 7-day inspections. Vegetation growth in the drainage layer and other areas should continue to be inspected and removed during general maintenance.

- Vegetation growth was observed in the drainage layer material in Phase 3, Module 2 Southwest corner. SCS recommends the removal of vegetation, especially woody and deep-rooted vegetation before it becomes established, and these areas be monitored during the 7-day inspections. Vegetation growth in the drainage layer and other areas should continue to be inspected and removed during general maintenance.

- Dense vegetation growth in the exterior drainage swales and around features (toe drains, cleanouts, discharge structures, etc.) makes access for inspection more difficult. Regular vegetation maintenance is likely to aid in the identification of issues before they become significant. Additional vegetation maintenance could be beneficial for future weekly and annual inspections. This condition is not considered an operating deficiency, but SCS recommends woody vegetation and dense vegetation be spot removed, using hand trimmers around structures and performing additional mowing in swale areas of dense growth. These areas should be monitored during the 7-day inspections.

Based on observations in follow-up to the visual inspection, recommended vegetation maintenance was actively being performed.

4.3.3 Animal Burrows

No animal burrows were noted during the inspection of the CCR unit.

4.3.4 Erosion Damage

No erosion damage was noted during the inspection of the CCR unit.

4.3.5 Unusual Surface Damage Caused by Vehicle Traffic

No unusual surface damage caused by vehicle traffic was noted during the inspection of the CCR unit.

4.4 DISRUPTIVE CONDITIONS

4.4.1 Existing Disruptive Conditions

4.4.1.1 Current Inspection

No existing conditions that were disrupting the operation and safety of the CCR unit were noted during the annual inspection.

4.4.1.2 Previous Inspection

No existing conditions that were disrupting the operation and safety of the CCR unit were noted during the previous inspection.

4.4.2 Potentially Disruptive Conditions

4.4.2.1 Current Inspection

No potentially disruptive conditions to operation and safety of the CCR unit were noted during the annual inspection.

4.4.2.2 Previous Inspections

No potentially disruptive conditions to operation and safety of the CCR unit were noted during the previous annual inspection.

4.5 OTHER CHANGES SINCE PREVIOUS ANNUAL INSPECTION

No changes were noted within the cover area during the inspection of Phase 3, Module 1; Phase 3, Module 2; and Phase 4, Module 1 when comparing to the previous annual inspection.

However, as stated in Section 2.0, there was a CCR release on August 16, 2024, after the inspection was performed on July 19, 2024. The release from the active portion of the landfill was due to erosion during a large precipitation event. The CCR materials were deposited in an area adjacent to the active landfill and did not leave the property. The CCR was excavated and returned to the active landfill area between August 19, 2024, and August 23, 2024. The estimated amount of CCR released was less than 15 cubic yards based on the total excavated volume of CCR and excavated soil. Intermediate cover, erosion mat, and seed were placed over the CCR erosion area to prevent future erosion.

5.0 FUTURE INSPECTIONS

5.1 EXISTING CCR LANDFILL

As stated in 40 CFR 257.84(b)(4), the owner or operator of the CCR unit must conduct the inspection required by paragraphs (b)(1) and (2) of this section on an annual basis. The date of completing the inspection report is the basis for establishing the deadline to complete the next subsequent inspection. Any required inspection may be conducted prior to the required deadline, provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. The owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record.

The next annual inspection of the existing landfill unit must be completed within 1 year of the placement of this inspection report in the operating record for the facility.

5.2 NEW CCR LANDFILLS AND LATERAL EXPANSIONS

The initial annual inspection for modules constructed in the future must be completed within 14 months of the initial receipt of CCR in the module per 40 CFR 257.84(b)(3)(ii).

[This page left blank intentionally]

Annual Groundwater Monitoring and Corrective Action Report

2024 Annual Groundwater Monitoring and Corrective Action Report

Edgewater Generating Station
I-43 Ash Disposal Facility
Town of Wilson
Sheboygan County, Wisconsin

Prepared for:

Alliant Energy

SCS ENGINEERS

25224069.00 | January 31, 2025

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

OVERVIEW OF CURRENT STATUS

Edgewater Generating Station, I-43 Ash Disposal Facility
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) unit. 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;	Detection
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/November 2023</u> Fluoride: MW-302 <u>April 2024</u> None
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	Alternative Source Demonstration prepared for the October 2023 event during 2024. Assessment monitoring not required.

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 groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g) include all of the following:	Not applicable – Appendix IV sampling not required
	(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 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	
	(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.	
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 – Site is in detection monitoring
Corrective Action	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Not applicable – Site is in detection monitoring

Table of Contents

Section Page

Tables

Figures

Appendices

I:\25224069.00\Deliverables\2024 - Annual CCR Report\250131_2024 Annual CCR Report_I43_Final.docx

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 Unit.

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

The groundwater monitoring system at the Edgewater (EDG) I-43 Ash Disposal Facility (ADF) monitors a single existing CCR unit:

- EDG I-43 Phase 3, Module 1 and 2; and Phase 4, Module 1 (existing CCR Landfill)

The monitoring system is designed to detect monitored constituents at the waste boundary of the I-43 ADF as required by 40 CFR 257.91(d). The groundwater monitoring system consists of two background wells and three downgradient monitoring wells (**Table 1** and **Figure 2**). A new well, MW-306, was installed in 2024 to provide additional groundwater elevation data to the north of the ADF, in support of compliance with the final CCR Rule (40 CFR 257.50-107) and the groundwater monitoring requirements of NR 507.15(3). This well is not part of the CCR monitoring system but will be added to the system in 2025.

2.0 BACKGROUND

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

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

2.1.1 Regional Information

For the purposes of groundwater monitoring, the Niagara Dolomite Aquifer is considered to be the uppermost aquifer unit, as defined under 40 CFR 257.53, at the I-43 ADF. 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 area of the I-43 ADF. The sedimentary sequence is underlain by Precambrian crystalline rocks that are not considered an aquifer in eastern Wisconsin. A summary of the regional hydrogeologic stratigraphy is presented in **Appendix A.**

An unconsolidated sand and gravel aquifer is present in some parts of Sheboygan County (Skinner and Borman, 1973), but does not appear laterally extensive.

Regional groundwater flow in the dolomite aquifer, in the vicinity of the site, is to the east or northeast. A map showing the regional water table elevations is included with the regional hydrogeologic information in **Appendix A**.

2.1.2 Site Information

Soils at the site are primarily clay with discontinuous layers of sand and silty sand to a depth of at least 100 feet. During drilling of the CCR wells, the unconsolidated materials were identified as consisting primarily of clay. Zones of sand and gravel are known to be present within the clay, but these appear to be discontinuous, and no nearby private wells screened within the unconsolidated material have been identified. Soils encountered in borings MW-301, MW-302, MW-303, and MW-304 were primarily lean clay, silty clay, and silty sand. The upper 70 feet of soils in boring MW-305 were similar, but in approximately the lower 40 feet above bedrock, sand was the primary soil type. The depth to bedrock in the five wells ranged from approximately 109 feet to 133 feet below ground surface (bgs), and the elevation of the top of bedrock ranged from approximately 568 feet above mean sea level (amsl) to 605 feet amsl. The additional water level-only well MW-306 was installed in soils similar to those observed in MW-301, MW-302, MW-303, and MW-304. The depth to bedrock in MW-306 was approximately 126 feet bgs. The boring logs, well construction, and well development forms for the I-43 ADF CCR monitoring wells are provided in **Appendix B**. All CCR monitoring wells are screened within the dolomite bedrock unit.

Shallow groundwater in the clay unit at the site generally flows east to west towards Weedens Creek, a tributary of the Sheboygan River, based on water levels measured under the state monitoring program. The flow direction to the west at the water table is consistent with previous water table maps prepared since the site was developed in the mid-1980s.

In the dolomite aquifer, groundwater flow is generally to the north and northeast as shown on the April and October 2024 bedrock potentiometric surface maps, based on groundwater elevations from monitoring wells MW-301 through MW-305 (**Figure 3**) and MW-301 through MW-306 (**Figure 4**). The groundwater elevation data for the CCR monitoring wells are provided in **Table 3.** Calculated horizontal gradients and flow velocities for representative flow paths are provided in **Table 4.**

An evaluation was conducted in 2023 to assess the monitoring system coverage based on the apparent flow direction indicated by the potentiometric surface maps. The original downgradient compliance monitoring well locations were selected based on a regional flow direction to the east or northeast; however, the potentiometric surface maps indicate a potential flow path to the north. The mapped flow to the north is largely driven by the water level measured at MW-305.

To obtain additional information on groundwater flow direction and groundwater quality, an additional water level-only monitoring well was installed in June 2024. New well MW-306 was installed in the bedrock aquifer north of the CCR unit, on the north side of Phase 3 of the landfill. Based on the October 2024 potentiometric surface map (**Figure 4**), the addition of MW-306 appears to confirm a flow path to the north.

2.2 CCR RULE MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of two upgradient (background) monitoring wells and three downgradient monitoring wells (**Table 1** and **Figure 2**). The background wells include MW-304 and MW-305. The downgradient compliance wells include MW-301, MW-302, and MW-303. Downgradient well MW-306 was installed in 2024 and used for water level measurements only. MW-306 will be added to the network as a compliance well in 2025 based on 2024 water level monitoring. The CCR Rule wells are installed in the upper portion

of the dolomite aquifer. Well depths range from approximately 119 to 145 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 on **Figure 1**. A map with an aerial image showing the I-43 ADF CCR unit, 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;

An additional monitoring well MW-306 was installed north of Phase 3 of the landfill in 2024. This well was used for water level measurement collection and was not sampled as part of the CCR program in 2024. MW-306 will be added to the network as a compliance well in 2025 based on 2024 water level monitoring.

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 2024 at the I-43 ADF. The samples were collected under the detection monitoring program, which was established on October 17, 2017. 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 is included in **Table 2**.

Groundwater samples collected during the semiannual events, in April and October 2024, were analyzed for the Appendix III constituents.

The validation and evaluation of the October 2023 monitoring event and November 2023 resampling event data was originally completed and transmitted to WPL on March 6, 2024, but the due date of the alternative source demonstration (ASD) associated with this monitoring event was revised and the updated results letter was transmitted to WPL on April 25, 2024. The validation and evaluation of the April 2024 monitoring event data was completed and transmitted to WPL on August 2, 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 will be included in the 2025 annual report.

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

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

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

There were no transitions between monitoring programs in 2024. The I-43 ADF remained in the detection monitoring program.

In 2024, the monitoring results for the October and November 2023 and April 2024 monitoring events were evaluated for SSIs in detection monitoring parameters relative to background. For all parameters except boron, 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 wells (MW-304 and MW-305). To allow for natural spatial variability in the background concentrations, the statistical evaluation for boron was transitioned to an intrawell approach beginning with the October 2018 monitoring event. The comparison to background used intrawell UPLs based on background monitoring results from the compliance wells (MW-301, MW-302, and MW-303). The decision to evaluate boron through an intrawell approach is further discussed in the statistical memorandum included in **Appendix F**.

The interwell and intrawell UPLs were most recently updated in May 2024, using background data collected through November 2023 for interwell and intrawell UPLs. The May 2024 Statistical Analysis was included in an appendix in the April 2024 Results Letter and is included in this report as **Appendix F**. The Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities (U.S. Environmental Protection Agency, 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.

A possible SSI for fluoride was identified for the October 2023 sample from MW-302 and confirmed with the November 2023 retest results. An ASD was completed in June 2024, demonstrating that a source other than the CCR unit was the likely cause of the SSI. The ASD report for the October 2023 sampling event is provided in **Appendix E**.

No SSIs were identified for the April 2024 sampling 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 I-43 ADF CCR unit.

3.5.1 §257.90(e) General Requirements

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

Status of Groundwater Monitoring and Corrective Action Program. The groundwater monitoring and corrective action program is currently in detection monitoring.

Summary of Key Actions Completed.

- Statistical evaluation and determination of SSIs for the October/November 2023 and April 2024 monitoring events.
- ASD report for the SSI identified from the October 2023 event and November 2023 resampling event.
- Two semiannual groundwater sampling and analysis events (April and October 2024).
- Installation and monitoring of new water level-only monitoring well MW-306 on the north side of the CCR unit, north of Phase 3 of the landfill.
- Statistical evaluation to update UPLs using data collected through November 2023.

Description of Any Problems Encountered. With the addition of monitoring well MW-306, the October potentiometric surface map appears to confirm a flow path to the north that is not monitored by the current monitoring system.

Discussion of Actions to Resolve the Problems. Installation of MW-306 and addition of this well to the water level monitoring program were the initial actions taken to evaluate the potential northern flow path. The next steps will include additional water level monitoring in early 2025 and addition of MW-306 to the monitoring system.

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

- Statistical evaluation and determination of any SSIs for the October 2024 and April 2025 monitoring events.
- If an SSI is determined, then within 90 days either:
  - Complete alternative source demonstration (if applicable), or
  - Establish an assessment monitoring program.
- Two semiannual groundwater sampling and analysis events (April and October 2025).
- Addition of MW-306 to the monitoring system as a downgradient well for sampling.

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. No alternative detection monitoring frequency has been proposed.

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 Alternative Source Demonstration (ASD) report prepared to address the SSIs observed for the October/November 2023 sampling event is provided in Appendix E. The ASD report is certified by a qualified professional engineer.

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 not been initiated.

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 has not been initiated.

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 has not been initiated.

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 REFERENCE

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.

[This page left blank intentionally]

Tables

Table 1. Groundwater Monitoring Well Network
Edgewater I-43 Ash Disposal Facility / SCS Engineers Project #25224069.00

Monitoring Well	Location in Monitoring Network	Role in Monitoring Network
MW-301	Downgradient	Compliance
MW-302	Downgradient	Compliance
MW-303	Downgradient	Compliance
MW-304	Upgradient	Background
MW-305	Upgradient	Background
MW-306	Downgradient	Water Level Only

Last revision by: NLB Date: 11/20/2024
Checked by: RM Date: 12/11/2024

Table 2. CCR Rule Groundwater Samples Summary
Edgewater I-43 Ash Disposal Facility / SCS Engineers Project #25224069.00

Sample Dates	Compliance Wells			Background Wells	
	MW-301	MW-302	MW-303	MW-304	MW-305
April 15, 2024	D	D	D	D	D
October 2, 2024	D	D	D	D	D
Total Samples	2	2	2	2	2

Abbreviations:
D = Required by Detection Monitoring Program

Last revision by: NLB Date: 11/20/2024
Checked by: RM Date: 12/10/2024

Table 3. Water Level Summary
WPL - I43 / SCS Engineers Project #25224069.00

Well Number	Ground Water Elevation in feet above mean sea level (amsl)					
	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306
Top of Casing Elevation (feet amsl) - resurveyed 12/12/2023	697.19	702.81	719.47	692.12	717.97	693.61
Top of Casing Elevation (feet amsl)	696.96	702.57	719.25	691.97	717.67	--
Screen Length (ft)	5.0	5.0	5.0	5.0	5.0	5.0
Total Depth (ft from top of casing)	134.56	144.33	144.65	119.49	122.97	138.31
Top of Well Screen Elevation (ft)	567.40	563.24	579.60	577.48	600.46	560.30
Measurement Date						
April 8, 2016	692.29	683.61	696.30	--	--	NI
April 26, 2016	653.54	653.56	653.59	655.90		NI
June 20, 2016	652.01	651.89	651.80	653.79	--	NI
August 9, 2016	649.68	649.30	649.37	651.55	--	NI
October 19, 2016	652.32	652.38	652.18	654.00	--	NI
December 19, 2016	652.85	652.79	652.82	654.26	--	NI
January 5, 2017	652.86	652.82	652.80	654.15		NI
January 23, 2017	652.98	664.97	652.92	654.37	--	NI
February 23, 2017	653.14	653.10	653.10	654.49	658.02	NI
April 7, 2017	654.43	654.72	654.55	654.85	659.65	NI
June 6, 2017	654.11	654.12	654.14	655.70	659.70	NI
August 1, 2017	652.64	652.55	652.50	654.49	658.54	NI
October 23, 2017	652.03	652.05	652.03	653.65	657.22	NI
April 3, 2018	651.28	651.25	651.30	652.86	656.24	NI
October 4, 2018	650.71	650.70	650.70	652.26	655.89	NI
April 8-9, 2019	653.06	654.06	654.06	655.59	659.03	NI
October 8, 2019	653.26	653.21	653.27	654.77	658.77	NI
November 26, 2019	--	--	655.56	--	--	NI
April 7, 2020	656.59	656.47	656.46	658.16	661.58	NI
May 20, 2020	--	655.81	--	--	--	NI
October 13, 2020	652.16	652.17	652.20	654.17	658.08	NI
December 18, 2020	653.91	653.88	--	--	--	NI
April 13, 2021	654.56	654.57	654.53	656.36	659.69	NI
June 16, 2021	649.78	649.75	--	--	--	NI
October 26, 2021	650.76	650.88	650.90	652.54	655.86	NI
April 11-13, 2022	651.65	651.62	651.58	653.08	657.58	NI
June 16, 2022	--	650.55	--	--	--	NI
October 4, 2022	648.87	648.85	648.89	650.51	654.40	NI
February 14, 2023	651.61	651.60	651.61	653.17	656.25	NI
March 22, 2023	652.44	652.43	652.42	654.04	657.48	NI
April 24-25, 2023	653.26	653.25	653.31	654.83	658.22	NI
May 25, 2023	651.28	651.24	651.30	653.17	657.54	NI
June 26, 2023	648.06	648.05	648.07	649.86	655.07	NI
July 26, 2023	647.08	647.02	647.17	649.15	652.09	NI
October 11, 2023	648.65	648.67	648.65	650.24	654.22	NI
November 14, 2023	649.98	649.97	649.95	651.37	654.89	NI
November 14, 2023 elevations based on re-surveyed TOC	650.21	650.21	650.17	651.52	655.19	NI
April 15, 2024	652.95	652.93	652.96	654.82	658.53	NI
July 19, 2024	653.41	653.41	653.39	655.04	659.29	667.74
August 8, 2024	650.96	650.98	650.96	653.07	657.85	651.58
October 2, 2024	650.21	650.48	650.15	652.01	656.60	650.47
Bottom of Well Elevation (ft)	562.40	558.24	574.60	572.48	594.70	555.30

Notes:
-- = not measured

Created by: RM Date: 1/10/2020
Last rev. by: RM Date: 10/2/2024
Checked by: NLB Date: 10/9/2024

I:\25224069.00\Deliverables\2024 - Annual CCR Report\Tables\[Table 3 - I43 CCR GW Elevation Summary.xls]levels

Table 4. Horizontal Gradients and Flow Velocity
Edgewater I-43 Ash Disposal Facility / SCS Engineers Project #25224069.00
January - December 2024

	Flow Path A - North				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
4/15/2024	654.00	653.00	582	0.0017	0.01
10/2/2024	652.00	650.48	1190	0.0013	0.01

Wells	**K Value (ft/d)**	**K Value (ft/d)**
MW-301	1.7E-03	4.9
MW-302	4.8E-03	14
MW-303	6.8E-03	19
MW-306	6.1E-06	0.017
Geometric Mean	3.8E-03	2

Assumed Porosity, n
0.25

Groundwater flow velocity equation: V = [K*(Δh/Δl)] / n

ft = feet
ft/d = feet per day
K = hydraulic conductivity
n = effective porosity
V = groundwater flow velocity

h1, h2 = point interpreted groundwater elevations 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: 11/15/2024
Checked by: LH Date: 11/15/2024

Table 5A. Groundwater Analytical Results Summary - October and November 2023
Edgewater I-43 Ash Disposal Facility, Sheboygan, WI / SCS Engineers Project #25224069.00

Parameter Name	Interwell UPL	Background Wells		Compliance Wells						
		MW-304	MW-305	MW-301		MW-302			MW-303	
		10/9/2023	10/9/2023	Intrawell UPL	10/9/2023	Intrawell UPL	10/9/2023	11/14/2023	Intrawell UPL	10/9/2023
Groundwater Elevation, ft amsl		650.24	654.22		648.65		648.67	649.97		648.65
Appendix III										
Boron, µg/L		92.1	64.5	184	128	149	129	--	100	84.4
Calcium, µg/L	103,000	20,700	85,800		26,600		27,900	--		27,400
Chloride, mg/L	24.9	2.5	29.6		3.5		3.9	--		5.3 J,D3
Fluoride, mg/L	0.753	0.55	<0.95 D3		0.67		0.77	0.77		0.76 J,D3
Field pH, Std. Units	8.34	8.08	7.56		8.07		8.03	8.00		7.96
Sulfate, mg/L	140	16.4	137		12.1		16.5	--		26.7
Total Dissolved Solids, mg/L	598	220	604		200		222	--		266

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
SSI = Statistically Significant Increase
-- = Not Analyzed
µg/L = micrograms per liter
mg/L = milligrams per liter
LOQ = Limit of Quantitation
LOD = Limit of Detection

Notes:
J = Estimated concentration at or above the LOD and below the LOQ.
D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

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

2. Interwell UPLs calculated based on results from background wells MW-304 and MW-305. Interwell UPLs based on 1-of-2 retesting approach. Interwell UPLs were calculated with background results from the May 2016 through the October 2020 sampling event.

3. Following the completion of the April 2018 Alternative Source Demonstration (ASD) Report, dated October 31, 2018, the statistical method for evaluating boron data at the three compliance monitoring wells was modified to an intrawell approach. Intrawell UPLs were calculated using results from the May 2016 through the April 2020 sampling events.

Created by: NDK Date: 10/27/2022
Last revision by: RM Date: 12/11/2023
Checked by: NLB Date: 12/13/2023
Sci/Proj Mgr QA/QC: TK Date: 1/7/2024

Table 5B. Groundwater Analytical Results Summary - April 2024
Edgewater I-43 Ash Disposal Facility, Sheboygan, WI / SCS Engineers Project #25224069.00

Parameter Name	Interwell UPL	Background Wells		Compliance Wells					
		MW-304	MW-305	MW-301		MW-302		MW-303	
		4/15/2024	4/15/2024	Intrawell UPL	4/15/2024	Intrawell UPL	4/15/2024	Intrawell UPL	4/15/2024
Groundwater Elevation, ft amsl		654.82	658.53		652.95		652.93		652.96
Appendix III									
Boron, µg/L		90.3	63.4	182	131	148	123	99.9	88.4
Calcium, µg/L	103,000	21,000	87,400		24,400		26,500		28,400
Chloride, mg/L	24.9	2.7	30.7		3.3 M0		4.2		3.9
Fluoride, mg/L	0.76	0.49	0.66		0.64 M0		0.74		0.63
Field pH, Std. Units	8.32	7.62	7.34		7.62		7.71		7.67
Sulfate, mg/L	140	16.8	134		11.0 M0		24.8		24.4
Total Dissolved Solids, mg/L	604	234	578		206		246		262

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
SSI = Statistically Significant Increase
-- = Not Analyzed
µg/L = micrograms per liter
mg/L = milligrams per liter
LOQ = Limit of Quantitation
LOD = Limit of Detection

Notes:
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 letter text for identification of statistically significant results.

2. Interwell UPLs calculated based on results from background wells MW-304 and MW-305. Interwell UPLs based on 1-of-2 retesting approach. Interwell UPLs were calculated with background results from the May 2016 through the October 2020 sampling event. Interwell UPLs for calcium, fluoride, field pH, and TDS were updated in 2024 to include background results through November 2023.

3. Following the completion of the April 2018 Alternative Source Demonstration (ASD) Report, dated October 31, 2018, the statistical method for evaluating boron data at the three compliance monitoring wells was modified to an intrawell approach. Intrawell UPLs were calculated using results from the May 2016 through the April 2020 sampling events. Intrawell UPLs were updated in 2024 to include background results through November 2023.

Created by:	RM	Date:	10/27/2022
Last revision by:	RM	Date:	5/24/2024
Checked by:	NLB	Date:	5/28/2024
Sci/Proj Mgr QA/QC:	TK	Date:	7/10/2024

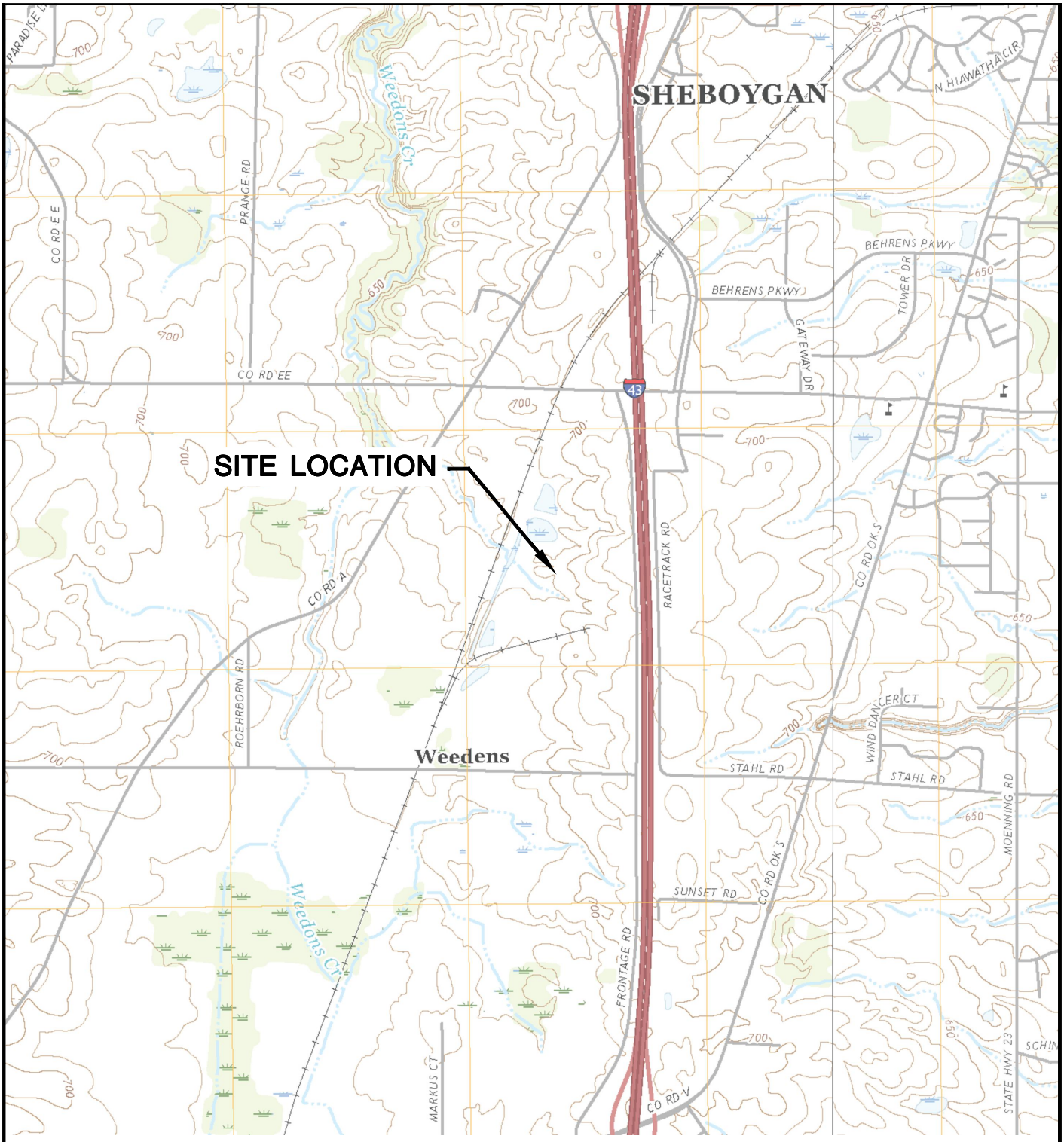
Table 6. Groundwater Field Data Summary - October 2023, November 2023, and April 2024
Edgewater I-43 Ash Disposal Facility / SCS Engineers Project #25224069.00

Well	Sample Date	Groundwater Elevation (feet)	Field Temperature (deg C)	Field pH (Std. Units)	Oxygen, Dissolved (mg/L)	Field Specific Conductance (umhos/cm)	Field Oxidation Potential (mV)	Turbidity (NTU)
MW-301	10/9/2023	648.65	10.3	8.07	0.87	359	433.2	45.4
	4/15/2024	652.95	12.5	7.62	1.84	353	472.8	14.5
MW-302	10/9/2023	648.67	10.9	8.03	0.79	381	311.9	4.36
	11/14/2023	649.97	9.6	8.00	0.70	391.3	-79.9	--
	4/15/2024	652.93	11.4	7.71	0.79	414	455.7	2.70
MW-303	10/9/2023	648.65	10.2	7.96	2.77	446	472.7	1.22
	4/15/2024	652.96	13.0	7.67	3.35	439	556.9	2.04
MW-304	10/9/2023	650.24	9.5	8.08	4.63	293	307.6	55.7
	4/15/2024	654.82	12.7	7.62	1.29	398	385.5	9.05
MW-305	10/9/2023	654.22	9.6	7.56	0.46	877	236.7	5.65
	4/15/2024	658.53	11.3	7.34	1.64	884	395.1	4.30

-- = Not measured

Last revision by: RM Date: 12/11/2024
Checked by: NLB Date: 12/30/2024

Figures



N

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

CLIENT	WISCONSIN POWER AND LIGHT CO. 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081	SITE	ALLIANT ENERGY I–43 ASH DISPOSAL FACILITY TOWN OF WILSON, WI

SITE LOCATION MAP

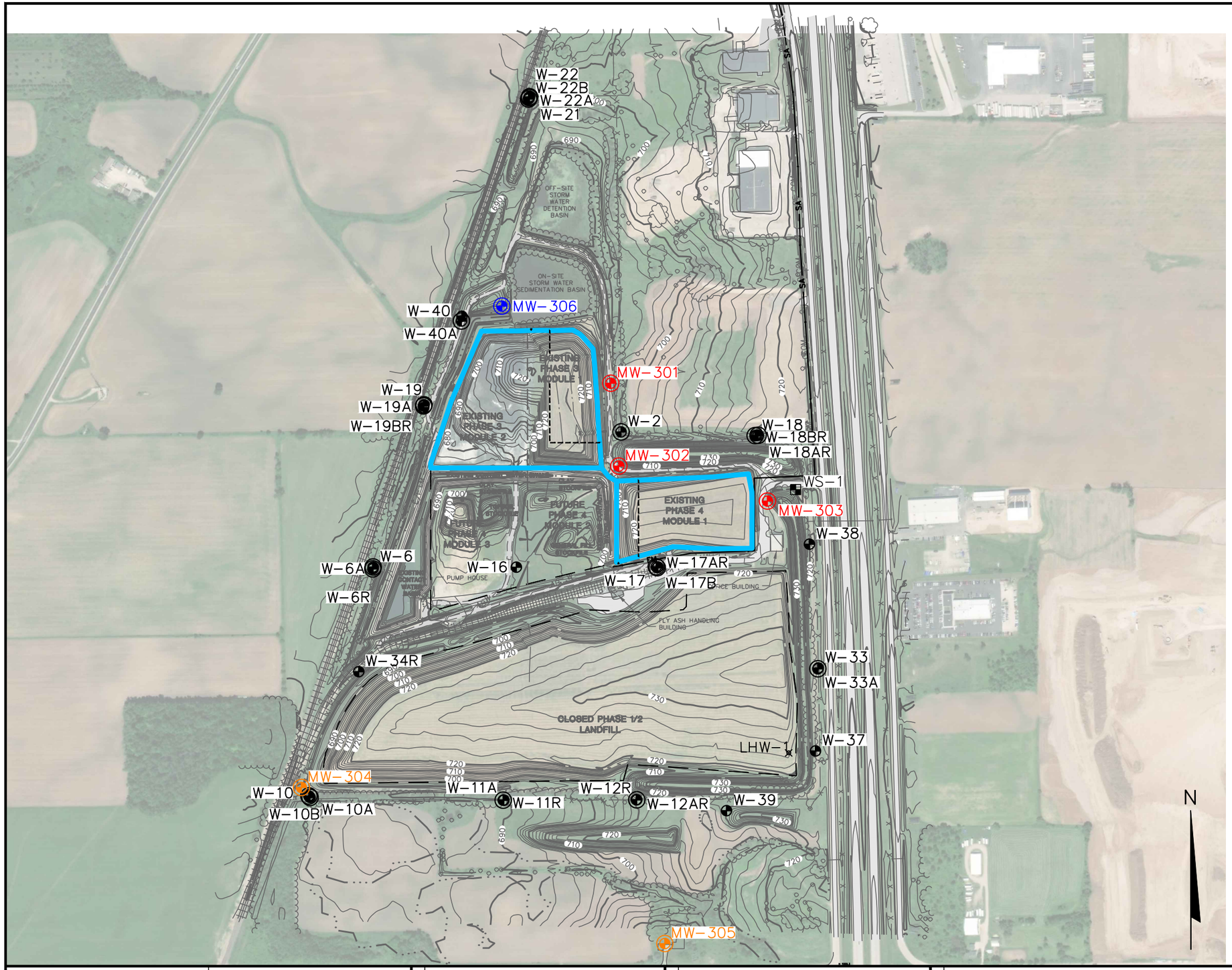
PROJECT NO.	25219069.00	DRAWN BY:	BSS
DRAWN:	11/20/2019	CHECKED BY:	MDB
REVISED:	01/13/2020	APPROVED BY:	TK 01/30/2020

ENGINEER

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

FIGURE
1

I:\25219069.00\Drawings\CCR 2019 Annual Report\Site Location Map.dwg, 1/30/2020 3:46:56 PM



LEGEND

- APPROXIMATE PROPERTY LINE
- MODULE LIMITS
- GRADE (2' CONTOUR)
- GRADE (10' CONTOUR)
- EDGE OF WATER
- SWALE
- CULVERT
- MH MANHOLE
- W CONTACT WATER TRANSFER PIPE
- AB ABANDONED 3" DIA. HDPE PIPE
- TREELINE/TREES
- PAVED ROAD
- UNPAVED ACCESS ROAD
- RAILROAD TRACKS
- FENCE
- UTILITY/LIGHT POLE
- MONITORING WELL (UNCONSOLIDATED)
- PIEZOMETER (UNCONSOLIDATED)
- PRIVATE WATER SUPPLY WELL
- PIEZOMETER (BEDROCK)
- CCR PIEZOMETER (BEDROCK)
- CCR RULE BACKGROUND MONITORING WELL
- CCR UNIT
- LIMITS OF FINAL COVER

NOTE:

1. 2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
2. MONITORING WELLS MW-301, MW-302, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
3. MONITORING WELL MW-305 WAS INSTALLED FEBRUARY 2, 2017 BY BADGER STATE DRILLING, INC.
4. MONITORING WELL MW-306 WAS INSTALLED JUNE 3-5, 2024 BY HORIZON CONSTRUCTION AND EXPLORATION.

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25219069.00	DRAWN BY:	BSS/SB
DRAWN:	11/20/2019	CHECKED BY:	MDB
REVISED:	08/15/2024	APPROVED BY:	

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

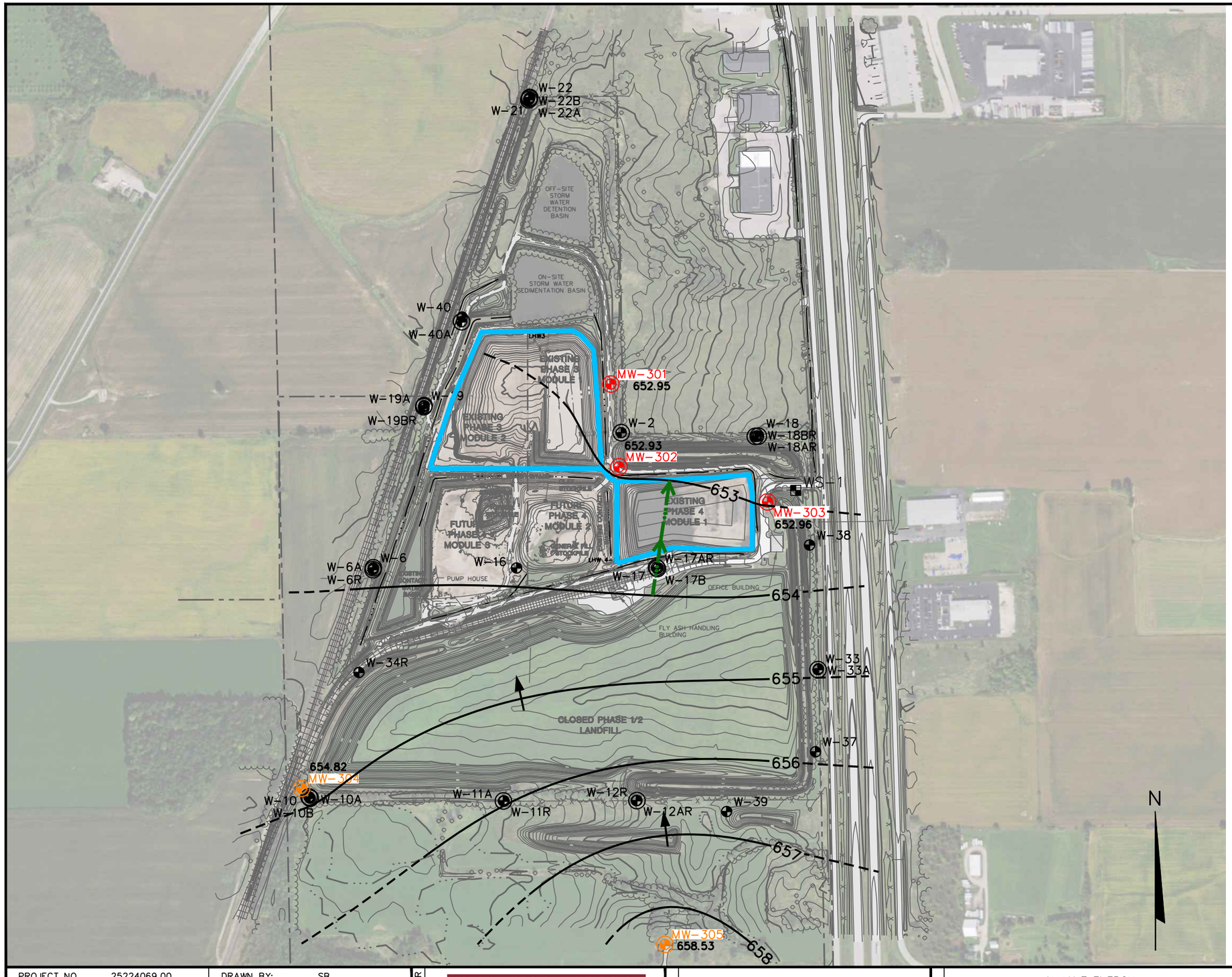
CLIENT: WISCONSIN POWER AND LIGHT CO.
3739 LAKESHORE DRIVE
SHEBOYGAN, WI 53081

SITE: ALLIANT ENERGY
I-43 ASH DISPOSAL FACILITY
TOWN OF WILSON, WI

SITE PLAN AND MONITORING WELL LOCATIONS

FIGURE 2

I:\25224069.00\Drawings\CCR 2019 Annual Report\Site Plan and Monitoring Well Locations.dwg, 8/15/2024 7:52:24 AM



LEGEND

- APPROXIMATE PROPERTY LINE
- MODULE LIMITS
- GRADE (2' CONTOUR)
- 690 GRADE (10' CONTOUR)
- EDGE OF WATER
- SWALE
- CULVERT
- MH MANHOLE
- W CONTACT WATER TRANSFER PIPE
- AB ABANDONED 3" DIA. HDPE PIPE
- TREELINE/TREES
- PAVED ROAD
- UNPAVED ACCESS ROAD
- RAILROAD TRACKS
- FENCE
- UTILITY/LIGHT POLE
- MONITORING WELL (UNCONSOLIDATED)
- PIEZOMETER (UNCONSOLIDATED)
- PRIVATE WATER SUPPLY WELL
- CCR RULE PIEZOMETER (BEDROCK)
- CCR RULE BACKGROUND MONITORING WELL
- CCR RULE UNIT
- 652.95 DEEP POTENTIOMETRIC SURFACE ELEVATION
- DEEP POTENTIOMETRIC SURFACE CONTOUR 1-FOOT CONTOUR INTERVAL (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4)

NOTE:

1. MONITORING WELLS MW-301, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
2. MONITORING WELLS MW-301, MW-302, MW-303 AND MW-304 WERE SURVEYED ON FEBRUARY 8, 2016 BY SCS ENGINEERS.
3. MONITORING WELL MW-305 WAS SURVEYED ON FEBRUARY 15, 2017 BY CQM, INC.
4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM PIEZOMETERS ON APRIL 15, 2024.
5. THE BACKGROUND MONITORING WELLS FOR THE I-43 LANDFILL ARE MW-304 AND MW-305.

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25224069.00	DRAWN BY:	SB
DRAWN:	08/05/2024	CHECKED BY:	NLB/BRK
REVISED:	11/19/2024	APPROVED BY:	BRK (11/19/2024)

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

CLIENT: WISCONSIN POWER AND LIGHT CO.
3739 LAKESHORE DRIVE
SHEBOYGAN, WI 53081

SITE: ALLIANT ENERGY
I-43 ASH DISPOSAL FACILITY
TOWN OF WILSON, WISCONSIN

ANNUAL REPORT
BEDROCK DEEP POTENTIOMETRIC SURFACE MAP
APRIL 15, 2024

FIGURE 3

I:\25224069.00\Drawings\03_WTBL_CCR BEDROCK_April24 Annual Report Figure.dwg, 11/20/2024 7:17:14 AM

LEGEND

- LEACHATE HEADWELL
- MONITORING WELL (UNCONSOLIDATED)
- PIEZOMETER (UNCONSOLIDATED)
- CCR RULE PIEZOMETER (BEDROCK)
- CCR RULE BACKGROUND MONITORING WELL
- PRIVATE WATER SUPPLY WELL
- WPL PARCEL
- CCR RULE UNIT
- RAILROAD TRACK
- 650.47 — POTENTIOMETRIC GROUNDWATER SURFACE ELEVATION (FT AMSL)
- POTENTIOMETRIC GROUNDWATER SURFACE CONTOUR LINE, DASHED WHERE INFERRED (CONTOUR INTERVAL 1.0 FT)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4)

NOTES

1. IMAGERY SOURCE: SHEBOYGAN COUNTY. DATE: 04/10/2022.

2. COORDINATE SYSTEM: NAD 1983 (2011) STATEPLANE WISCONSIN SOUTH FIPS 4803 (US FEET).

3. RAIL DATA FROM BUREAU OF TRANSPORTATION STATISTICS (BTS); FEDERAL RAILROAD ADMINISTRATION (FRA).

4. PARCEL DATA FROM HTTPS://WWW.SCO.WISC.EDU/PARCELS/DATA/.

5. GROUNDWATER ELEVATIONS COLLECTED FROM MONITORING WELLS ON OCTOBER 2, 2024.

N

600 0 600 '

SCALE: 1" = 600'

DOCUMENT PATH: I:\24224069.00\DRAWINGS\I43GW\I43GW.APRX

PROJECT NO.	25224069.00	DRAWN BY:	AA
DRAWN:	10/07/2024	CHECKED BY:	NLB/BRK
REVISED:	01/06/2024	APPROVED BY:	

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

CLIENT: INTERSTATE POWER AND LIGHT CO., 3739 LAKESHORE DRIVE, SHEBOYGAN, WI 53081

SITE: ALLIANT ENERGY, I-43 ASH DISPOSAL FACILITY, TOWN OF WILSON, WISCONSIN

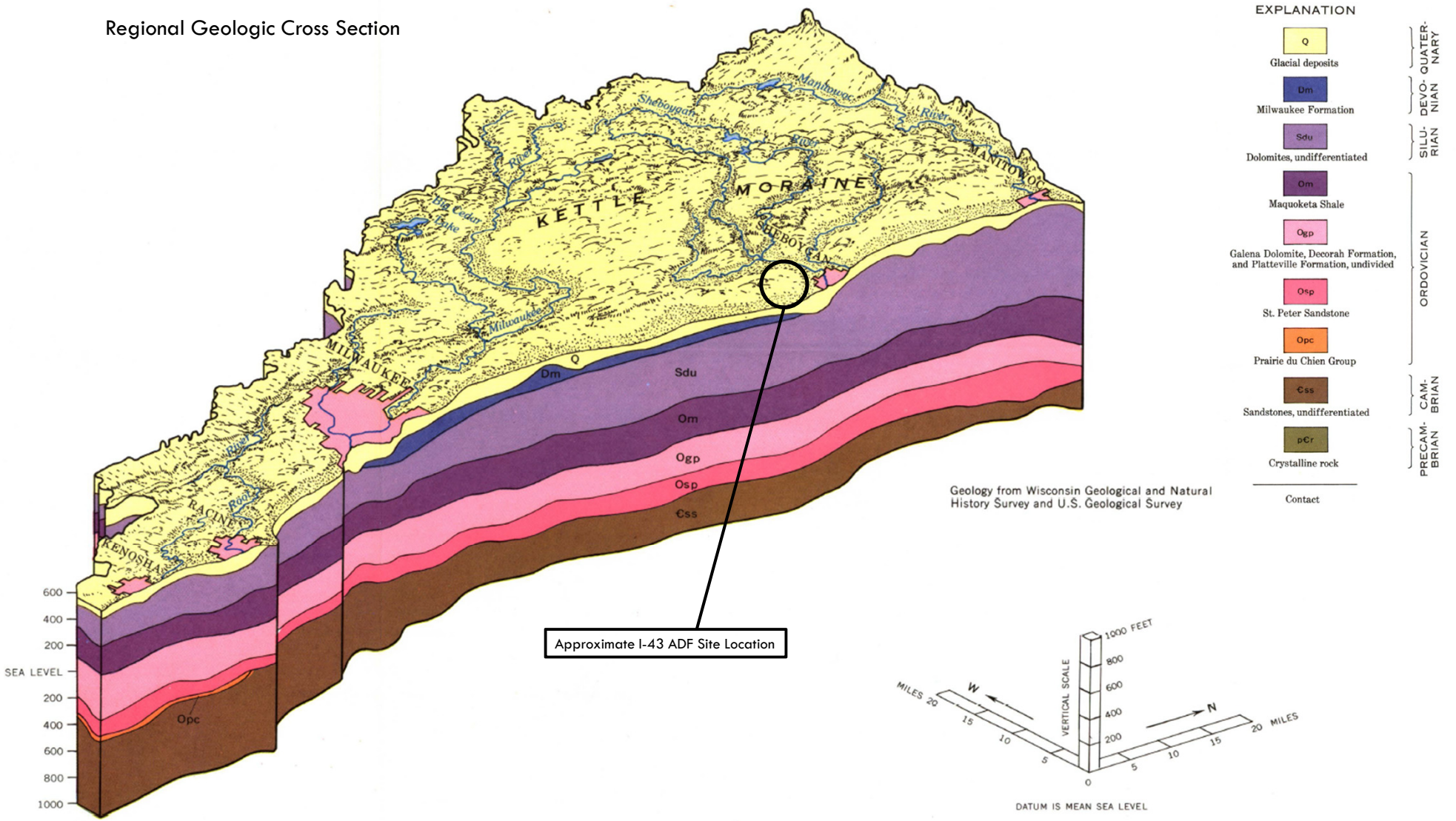
BEDROCK DEEP POTENTIOMETRIC GROUNDWATER SURFACE ELEVATION CONTOUR MAP OCTOBER 2024

FIGURE 4

Appendix A

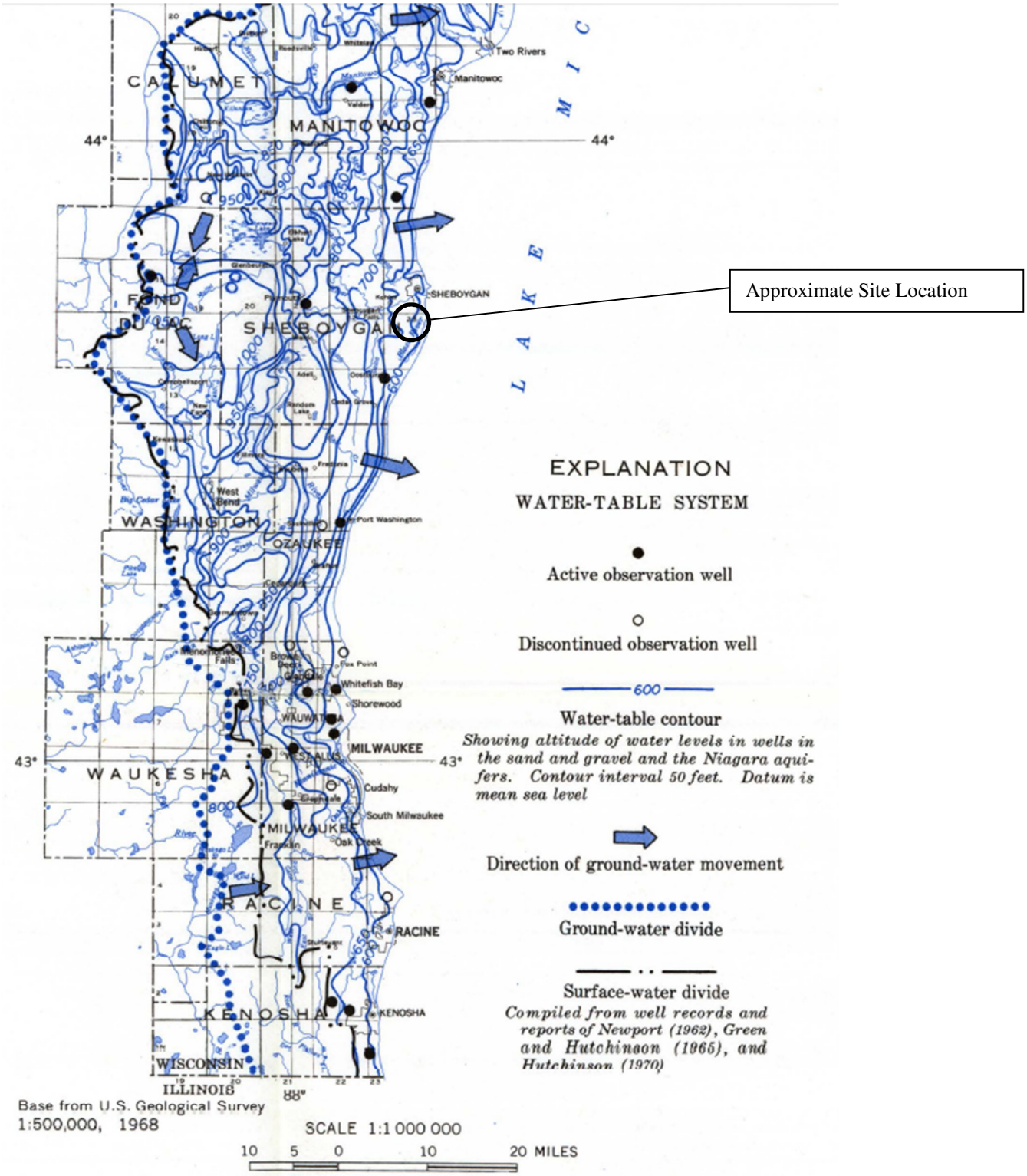
Regional Hydrogeologic Information

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.

Table I43-3. Regional Hydrogeologic Stratigraphy
Edgewater I-43 Landfill / SCS Engineers Project #25216069

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.

I:\25216069.00\Reports\2018 ASD Report\Attachment A Regional Geology and Hydro\Regional_Hydrogeologic_Stratigraphy_I43.doc

Appendix B

Boring Logs and Well Construction Documentation

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL-Edgewater I43 SCS#: 25215135.20		MW-301

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin Durst Badger State	12/15/2015	12/19/2015	HSA/rotary (mud)

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VV864			Feet	694.40 Feet	8.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 626,196 N, 2,559,679 E S/C/N
SE 1/4 of NE 1/4 of Section 8, T 14 N, R 23 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Sheboygan	60	Wilson Tn.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	LEAN CLAY, brown (fill).	CL									
S1	17	2 5 7 8	2	LEAN CLAY, red brown (7.5YR 4/6), moist, with fine to coarse sand, fine gravel, stiff, gray coatings on fractures, diamicton (till).					3.0	M				
S2	22	4 7 9 11	4						2.25					
S3	24	4 5 8 8	7						2.25					
			8	Softer, brittle, crumbles.	CL									
S4		2 4 5 5	9						1.5					
			10	Color changes to (10.5YR 4/2).										
			11											
			12											
			13	LEAN CLAY, dark reddish gray (5YR 4/2), trace coarse sand, fine crumbly texture.										
S5	22	3 4 7 7	14						2.25					
			15											

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

Signature	Firm	
Joe Larson for J.L.	SCS Engineers 2830 Dairy Drive Madison, WI 53718	Tel: (608) 224-2830 Fax:

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

Boring Number MW-301 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	LEAN CLAY, red brown, trace coarse sand and fine gravel.										
			17	Same as above.										
			18											
S6	24	3 5 8 8	19						2.5	M				
			20	Same except dark brown (7.5YR 4/4).										
			21											
			22											
			23											
S7	14	5 5 8 8	24						1.0					
			25	Dark brown (7.5YR 4/2).										
			26											
			27											
			28	LEAN CLAY, dark brown (7.5YR 4/4), trace medium to coarse sand, few fine sand partings, massive, diamicton (till).	CL									
S8	24	4 5 8 8	29						1.5					
			30											
			31											
			32											
			33	Same, massive to indistinctly laminated, trace fine gravel (dolomite), subrounded (till).										
S9	23	4 5 9 10	34						1.0	M				
			35											
			36											
			37											
			38	Same										
S10	24	5 5 8 10	39						1.25					
			40											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-301 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			41	LEAN CLAY, red brown (7.5YR 4/2).										
			42											
			43	Same as above.										
S11	24	5 5 11 9	44						1.75	M				
			45											
			46											
			47											
			48	Same.										
S12	24	5 7 9 9	49						0.75					
			50											
			51											
			52											
			53		CL									
S13	24	6 7 10 11	54						1.75					
			55											
			56											
			57											
			58											
S14	24	5 7 10 10	59						1.75					
			60											
			61											
			62											
			63	Same, except less sand and fine gravel										
S15	24	5 6 7 8	64						2.0					
			65											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-301 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			66	LEAN CLAY, same as above.	CL									
			67											
			68											
S16	24	3 8 8 14	69	SILT, light grey (5YR 6/1), laminated (lake sediment).					2.5					
			70											
			71											
			72		ML									
			73											
S17	18	7 7 22	74						0.5					
			75	SILTY SAND, grey, fine, with medium to coarse sand, trace fine gravel, mostly very fine sand (outwash).										
S18	12	16 18 23	76		SM									
			77											
			78											
S19	24	13 9 12 14	79	LEAN CLAY, dark brown (7.5YR 4/2) with trace fine to coarse sand, fine gravel (sub-rounded dolomite), massive, diamicton, peds have fine crumbling texture.					2.25	M				
			80											
			81											
			82											
			83	Same, except less sand and gravel										
S20	24	14 20 23	84		CL				4.5	M				
			85											
			86											
			87											
			88											
S21	24	9 14 19	89						4.0					
			90											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-301 Use only as an attachment to Form 4400-122. Page 5 of 6

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			91	LEAN CLAY, same as above.										
			92											
			93											
S22	24	10 12 14	94	Same.	CL				2.5					
			95											
			96											
			97											
			98	LEAN CLAY, dark grayish brown (10YR 4/2), massive to very indistinctly laminated, very plastic.										
S23	22	9 11 15	99						3.0	M				
			100											
			101											
			102											
			103	LEAN CLAY, dark grayish brown (10YR 4/2), massive to indistinclty laminated, very plastic (lake sediment).										
S24	24	7 8 10	104						1.5	M				
			105											
			106											
			107		CL									
			108											
S25	22	8 10 12	109						2.0	M				
			110											
			111											
			112											
			113											
S26	NR	8 10 13	114											
			115											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-301 Use only as an attachment to Form 4400-122. Page 6 of 6

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			116	LEAN CLAY, same as above.										
			117											
			118	Thinly laminated (lake sediment).	CL									
S27	24	WOR	119						3.5	M				Rods dropped
			120											
S28	22	17 20 21	121	SILT, greyish brown (10YR 5/2), with clay (lake sediment).	ML				2.0	M				
			122											
S29	9	19 50/3	123	SILTY GRAVEL, dolomite fragments, grey, with clayey silt (weathered bedrock).	GM									
			124	DOLOMITE (bedrock).										
			125											
S30			126											S30 sampled chips from 124'-128'.
			127											
			128											
			129		DOLOMITE									
			130											Lost circulation- no water/mud returning.
			131											
			132											
			133											
			134											
			135	End of boring @ 135.0'										
				Checked and edited by: BJS 3/30/2016										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL-Edgewater I43 SCS#: 25215135.20		MW-302

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin Durst Badger State	12/4/2015	12/7/2015	HSA/rotary (mud)

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VV863			Feet	700.24 Feet	8.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 625,788 N, 2,559,719 E S/C/N
NE 1/4 of SE 1/4 of Section 8, T 14 N, R 23 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Sheboygan	60	Wilson Tn.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	LEAN CLAY, strong brown (7.5YR 4/6) to dark brown (7.5YR 3/2) mottled, trace fine to coarse sand.										
S1	13	3 6 8 10	2						3.7	M				
			3	LEAN CLAY, brown (7.5YR 4/4), trace small, fine to coarse sand and fine gravel, possible clay and gravel										
S2	11	3 6 9 11	4	fill @5' very hard, dry, diamicton (till).					3.5	M				
			5											
			6											
S3	18	5 8 10 14	7	LEAN CLAY, mottled, strong brown (7.5YR 4/6) and brown, trace fine to coarse sand, fine gravel, very slightly moist (till).	CL				2.5- 4.0	M				
			8											
S4	15	4 4 7 8	9						2.0	M				
			10											
			11											
			12											
			13	Same as above, except brown (7.5YR 4/4), very hard, cohesive (till).										
S5	19	3 6 10 12	14						2.0- 4.0	M				
			15											

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

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

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-302 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	LEAN CLAY, brown (7.5YR 4/4), trace fine to coarse sand, fine gravel, as above (till).										
			17											
			18											
S6	24	3 4 6 9	19						1.5	M				
			20											
			21											
			22											
			23											
S7	24	2 3 5 6	24	Same as above, except dark brown (7.5YR 4/2), more moist (till).					1.5	M				
			25											
			26											
			27											
			28		CL									
S8	20	7 8 7 9	29	LEAN CLAY, brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel (till).					1.0					
			30											
			31											
			32											
			33											
S9	6	5 6 8 8	34						1.0					
			35											
			36											
			37											
			38											
S10	24	5 8 10 11	39						1.0					
			40											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-302 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			41	LEAN CLAY, brown (7.5YR 4/2), trace fine to coarse sand, fine gravel (till).										
			42											
			43											
S11	19	7 9 11 12	44						1.5- 2.75	W				
			45											
			46											
			47											
			48		CL									
S12	18	6 10 12 12	49						1.5	W				
			50											
			51											
			52											
			53	Same as above, except less sand and gravel.										
S13	24	7 7 10 10	54						1.25	W				
			55											
			56											
			57											
			58											
S14	24	7 9 11 12	59	LEAN CLAY, brown, trace fine to coarse sand, 1/8-3/4" fine to coarse sand seams at 58.5',59', and 59.75', laminated with very thin silt partings (lake sediment).	CL				1.5	W				
			60											
			61											
			62											
			63											
S15	24	7 9 12 12	64	SILT, brown (7.5YR 5/2), massive, little clay (lake sediment).	ML				1.5	W				
			65											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-302 Use only as an attachment to Form 4400-122. Page 4 of 7

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S16	18	14 18 30 26	66	SILT with sand, brown, massive, sand is very fine to fine.	ML					W				
			67	SILTY SAND, fine, massive.	SM									
				SILT WITH SAND, fine, loose, mostly very fine sand (lake sediment).										
S17	20	14 25 38 32	68							M-W				Sand appears barely wet.
			69											
S18	18	21 30 34 34	70							W				
				Same.										
			71											
S19	18	14 12 25 24	72											
			73	Same.	ML									
S20	18	19 27 28 28	74											
			75											
S21	18	21 29 33 30	76											
			77											
S22	16	23 32 30 28	78											
			79											
S23	16	19 21 21 27	80	POORLY GRADED SAND WITH SILT, fine with medium, brown to gray, loose (outwash).	SP-SM					W				
			81											
S24 A/S24 B	14	9 19 19 16	82							W				
				SILT, brown, little fine sand, massive to indistinctly laminated (lake sediment).										
			83											
			84											
			85		ML									
			86											
			87											
			88											
				LEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel, very stiff, cohesive, diamicton (till).										
S25	18	10 20 23 24	89		CL				3.0-4.5	W				
			90											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-302 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			91	LEAN CLAY, brown, massive, trace fine to coarse sand, fine gravel, as above (till).										
			92											
			93		CL									
S26	20	12 18 21 25	94	Same.					2.5	W				
			95											
			96											
			97											
			98	LEAN CLAY, brown (7.5YR 5/2), massive to indistinctly laminated, trace fine gravel, red/gray laminations (lake sediment).										
S27	14	17 20 22 12	99						2.5					
			100											
			101											
			102											
			103	LEAN CLAY, grayish brown (10YR 5/2), laminated, with very thin silt partings, very stiff, hard (lake sediment).										
S28	24	8 10 13 14	104						2.0					
			105											
			106		CL									
			107											
			108	Same as above, except silt is concentrated in 1mm layers spaced 2-6" apart.										
S29	24	7 9 12 14	109						1.5					
			110											
			111											
			112											
			113	Same except dark grayish brown (10YR 4/2), laminated, fewer silt partings, very plastic (lake sediment).										
S30		7 9 12 14	114											
			115											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-302 Use only as an attachment to Form 4400-122. Page 6 of 7

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			116	LEAN CLAY, same as above, very plastic, laminated (lake sediment).										
			117											
			118											
S31	24	7 8 10 12	119		CL				1.0					S30 was not collected
			120	Same.										
S32	24	9 10 12 13	121						0.5- 1.0					
			122											
S33	24	11 13 18 18	123	Same as above, very plastic, laminated, few silt partings (lake sediment).					2.0					
S34			124											
S35	24	14 22 30/5	125	LEAN CLAY WITH SAND, grayish brown, sand is fine.	CL				0.5					
S36			126	SILT WITH SAND, grayish brown, mostly very fine sand, cohesive.	ML									
S37	24	30 25 28 24	127	LEAN CLAY WITH SAND, grayish brown, sand is fine, some silt, laminated to thinly bedded clay and silt (lake sediment).					0.5					
S38			128											
S39	24	15 17 19 17	129	Thinly bedded silty fine sand and clay.	CL				0.5- 1.0					
			130											
S40	6	21 19 50/3	131	With dolomite gravel.										
			132	DOLOMITE, light gray and brownish gray, dark and light laminations, massive, some pitted and vuggy, mostly without mineralization, vertical fractures common.										
			133											
			134											
			135											
			136		DOLOMITE									
			137											
S41	0	50/3	138											Convert to rock coring. Run 1 133'-143'-No water return below 139'.
			139	Shaly zone (6') at ~138.5. gray, mineralized fractures below 139'.										
			140											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-302 Use only as an attachment to Form 4400-122. Page 7 of 7

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			141	DOLOMITE (bedrock).										
			142	Very vuggy and mineralized vugs and fractures below 142'.	DOLOMITE									TCR=126/120
			143											TCR=100% SCR=103/120 SCR=86% MCR=68.5/120 MCR=57% RQD=57% Fair
			144	Blind drilled 144-148'										
				End of boring @ 148' Logged by: Zach Watson: 0-28' Meghan Blodgett: 28-110' Tony Kollasch: 110-144' Checked and edited by: BJS 3/30/2016										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL-Edgewater I43 SCS#: 25215135.20		MW-303

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin Durst Badger State	11/30/2015	12/4/2015	HSA/rotary (mud)

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VV865			Feet	716.60 Feet	8.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 625,616 N, 2,560,451 E S/C/N
NE 1/4 of SE 1/4 of Section 8, T 14 N, R 23 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Sheboygan	60	Wilson Tn.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S1	14	1 2 2 4	1-2	LEAN CLAY, strong brown (7.5YR 4/6), med plasticity, mottled coloring, trace coarse sand.	CL				1.5	M				
S2 A, B	14	4 1 2 2	3-5						0.75	M				
			5	SILTY SAND layer, fine to coarse @ 5-5.5'.	SM									
S3	24	4 7 10 11	6-7	LEAN CLAY, (7.5YR 4/4), trace sand, fine to coarse, fine gravel, very stiff, firm, massive, diamicton (till).					2.8-4.0	W				
S4	18	2 5 7 9	8-10	Same.	CL				3.0	W				
S5	22	2 3 4 6	11-15						1-1.8	W				

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

Signature	Firm	Tel: (608) 224-2830
Zach Watson MJW PE for Z.W.	SCS Engineers 2830 Dairy Drive Madison, WI 53718	Fax:

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

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-303 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	LEAN CLAY, (7.5YR 4/4), as above.										
			17											
			18											
			19											
S6	24	3 4 6 8	20						2.0	W				
			21											
			22											
			23											
			24											
S7	24	3 5 6 7	25	Same.					1.5- 2.0	W				
			26											
			27											
			28		CL									
			29	Same.										
S8	24	3 6 7 8	30						1.5	W				
			31											
			32											
			33											
			34											
S9	24	3 5 7 9	35						2.2	W				
			36											
			37											
			38											
			39	Same as above, except very soft and saturated.										
S10	6	6 9 11 13	40						NA	W				

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-303 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			41	LEAN CLAY, (7.5YR 4/4).										
			42											
			43											
			44											
S11	6	10 12 12 16	45							W				
			46											
			47											
			48											
			49	(no sample retained)										
S12	24	5 6 8 10	50						1.3	W				
			51											
			52											
			53		CL									
			54	LEAN CLAY (7.5YR 4/4), fine to coarse sand, fine gravel, firm, massive, diamicton (till).										
S13	21	3 7 7 9	55						1.0	W				
			56											
			57											
			58											
			59	Same.										
S14	19	10 11 13 10	60						1.0	W				
			61											
			62											
			63											
			64											
S15	11	4 6 9 11	65						0.5	W				

Boring Number MW-303 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			66	Same.										
			67											
			68											
			69											
S16	4	9 34 50/5	70	LEAN CLAY WITH SAND, brown (7.5YR 4/4), soft, sand fine to coarse.					0	W				
			71											
			72											
			73											
			74											
S17	7	8 12 12 13	75	Some as above, except trace fine to coarse sand.	CL				0	W				
			76											
			77											
			78											
			79	Same as above except, soft in some areas and stiff in others.										
S18	24	3 6 5 7	80						0.5	W				
			81											
			82											
			83											
			84	SANDY SILT, (10YR 5/4), fine sand, very uniform grains, loose, mostly very fine sand, non-plastic.										
S19	15	19 22 25 31	85							W				
			86		ML									
S20	3	16 16 23 25	87							W				
			88	LEAN CLAY, brown (7.5YR 4/4), trace coarse sand, massive to indistinctly laminated (lake sediment).										
S21	20	20 18 13 14	89		CL					W				
			90											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-303 Use only as an attachment to Form 4400-122.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			91											
			92											
			93											
			94	Same with layers of SANDY SILT, yellowish brown (10YR 5/4), fine, loose (lake sediment).										
S22	18	35 38 23 30	95							W				
			96											
S23	18	19 12 12 13	97		CL				1.0	W				
			98											
			99											
			100											
			101											
			102											
			103											
			104	SANDY SILT, yellowish brown (10YR 5/4) fine, mostly very fine sand, loose (lake sediment).										
S24	16	24 28 34 50/4	105							W				
			106		ML									
S25	12	36 50/5	107							W				
			108											
S26	23	32 22 20 24	109	LEAN CLAY, with layers of SILT, SAND (lake sediment as above).					3.2	W				
			110											
			111		CL									
			112											
			113											
			114											
S27	3	50/5	115	SILTY SAND, (10YR 5/4).	SM				1.2	W				

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-303 Use only as an attachment to Form 4400-122. Page 6 of 7

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			116		SM									
S28	5	50/4	117	LEAN CLAY, 7.5 YR 5/2, trace gravel.	CL				2.5	W				
			118											
S29	5	50/5	119	SILTY SAND WITH GRAVEL, fine, with medium and coarse sand, greys, blues whites and browns, gravel is fine and coarse.						W				
			120											
S30	8	41 50/4	121	SILTY SAND, fine to coarse grained, trace fine gravel, fine (outwash).						W				
			122											
S31	2	50/4	123							W				
			124											
			125		SM									
			126											
S32	10	31 50/4	127	Same.						W				
			128											
S33	3	50/5	129							W				
			130											
			131	SILT, some gravel, very dense/stiff (weathered bedrock).	ML									
S34	4	50/4	132						4.5	W				
			133	DOLOMITE (bedrock).										
			134											
			135											
			136		DOLOMITE									
			137											
			138											
			139											
			140											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-303 Use only as an attachment to Form 4400-122. Page 7 of 7

Sample: Number and Type	Sample: Length Att. & Recovered (in)	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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			141	DOLOMITE (bedrock).	DOLOMITE									
			142											
			143											
				End of boring @ 143.5'										
				Checked and edited by: BJS 3/30/2016										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL-Edgewater I43 SCS#: 25215135.20		MW-304

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin Durst Badger State	1/25/2016	1/26/2016	HSA/rotary (mud)

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VV866			Feet	689.48 Feet	8.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 624,204 N, 2,558,156 E S/C/N
SW 1/4 of SE 1/4 of Section 8, T 14 N, R 23 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Sheboygan	60	Wilson Tn.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S1	14	2 5 6 11	1–2	LEAN CLAY, brown (7.5YR 4/6), with fine to coarse sand, fine gravel.	CL				3.5	M				
S2	14	4 6 5 9	3–4						3.5	M				
			5	Same as above, except dark brown.										
			6	LEAN CLAY, brown (7.5YR 4/6), with silt layers, cohesive, stiff.										
S3	24	2 5 8 11	7						3.25	M				
			8	LEAN CLAY, brown (7.5YR 4/4), with fine to coarse sand, fine gravel, massive, stiff, diamicton (till).										
S4	24	4 5 9 10	9–10						3.25	M				
			10	1 inch interval of sand, fine to medium grained, brown.	CL									
			11–13											
S6	24	2 4 4 5	14	LEAN CLAY, as above (till).					1.5	M				
			15											

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

Signature	Firm	Tel: (608) 224-2830
Joe Larson for J.L.	SCS Engineers 2830 Dairy Drive Madison, WI 53718	Fax:

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-304 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	LEAN CLAY, brown (7.5YR 4/4), as above (till).										
			17											
			18											
S7	22	3 4 4 6	19						1.25	M				
			20											
			21											
			22											
			23											
S8	22	2 3 5 6	24											
			25											
			26											
			27											
			28		CL									
S9	24	2 4 6 7	29						1.0	M				
			30											
			31											
			32											
			33											
S10	24	3 5 6 9	34						1.0	M				
			35											
			36											
			37											
			38											
S11	24	3 6 8 12	39	Same with fine silt partings.					2.5	M				
			40											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-304 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			41	LEAN CLAY, brown.	CL									
			42											
			43	CLAYEY SILT, brown (7,5YR 4/6).										
S12	24	4 4 5 8	44		ML					M				
			45	LEAN CLAY WITH SAND, brown (7.5YR 4/6), fine to coarse.										
			46											
			47		CL									
			48											
S13	24	2 4 4 6	49						0.75	W				
			50	LEAN CLAY, brown (7.5YR 4/6).										
			51											
			52		CL									
			53											
S14	24	4 5 8 11	54	SILTY SAND, brown, fine to medium grained.	SM				1.5	M				
			55	CLAYEY SAND, fine to coarse.										
			56											
			57		SC									
			58											
S15	16	5 13 23 25	59	POORLY GRADED SAND WITH SILT, grey (10YR 4/2), fine to medium grained (outwash).					0.5	W				
			60											
S16	12	8 11 18 20	61	Same.	SP-SM					W				
			62											
S17	20	15 23 31 30	63	Same except mostly very fine sand.										
			64											
			65	LEAN CLAY, with fine to coarse sand, fine gravel, diamicton (till)	CL									

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-304 Use only as an attachment to Form 4400-122. Page 4 of 6

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S18	20	14 19 15 15	66	LEAN CLAY, brown (7.5YR 4/6).	CL				2.5	M				
			67											
			68											
S19	8	50/5	69	LEAN CLAY, with layers of SILT, fine to coarse sand (lake sediment).					4.5	M				
			70											
			71											
			72											
			73	LEAN CLAY, dark brown (7.5YR 4/2), laminated, very plastic (lake sediment).										
S20		8 10 15 17	74						1.25	M				
			75											
			76		CL									
			77											
			78	Same with few silt partings, very stiff.										
S21	24	7 11 14 15	79						2.75					
			80											
			81											
			82											
			83											
S22	12	25 50/5	84						>4.5					
			85	SILTY SAND, grey, fine to coarse grained, dense, trace gravel.										
S23	16	21 34 42 46	86		SM					W				
			87	Limestone rock fragments, with fine and coarse gravel.										
S24	1	50/2	88											
			89											
			90											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-304 Use only as an attachment to Form 4400-122.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S25	3	50/4	91	Same, diamicton.	SM									
S26	2	50/5	92											S26 was skipped.
			93	SILTY SAND and SILT, except dark grayish brown (10YR 4/2), sandstone fragments, fine sand, fine gravel, cohesive, brittle.										
S27	24	34 31 42 52/3	94							W				
			95											
S28	14	30 39 50/3	96		SM					W				
			97											
S29	12	20 34 50/5	98							W				
			99	FAT CLAY WITH GRAVEL, brown (7.5 4/3), sandstone fragments, fine to coarse sand, fine gravel.										
S30	12	37 50/4	100		CH				4.5	W				
			101	SILTY SAND, dark grayish brown (10YR 4/2).	SM									
S31	12	16 35 50/4	102						1.5	W				
			103	LEAN CLAY, very dark brown (7.5 YR 2.5/2).	CL									
				SILTY SAND, dark grayish brown (10YR 4/2), fine grained.										
S32	18	17 35 50/4	104		SM					W				
			105	SANDY LEAN CLAY, dark brown (7.5YR 3/2), trace gravel.										
S33	8	17 50/2	106		CL				4.0	W				Bedrock at 106.5 ft bgs.
			107	SILTY SAND, dark grayish brown (10YR 4/2), fine grained, (weathered bedrock).										
S34	2	50/3	108		SM									
			109	DOLOMITE, gray (7.5YR 6/1), angular fragments.										
S35	NA		110											
			111											
			112		DOLOMITE									
			113											
			114											
			115											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-304 Use only as an attachment to Form 4400-122. Page 6 of 6

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S36	NA		116 117 118	DOLOMITE, gray (7.5YR 6/1), angular fragments.	DOLOMITE									
				End of boring @ 118' Logged by: Joe Larson: 0-93' Kyle Kramer: 93-118' Checked and edited by: BJS 3/30/2016										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL I43 SCS#: 25217032.00		MW-305

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin Duerst Badger State Drilling	1/30/2017	2/2/2017	HSA/Rotary

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VY819		MW-305	Feet	715.46 Feet	6.3 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 623,435 N, 2,559,946 E S/C/N
SE 1/4 of SE 1/4 of Section 8, T 14 N, R 23 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Sheboygan	60	Wilson Tn.

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	TOPSOIL.										
S1	8	2 2 4	2	LEAN CLAY, strong brown (7.5YR 4/6).					1.75					
S2	14	4 8 11	4						4.5+					
S3	18	7 11 14	6		CL				4.5+					
S4	18	4 10 9	9						4.5+					
			10											
			11											
			12											

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

Signature [signature] Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711 Tel: (608) 224-2830 Fax:

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

Boring Number MW-305 Use only as an attachment to Form 4400-122. Page 2 of 7

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S5	18	4 6 8	13–14	Same as above except, brown (7.5 YR4/3).					2.5					
			15–18											Mud Roatary @ 15 ft bgs.
S6	18	4 6 9	19	Same as above except, trace gravel.					4.5+					
			20–22		CL									
S7	18	4 6 7	24						3.0					
			25–28											
S8	18	4 6 7	29						2.0					
			30–32											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-305 Use only as an attachment to Form 4400-122. Page 3 of 7

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S9	18	5 8 9	33–35						2.5					
S10	18	4 7 9	39–40						2.5					
			42		CL									
S11	18	3 7 8	44–45						2.5					
S12	18	3 9 13	49–50						2.0					

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A

Boring Number MW-305 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			53											
S13	18	5 5 8	54	Same as above except, brown (7.5YR 4/3).					2.5					
			55											
			56											
			57											
			58											
S14	18	5 5 6	59						1.5					
			60		CL									
			61											
			62											
			63											
S15	12	5 5 16	64						3.0					
			65											
			66											
			67											
			68											
S16	12	13 16 16	69	POORLY GRADED SAND, gray (10YR 5/1), medium to coarse grained.	SP									
			70											
S17	20	14 19 20 22	71											
			72	SILTY SAND, brown (7.5YR 4/3), fine grained.	SM									

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-305 Use only as an attachment to Form 4400-122. Page 5 of 7

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			73		SM									
S18	16	9 9 10 16		LEAN CLAY, brown (7.5YR 4/3).	CL									
			74	POORLY GRADED SAND, gray (10YR 5/1), fine to medium grained.										
S19	18	8 16 18 21	75											
			76											
S20	16	8 18 20 23	77											
			78											
S21	16	15 20 23 30	79											
			80											
S22	16	15 23 26 31	81											
			82											
S23	18	21 18 29 31	83		SP									
			84											
S24	18	17 30 33 33	85											
			86											
			87											
			88											
S25	16	15 20 30 30	89											
			90											
			91											
			92											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-305 Use only as an attachment to Form 4400-122. Page 6 of 7

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S26	18	18 23 25 29	93											
			94											
			95											
			96											
			97											
			98											
S27	14	10 22 24 25	99	Same as above except, trace coarse gravel.										
			100											
			101		SP									
			102											
			103	Same as above except, trae coarse gravel.										
S28	12	13 13 10 18	104											
			105											
			106											
			107											
			108											
S29	12	23 42 50/0.5	109											
			110											
			111	DOLOMITE, gray (10YR 5/1), weathered.										
			112											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-305 Use only as an attachment to Form 4400-122. Page 7 of 7

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			113											
			114											
			115											
			116											
			117											
			118											
			119											
S30			120											
			121	End of boring at 121 ft bgs.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL - I-43 Ash Disposal Facility SCS#: 25224159		MW-306

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Sweet Horizon Construction and Exploration	5/30/2024	6/3/2024	Rotosonic

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VS193		MW-306	Feet MSL	690.26 Feet MSL	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 626,576 N, 2,559,143 E S / C / N
NW 1/4 of NE 1/4 of Section 8, T 14 N, R 23 E
Lat 43° 41' 50.74"
Long 87° 45' 58.90"
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Sheboygan	60	Sheboygan

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1.5	3" gravel from drill pad on top. LEAN CLAY, dark yellowish brown (10yr 4/6), w/ roots and trace subround gravel.										
S1	23.5		3.0						2.25	M				First run 7', following runs are 5'.
			4.5											
			6.0	Thin black lamination (lake sediment?).										
			7.5	Same as above, but black lamination is now black mottle. Some yellow mottle/splotches.										
			9.0											
S2	23		10.5		CL				1.0-1.25	W?				Samples from: 0'-7', 7'-12', 12'-17', 17'-22'. In line with water feature, could be saturated (very soft).
			12.0	Same as above, but yellowish brown (10yr 5/4), black mottle replaced with white mottle. Fine to coarse subround to subangular gravel.										
			13.5											
S3	60		15.0						4.5	M				Greater than 60", expanded extra 10"
			16.5											
			18.0	Same as above, but no mottle with yellow Fe stained splotches (till?).										
			19.5											

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

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

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-306 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			21.0											
S4-S5	80		22.5	Same as above. Trace fine rounded gravel, subangular coarse gravel.	CL				2.5	M				17'-22' fell out of barrel, recovered in 17'-27' push. Still separated out to S4 and S5 in sample bags.
			24.0											
			25.5											
			27.0	SANDY CLAY? Likely a sandy layer, fine sand is coating the clay, core from 10' push, low recovery for 10' push to 37'	SC									
			28.5											
			30.0											
			31.5											
S6-S7	77		33.0	Same as above, color change to brown (10yr 4/3)					3.25	M				Samples from: 22-27', 27-32', 32-37', 37-42'. 27-32' was lost originally in 5' push, and recovered in 10' push to 37'.
			34.5											
			36.0											
			37.5	Same as above.	CL									
			39.0		CL									
			40.5	More sand (fine and round), still brown and still containing trace fine to coarse subround to subangular gravel	CL									
S8	51		42.0						1.25	M				Switched to 10' runs due to better recovery than with 5' runs. Assumed to be losing sand seams.
			43.5											
			45.0	SANDY CLAY (10yr 4/3).	SC									
			46.5	POORLY GRADED SAND, fine to medium grain size with round grains, brown (10yr 4/3).	SP									
			48.0	No recovery, but assumed to be same fine to medium sand.										
			49.5		SP									
			51.0											
S9	0		52.5											Samples from 37'-45', 45'-47', and 47'-57' were

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-306 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			54.0											lost. Driller says it feels like the same sand at the bottom of previous run. Adding a new shoe to prevent from happening again.
			55.5		SP									
			57.0	POORLY GRADED SAND, brown (10yr 4/3), trace silt and fine subround gravel (outwash)										
			58.5											
			60.0											
			61.5		SP									
S10	44		63.0							W				Samples collected from 57'-66', 66'-67', and 67'-77'.
			64.5											
			66.0	SANDY CLAY, with silt and fine angular gravel (10yr 4/3).	SC									
			67.5	LEAN CLAY, same color as above, but some laminations of reddish brown first few feet (lake sediment) and fine to coarse subangular to subround gravel.										
			69.0											
			70.5											
S11	60		72.0						2.5-2.75	W				
			73.5											
			75.0											
			76.5		CL									
			78.0	Trace sand and fine to coarse subangular to subround gravel. No more laminations.	CL									
			79.5											
			81.0	Same as above, but brown (10yr 4/3)	CL									
S12	70		82.5						1.75	W				Samples collected from 77'-87' (including silt seam), 87'-97'. Silty coating around core, likely silt/sand that fell out when pulling core.
			84.0											
			85.5											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-306 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			87.0	LEAN CLAY, brown (10yr 4/3 and 5/3), with silt and fine coarse rounded gravel. Thin bedding alternating between two brown colors is present (lake sediment).	CL									
			88.5											
			90.0											
			91.5											
S13	42		93.0						2.75-3.0	W				End of 5/30/2024.
			94.5											
			96.0											
			97.5	LEAN CLAY, grayish brown (10yr 5/3) massive, no gravel/silt, trace Fe staining.	CL									
			99.0											
			100.5	Same as above.										
S14	71		102.0		CL				2.75	W				Resumed drilling 5/31/2024 at 97' below ground surface.
			103.5											
			105.0											
			106.5	Same as above but dark greyish brown (10yr 4/2).										
			108.0											
			109.5											
			111.0											
S15	73		112.5						3.0	W				Samples collected from 97'-107' and 107'-117'
			114.0											
			115.5											
			117.0	Same as above.										
			118.5											
			120.0	Same as above but with fine to coarse round gravel (till?).	CL									

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-306 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			121.5		CL									
S16	64		123.0	SILTY CLAY (CL-ML), brown (4.5yr 4/3) interbeds, 2-4", and massive LEAN CLAY 1" (10yr 5/3). Only silty clay beds contain fine to coarse round gravel.	CL-ML				1.5	W				Rock hit around 122'-123'. Rock fragments in clay. Hit solid bedrock at 125'.
			124.5											
			126.0	LOW PLASTICITY GRAVELLY CLAY, "Dolomite Bedrock", 5" dolomite recovered white (10yr 8/1), still in SILTY CLAY.	CLG									
			127.5	"GP-GM", "POORLY GRADED GRAVEL WITH SILT" (DOLOMITE BEDROCK), 2" in 126-127', white (10yr 8/1) and dark grey fine to coarse angular "gravel". Silt is brown (10yr 5/3).										
			129.0											
S17	18		130.5		BEDROCK				2.0	W				Samples collected from 117'-123', 123'-125', 125'-126', 126'-127', and 127'-132'. Going back to 5' runs.
			132.0	Same as above.										
			133.5											
S18	33		135.0							W				Called "GP" based on recent soil logging expectations for when hitting bedrock. Bedrock is in parentheses. Collected sample of full run from 132'-137'.
			136.5	1' 2.5" solid DOLOMITE core, greenish grey (GLEY 5G 6/1) and white (GLEY N8/) and dark grey mineralized veins, and vugs, visible grains fine to very fine. Pyrite and other minerals in fractures, vugs and veins. Some chlorite splotches? (sky blue).	BEDROCK									
				End of Boring at 137' below ground surface.										

SCS # 25215135.20

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 I43	Local Grid Location of Well: 626196.3 ft. ☒ N. ☐ S. — 2559679 ft. ☒ E. ☐ W.	Well Name: MW-301
Facility License, Permit or Monitoring No.: 02853	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VV864 — DNR Well ID No.:
Facility ID: 460022090	St. Plane 626196.3 ft. N, 2559679.0 ft. E. S/C/N	Date Well Installed: 1/14/2016 (m m d d y y y y)
Type of Well: Well Code 12 / PZ	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 8, T. 14 N, R. 23 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Kevin Durst; Badger State Drilling
Distance from Waste/Source ____ ft. — Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number:

A. Protective pipe, top elevation 697.21 ft. MSL

B. Well casing, top elevation 696.96 ft. MSL

C. Land surface elevation 694.40 ft. MSL

D. Surface seal, bottom 693.90 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):
Site Supply Well

E. Bentonite seal, top 566.40 ft. MSL or 118 ft.

F. Fine sand, top 571.40 ft. MSL or 123 ft.

G. Filter pack, top 569.40 ft. MSL or 125 ft.

H. Screen joint, top 567.40 ft. MSL or 127 ft.

I. Well bottom 562.40 ft. MSL or 132 ft.

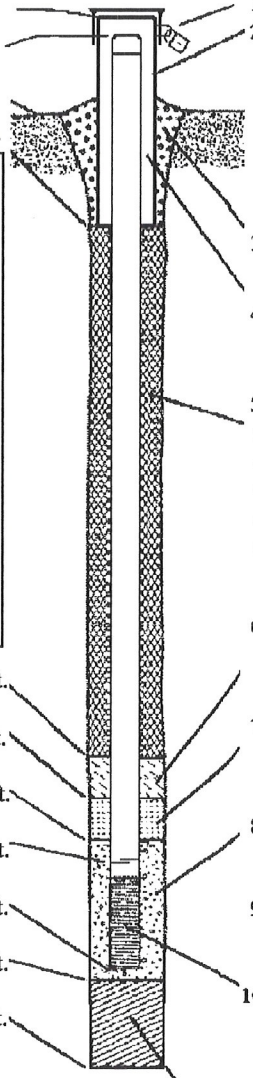
J. Filter pack, bottom 562.40 ft. MSL or 132 ft.

K. Borehole, bottom 559.40 ft. MSL or 135 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.4 in.

N. I.D. well casing 1.9 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 7 ft.
c. Material: Steel ☒ 04; Other ☐ ____
d. Additional protection? ☒ Yes ☐ No
If yes, describe: yes, bumper posts (3)

3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ____
8 bags 3/8in Bentonite chips

4. Material between well casing and protective pipe: Bentonite ☐ 30; Other ☐ ____
Ohio #5 sand- 2 bags

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. 200 Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 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. 2 Bags Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. Ohio #7 ☐
b. Volume added 0.5 lbs ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 ☐
b. Volume added 3 lbs ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ____

10. Screen material: PVC
a. Screen type: Factory cut ☐ 11; Continuous slot ☒ 01; Other ☐ ____
b. Manufacturer Monoflex
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None ☐ 14; Other ☒ ____
Bedrock cuttings/slough

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

Signature: for S. L. — 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.

SCS # 25215135.20

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-I43	Local Grid Location of Well: ☒ N. ☐ S. 625788.4 ft. ☒ E. ☐ W. 2559719 ft.	Well Name: MW-302
Facility License, Permit or Monitoring No.: 02853	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VV863 DNR Well ID No.:
Facility ID: 460022090	St. Plane 625788.4 ft. N, 2539719.0 ft. E. S/C/N	Date Well Installed: 1/15/2016 (m m d d y y y y)
Type of Well: Well Code 12 / PZ	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 8, T. 14 N, R. 23 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Kevin Durst; Badger State Drilling
Distance from Waste/Source ____ ft.	Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known
		Gov. Lot Number:

A. Protective pipe, top elevation 702.81 ft. MSL

B. Well casing, top elevation 702.57 ft. MSL

C. Land surface elevation 700.24 ft. MSL

D. Surface seal, bottom 699.74 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):
Site supply well

E. Bentonite seal, top 572.24 ft. MSL or 128 ft.

F. Fine sand, top 567.24 ft. MSL or 133 ft.

G. Filter pack, top 565.24 ft. MSL or 135 ft.

H. Screen joint, top 563.24 ft. MSL or 137 ft.

I. Well bottom 558.24 ft. MSL or 142 ft.

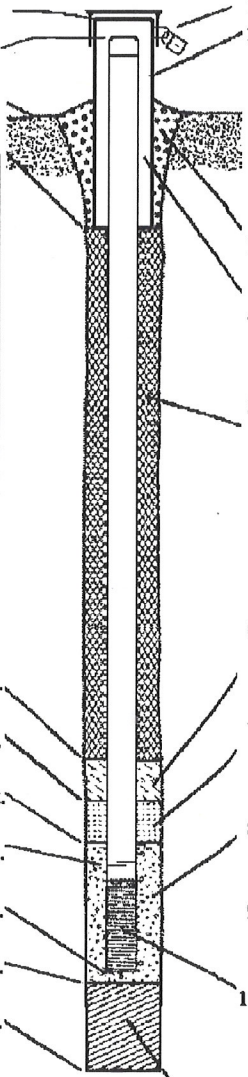
J. Filter pack, bottom 558.24 ft. MSL or 142 ft.

K. Borehole, bottom 552.24 ft. MSL or 148 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.4 in.

N. I.D. well casing 1.9 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 7 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: yes, bumper posts (3)

3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
10 bags 3/8in Bentonite chips

4. Material between well casing and protective pipe: Bentonite ☐ 30; Other ☐
Ohio #5 sand- 2 bags

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. 200 Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 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. 2 Bags Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. 1 bag Ohio #7 ☐
b. Volume added 0.5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 ☐
b. Volume added 3 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☐ 11; Continuous slot ☒ 01; Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None ☐ 14; Other ☒
Limestone Chips

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

Signature: for N.H. | 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.

SCS # 25215135.20

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-I43	Local Grid Location of Well: ☒ N. ☐ S. 625615.5 ft. ☒ E. ☐ W. 2560451 ft.	Well Name: MW-303
Facility License, Permit or Monitoring No.: 02853	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VV865 DNR Well ID No.:
Facility ID: 460022090	St. Plane 625615.5 ft. N, 2560451.0 ft. E. S/C/N	Date Well Installed: 12 / 03 / 2015 (m m d d y y y y)
Type of Well: Well Code 12 / PZ	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 8, T. 14 N, R. 23 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Kevin Durst; Badger State Drilling
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number

A. Protective pipe, top elevation 719.48 ft. MSL
B. Well casing, top elevation 719.25 ft. MSL
C. Land surface elevation 716.60 ft. MSL
D. Surface seal, bottom 716.10 ft. MSL or .50 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

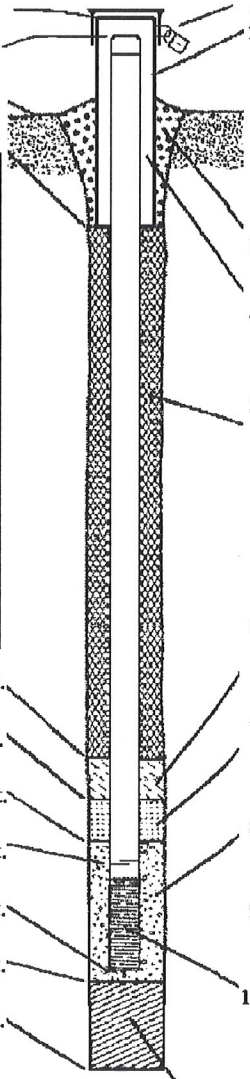
14. Drilling method used: Rotary ☒ 50 Hollow Stem Auger ☒ 41 Other ☐

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): Site supply well

E. Bentonite seal, top 588.60 ft. MSL or 128 ft.
F. Fine sand, top 583.60 ft. MSL or 133 ft.
G. Filter pack, top 581.60 ft. MSL or 135 ft.
H. Screen joint, top 579.60 ft. MSL or 137 ft.
I. Well bottom 574.60 ft. MSL or 142 ft.
J. Filter pack, bottom 574.60 ft. MSL or 142 ft.
K. Borehole, bottom 573.60 ft. MSL or 143 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.4 in.
N. I.D. well casing 1.9 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: yes, bumper 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. 150 Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 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 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5 ☐
b. Volume added 1.50 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 Flush threaded PVC schedule 80 ☒ 24 Other ☐
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐
b. Manufacturer Model flex
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☐ 14 Native Other ☒

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

Signature: for Zach Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

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.

SCS # 25215135.20

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-I43	Local Grid Location of Well: ☒ N. ☐ S. 624204 ft. ☒ E. ☐ W. 2558156 ft.	Well Name: MW-304
Facility License, Permit or Monitoring No.: 02853	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VV866 DNR Well ID No.:
Facility ID: 460022090	St. Plane 624204.0 ft. N, 2558156.0 ft. E. S/C/N	Date Well Installed: 1 / 26 / 2016 (m m d d y y y y)
Type of Well: Well Code 12 / PZ	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 8, T. 14 N, R. 23 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Kevin Duerst; Badger State Drilling
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number

A. Protective pipe, top elevation 692.38 ft. MSL
B. Well casing, top elevation 691.97 ft. MSL
C. Land surface elevation 689.48 ft. MSL
D. Surface seal, bottom 688.98 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

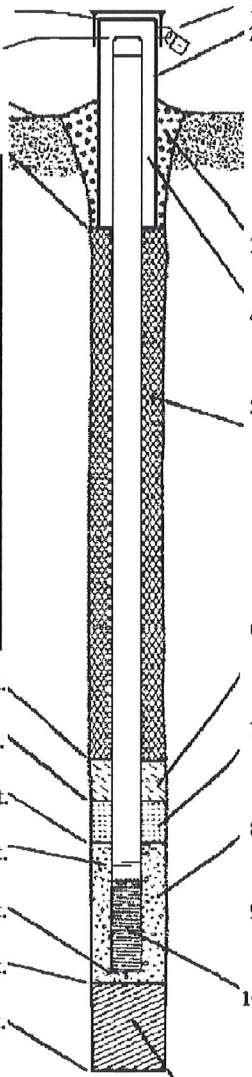
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☒ 41; Other ☐

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):
Site supply well

E. Bentonite seal, top 586.48 ft. MSL or 103 ft.
F. Fine sand, top 581.48 ft. MSL or 108 ft.
G. Filter pack, top 579.48 ft. MSL or 110 ft.
H. Screen joint, top 577.48 ft. MSL or 112 ft.
I. Well bottom 572.48 ft. MSL or 117 ft.
J. Filter pack, bottom 572.48 ft. MSL or 117 ft.
K. Borehole, bottom 571.48 ft. MSL or 118 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.4 in.
N. I.D. well casing 1.9 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: yes, bumper posts
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; sand; Other ☒
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. 200 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. Black Hills Bentonite Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Ohio #5
b. Volume added 0.5 ft³
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #7
b. Volume added 1 ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐

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

Signature: for Joe Larsen
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.

SCS # 2517032.00

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Managemen ☐ Remediation/Redevelopment ☐ Other ☐

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

Facility/Project Name: WPL - Edgewater I43	Local Grid Location of Well: ☐ ft. ☐ N. ☐ S. ☐ ft. ☐ E. ☐ W.	Well Name: MW-305
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VY819 / DNR Well ID No.
Facility ID	St. Plane 623435.13 ft. N, 2559945.85 ft. E. S/C/N	Date Well Installed: 2/2/2017 (m m d d y y y y)
Type of Well: Well Code 12 / PZ	Section Location of Waste/Source: ___ 1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐ E ☐ W	Well Installed By: Name (first, last) and Firm: Kevin Duerst / Badger State Drilling
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number

A. Protective pipe, top elevation 717.88 ft. MSL
B. Well casing, top elevation 717.67 ft. MSL
C. Land surface elevation 715.46 ft. MSL
D. Surface seal, bottom 713.46 ft. MSL or 2 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 ☐ ___

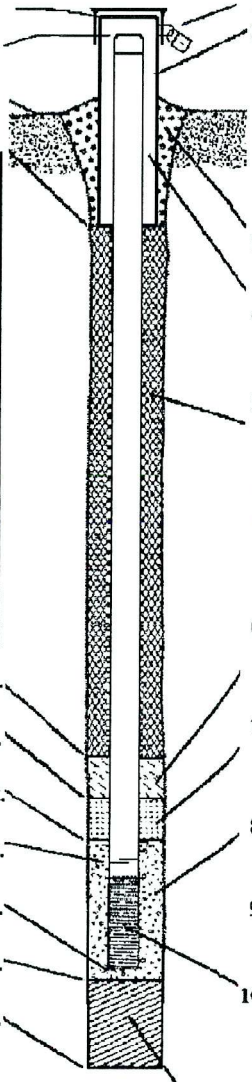
15. Drilling fluid used: Water ☒ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ___

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

E. Bentonite seal, top 609.46 ft. MSL or 106 ft.
F. Fine sand, top 603.46 ft. MSL or 112 ft.
G. Filter pack, top 602.46 ft. MSL or 113 ft.
H. Screen joint, top 600.46 ft. MSL or 115 ft.
I. Well bottom 595.46 ft. MSL or 120 ft.
J. Filter pack, bottom 594.46 ft. MSL or 121 ft.
K. Borehole, bottom 594.46 ft. MSL or 121 ft.
L. Borehole, diameter 6.25 in.
M. O.D. well casing 2.4 in.
N. I.D. well casing 1.9 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 / Other ☐ ___
d. Additional protection? ☒ Yes ☐ No
If yes, describe: yes, bumper posts (3)
3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐ ___
4. Material between well casing and protective pipe: Bentonite ☐ 30 / #5 R.W. Sidley / 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. 9.4 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. 100 lbs Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. #7 R.W. Sidley ☐
b. Volume added 0.5 ft³
8. Filter pack material: Manufacturer, product name & mesh size
a. #5 R.W. Sidley ☐
b. Volume added 1.5 ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ ___
10. Screen material: PVC
a. Screen type: Factory cut ☐ 11 / Continuous slot ☒ 01 / Other ☐ ___
b. Manufacturer Monoflex
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.
11. Backfill material (below filter pack): None ☒ 14 / Other ☐ ___

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

Signature: Kyle Thurn | Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

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.

SCS # 25224159.00

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 - I43 Alliant Energy Center	**Local Grid Location of Well** ☐ N. ☐ S. ____ ft. ☐ E. ☐ W. ____ ft.	**Well Name** MW-306
Facility License, Permit or Monitoring No.	**Local Grid Origin** ☐ (estimated: ☐) or **Well Location** ☒ Lat. 43 ° 41 ' 50.736 " Long. -87 ° 45 ' 56.904 " or	**Wis. Unique Well No.** VS193 ____ ____ ____
Facility ID 460021980 ____ ____ ____ ____	**St. Plane** 626576.4 ft. N, 2559142.7 ft. E. S/C/N	**DNR Well ID No.** ____ ____ ____
Type of Well Well Code 12 / PZ	**Section Location of Waste/Source** SW 1/4 of NE 1/4 of Sec. 8 , T. 14 N, R. 23 ☒ E ☐ W	**Date Well Installed** 06 / 3-5 / 2024 m m d d y y y y
Distance from Waste/ Source ____ ft. **Enf. Stds. Apply** ☐	**Location of Well Relative to Waste/Source** u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☒ Not Known	**Gov. Lot Number** ____
		Well Installed By: Name (first, last) and Firm Adam Sweet Horizon Construction and Explorati

A. Protective pipe, top elevation 693.82 ft. MSL

B. Well casing, top elevation 693.61 ft. MSL

C. Land surface elevation 690.26 ft. MSL

D. Surface seal, bottom 688.6 ft. MSL or 1.7 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
Rotosonic 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):
--PW Horizon Office, Fredonia WI

E. Bentonite seal, top 570.3 ft. MSL or 120.0 ft.

F. Fine sand, top 564.5 ft. MSL or 125.75 ft.

G. Filter pack, top 562.5 ft. MSL or 127.8 ft.

H. Screen joint, top 560.3 ft. MSL or 130.0 ft.

I. Well bottom 555.3 ft. MSL or 135.0 ft.

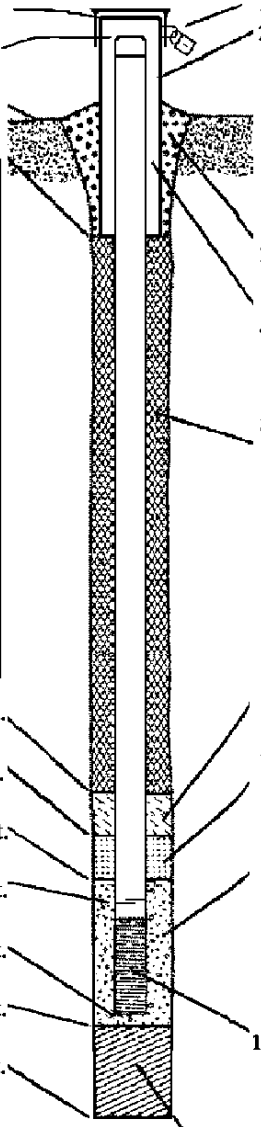
J. Filter pack, bottom 553.3 ft. MSL or 137.0 ft.

K. Borehole, bottom 553.3 ft. MSL or 137.0 ft.

L. Borehole, diameter 6 in.

M. O.D. well casing 2.4 in.

N. I.D. well casing 1.9 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 Other ☐ ____
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Steel bumper posts

3. Surface seal: Bentonite ☒ 30 Concrete ☐ 01 Other ☐ ____
3/8" bentonite chips

4. Material between well casing and protective pipe: Bentonite ☐ 30 Other ☒ ____
Red Flint #40 filter sand

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. 8 % Bentonite . . . . . Bentonite-cement grout ☒ 50
e. 20 Ft^3 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. Red Flint #15 filter sand ☐
b. Volume added 0.5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #40 filter sand ☐
b. Volume added 2.875 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐ ____

10. Screen material: Schedule 80 PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐ ____
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None ☒ 14
Other ☐ ____

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

Signature	Firm
Bridget Arnell	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.

SCS # 25215135.20

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Alliant Energy I-43	Sheboygan	MW-301

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	59	VV-864	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 190 min.

4. Depth of well (from top of well casisng) 132.9 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 18.2 gal.

7. Volume of water removed from well 315. gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 46.49 ft.	46.34 ft.
Date	b. 02/16/2016 (m m d d y y y y)	02/16/2016 (m m d d y y y y)
Time	c. 12:50 ☐ a.m. ☒ p.m.	16:00 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	---.- inches	---.- inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)
	Medium brown color Very turbid	Medium brown color Slightly to moderately turbid

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: Nate Last Name: Harms
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Jim Last Name: Jakubiak
Facility/Firm: WP&L Alliant Energy
Street: 3739 Lakeshore Drive
City/State/Zip: Sheboygan, WI 53082

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

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

SCS # 25215135.20

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Alliant Energy I-43	Sheboygan	MW-302

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	59	VV-863	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 145 min.

4. Depth of well (from top of well casisng) 143.8 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 19.3 gal.

7. Volume of water removed from well 296. gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 51.23 ft.	51.24 ft.
Date	b. 02/16/2016 (m m d d y y y y)	02/16/2016
Time	c. 11:55 ☒ a.m. ☐ p.m.	14:20 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Medium brown color Very turbid	Medium brown color Very slight turbidity
14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

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

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

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Jim Last Name: Jakubiak
Facility/Firm: WP&L Alliant Energy
Street: 3739 Lakeshore Drive
City/State/Zip: Sheboygan, WI 53082

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

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

SCS # 25215135.20

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Alliant Energy I-43	Sheboygan	MW-303

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	59	VV-865	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 150 min.

4. Depth of well (from top of well casisng) 145.7 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 18.4 gal.

7. Volume of water removed from well 250. gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 67.86 ft.	67.86 ft.
Date	b. 02/16/2016 (m m d d y y y y)	02/16/2016
Time	c. 15:10 ☐ a.m. ☒ p.m.	17:40 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Medium brown color, Very turbid	Clear ☒ 20 Turbid ☐ 25 (Describe) Light brown color, very slight turbidity

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: Nate Last Name: Harms
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Jim Last Name: Jakubiak
Facility/Firm: WP&L Alliant Energy
Street: 3739 Lakeshore Drive
City/State/Zip: Sheboygan, WI 53082

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

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

SCS # 25215135.20

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Alliant Energy I-43	Sheboygan	MW-304

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	59	VV-866	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐ __

3. Time spent developing well 120 min.

4. Depth of well (from top of well casisng) 145.7 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 18.4 gal.

7. Volume of water removed from well 240. gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 39.15 ft.	39.39 ft.
Date	b. 02/16/2016	02/16/2016
Time	c. 16:40 ☐ a.m. ☒ p.m.	18:40 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)
	Medium brown color	Water mostly clear
	Very turbid	Very slight turbidity

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: Nate Last Name: Harms
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Jim Last Name: Jakubiak
Facility/Firm: WP&L Alliant Energy
Street: 3739 Lakeshore Drive
City/State/Zip: Sheboygan, WI 53082

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

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

SCS # 25217032.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
WPL-I-43	Sheyboygan	MW-305

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
02853	59	VY819	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 162 min.

4. Depth of well (from top of well casisng) 122.97 ft.

5. Inside diameter of well 1.9 in.

6. Volume of water in filter pack and well casing 14.16 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? (If yes, attach results) ☐ Yes ☐ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 59.56 ft.	59.46 ft.
Date	b. 2/7/2017 (m m d d y y y y)	2/7/2017
Time	c. 11:00 ☒ a.m. ☐ p.m.	2:05 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	.__ inches	.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Brown	Clear ☒ 20 Turbid ☐ 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. Well developed by: Name (first, last) and Firm
First Name: Kyle Last Name: Kramer
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
Water clarity was clear before ten well volumes.

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: [signature]
Print Name: Kyle Kramer
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

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

SCS # 25224159.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
WPL Edgewater I-43 Ash Disposal Facility	Sheboygan	MW-306

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
02853	60	VS193	

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☒ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 90 min.

4. Depth of well (from top of well casisng) 134.9 ft.

5. Inside diameter of well 1 9 in.

6. Volume of water in filter pack and well casing 16 8 gal.

7. Volume of water removed from well 20 gal.

8. Volume of water added (if any) 0 gal.

9. Source of water added N/A

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 40 ft.	133 ft.
Date	b. 07/19/2024 (m m d d y y y y)	07/19/2024
Time	c. 9:00 ☒ a.m. ☐ p.m.	11:30 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	0 inches	0 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Very turbid (milky)	Clear ☐ 20 Turbid ☒ 25 (Describe) Less turbid
14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

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

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

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: Alliant Energy / WPL
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: William Ouimet
Print Name: Will Ouimet
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

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

Appendix C

Laboratory Reports

C1 October 2023 Detection Monitoring

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

October 27, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

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

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40269478001	**MW-301**	Water	10/09/23 12:50	10/12/23 09:05
40269478002	**MW-302**	Water	10/09/23 14:10	10/12/23 09:05
40269478003	**MW-303**	Water	10/09/23 11:40	10/12/23 09:05
40269478004	**MW-304**	Water	10/09/23 10:50	10/12/23 09:05
40269478005	**MW-305**	Water	10/09/23 09:50	10/12/23 09:05
40269478006	**FIELD BLANK**	Water	10/09/23 12:10	10/12/23 09:05

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40269478001	**MW-301**	EPA 6020B	KXS	2
			AG1	7
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40269478002	**MW-302**	EPA 6020B	KXS	2
			AG1	7
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40269478003	**MW-303**	EPA 6020B	KXS	2
			AG1	7
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40269478004	**MW-304**	EPA 6020B	KXS	2
			AG1	7
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40269478005	**MW-305**	EPA 6020B	KXS	2
			AG1	7
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40269478006	**FIELD BLANK**	EPA 6020B	KXS	2
		SM 2540C	TMK	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

Sample: MW-301 **Lab ID: 40269478001** Collected: 10/09/23 12:50 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	**128**	ug/L	10.0	3.0	1	10/17/23 05:40	10/19/23 22:06	7440-42-8	
Calcium	**26600**	ug/L	254	76.2	1	10/17/23 05:40	10/19/23 22:06	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**8.07**	Std. Units			1		10/09/23 12:50		
Field Specific Conductance	**359**	umhos/cm			1		10/09/23 12:50		
Oxygen, Dissolved	**0.87**	mg/L			1		10/09/23 12:50	7782-44-7	
REDOX	**433.2**	mV			1		10/09/23 12:50		
Turbidity	**45.4**	NTU			1		10/09/23 12:50		
Static Water Level	**648.65**	feet			1		10/09/23 12:50		
Temperature, Water (C)	**10.3**	deg C			1		10/09/23 12:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**200**	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	**8.0**	Std. Units	0.10	0.010	1		10/13/23 15:02		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**3.5**	mg/L	2.0	0.59	1		10/26/23 03:31	16887-00-6	
Fluoride	**0.67**	mg/L	0.32	0.095	1		10/26/23 03:31	16984-48-8	
Sulfate	**12.1**	mg/L	2.0	0.44	1		10/26/23 03:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

Sample: MW-302 **Lab ID: 40269478002** Collected: 10/09/23 14:10 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	**129**	ug/L	10.0	3.0	1	10/17/23 05:40	10/19/23 22:11	7440-42-8	
Calcium	**27900**	ug/L	254	76.2	1	10/17/23 05:40	10/19/23 22:11	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**8.03**	Std. Units			1		10/09/23 14:10		
Field Specific Conductance	**381**	umhos/cm			1		10/09/23 14:10		
Oxygen, Dissolved	**0.79**	mg/L			1		10/09/23 14:10	7782-44-7	
REDOX	**311.9**	mV			1		10/09/23 14:10		
Turbidity	**4.36**	NTU			1		10/09/23 14:10		
Static Water Level	**648.67**	feet			1		10/09/23 14:10		
Temperature, Water (C)	**10.9**	deg C			1		10/09/23 14:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**222**	mg/L	20.0	8.7	1		10/15/23 21:54		
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		10/13/23 15:06		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**3.9**	mg/L	2.0	0.59	1		10/26/23 03:46	16887-00-6	
Fluoride	**0.77**	mg/L	0.32	0.095	1		10/26/23 03:46	16984-48-8	
Sulfate	**16.5**	mg/L	2.0	0.44	1		10/26/23 03:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

Sample: MW-303 **Lab ID: 40269478003** Collected: 10/09/23 11:40 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	**84.4**	ug/L	10.0	3.0	1	10/17/23 05:40	10/19/23 22:16	7440-42-8	
Calcium	**27400**	ug/L	254	76.2	1	10/17/23 05:40	10/19/23 22:16	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.96**	Std. Units			1		10/09/23 11:40		
Field Specific Conductance	**446**	umhos/cm			1		10/09/23 11:40		
Oxygen, Dissolved	**2.77**	mg/L			1		10/09/23 11:40	7782-44-7	
REDOX	**472.7**	mV			1		10/09/23 11:40		
Turbidity	**1.22**	NTU			1		10/09/23 11:40		
Static Water Level	**648.65**	feet			1		10/09/23 11:40		
Temperature, Water (C)	**10.2**	deg C			1		10/09/23 11:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**266**	mg/L	20.0	8.7	1		10/15/23 21:54		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.010	1		10/13/23 15:08		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**5.3J**	mg/L	10.0	3.0	5		10/26/23 04:00	16887-00-6	D3
Fluoride	**0.76J**	mg/L	1.6	0.48	5		10/26/23 04:00	16984-48-8	D3
Sulfate	**26.7**	mg/L	10.0	2.2	5		10/26/23 04:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

Sample: MW-304 **Lab ID: 40269478004** Collected: 10/09/23 10:50 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	**92.1**	ug/L	10.0	3.0	1	10/17/23 05:40	10/19/23 22:21	7440-42-8	
Calcium	**20700**	ug/L	254	76.2	1	10/17/23 05:40	10/19/23 22:21	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**8.08**	Std. Units			1		10/09/23 10:50		
Field Specific Conductance	**293**	umhos/cm			1		10/09/23 10:50		
Oxygen, Dissolved	**4.63**	mg/L			1		10/09/23 10:50	7782-44-7	
REDOX	**307.6**	mV			1		10/09/23 10:50		
Turbidity	**55.7**	NTU			1		10/09/23 10:50		
Static Water Level	**650.24**	feet			1		10/09/23 10:50		
Temperature, Water (C)	**9.5**	deg C			1		10/09/23 10:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**220**	mg/L	20.0	8.7	1		10/15/23 21:54		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.010	1		10/13/23 15:11		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**2.5**	mg/L	2.0	0.59	1		10/26/23 04:14	16887-00-6	
Fluoride	**0.55**	mg/L	0.32	0.095	1		10/26/23 04:14	16984-48-8	
Sulfate	**16.4**	mg/L	2.0	0.44	1		10/26/23 04:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

Sample: MW-305 **Lab ID: 40269478005** Collected: 10/09/23 09:50 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	**64.5**	ug/L	10.0	3.0	1	10/17/23 05:40	10/19/23 22:26	7440-42-8	
Calcium	**85800**	ug/L	254	76.2	1	10/17/23 05:40	10/19/23 22:26	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.56**	Std. Units			1		10/09/23 09:50		
Field Specific Conductance	**877**	umhos/cm			1		10/09/23 09:50		
Oxygen, Dissolved	**0.46**	mg/L			1		10/09/23 09:50	7782-44-7	
REDOX	**236.7**	mV			1		10/09/23 09:50		
Turbidity	**5.65**	NTU			1		10/09/23 09:50		
Static Water Level	**654.22**	feet			1		10/09/23 09:50		
Temperature, Water (C)	**9.6**	deg C			1		10/09/23 09:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**604**	mg/L	20.0	8.7	1		10/15/23 21:54		
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 15:14		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**29.6**	mg/L	20.0	5.9	10		10/26/23 04:29	16887-00-6	
Fluoride	**<0.95**	mg/L	3.2	0.95	10		10/26/23 04:29	16984-48-8	D3
Sulfate	**137**	mg/L	20.0	4.4	10		10/26/23 04:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

Sample: FIELD BLANK **Lab ID: 40269478006** Collected: 10/09/23 12:10 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	10/20/23 23:27	7440-42-8	
Calcium	**<76.2**	ug/L	254	76.2	1	10/17/23 05:40	10/20/23 23:27	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 21:55		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.7**	Std. Units	0.10	0.010	1		10/13/23 15:23		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**0.69J**	mg/L	2.0	0.59	1		10/26/23 05:57	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		10/26/23 05:57	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		10/26/23 05:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

QC Batch: 457666
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269478001, 40269478002, 40269478003, 40269478004, 40269478005, 40269478006

METHOD BLANK: 2628354 Matrix: Water
Associated Lab Samples: 40269478001, 40269478002, 40269478003, 40269478004, 40269478005, 40269478006

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	40269463001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	33.5	250	250	288	286	102	101	75-125	1	20	
Calcium	ug/L	156000	10000	10000	181000	164000	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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

QC Batch: 457507
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269478001, 40269478002, 40269478003, 40269478004, 40269478005, 40269478006

METHOD BLANK: 2627853 Matrix: Water
Associated Lab Samples: 40269478001, 40269478002, 40269478003, 40269478004, 40269478005, 40269478006

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	

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

QC Batch: 457433
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269478001, 40269478002, 40269478003, 40269478004, 40269478005, 40269478006

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

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

QC Batch: 458394
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269478001, 40269478002, 40269478003, 40269478004, 40269478005

METHOD BLANK: 2632613 Matrix: Water
Associated Lab Samples: 40269478001, 40269478002, 40269478003, 40269478004, 40269478005

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 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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	

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

QC Batch: 458607
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269478006

METHOD BLANK: 2633793 Matrix: Water
Associated Lab Samples: 40269478006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	10/26/23 05:27	
Fluoride	mg/L	<0.095	0.32	10/26/23 05:27	
Sulfate	mg/L	<0.44	2.0	10/26/23 05:27	

LABORATORY CONTROL SAMPLE: 2633794

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.2	101	90-110	
Fluoride	mg/L	2	2.1	104	90-110	
Sulfate	mg/L	20	19.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2633795 2633796

Parameter	Units	40269506002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	71.3	100	100	171	166	100	95	90-110	3	15	
Fluoride	mg/L	<0.095	2	2	2.3	2.3	110	112	90-110	1	15	M0
Sulfate	mg/L	90.7	100	100	190	182	99	91	90-110	4	15	

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

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.
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.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25223069 EDGEWATER I-43 CCR
Pace Project No.: 40269478

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40269478001	**MW-301**	EPA 3010A	457666	EPA 6020B	457761
40269478002	**MW-302**	EPA 3010A	457666	EPA 6020B	457761
40269478003	**MW-303**	EPA 3010A	457666	EPA 6020B	457761
40269478004	**MW-304**	EPA 3010A	457666	EPA 6020B	457761
40269478005	**MW-305**	EPA 3010A	457666	EPA 6020B	457761
40269478006	**FIELD BLANK**	EPA 3010A	457666	EPA 6020B	457761
40269478001	**MW-301**				
40269478002	**MW-302**				
40269478003	**MW-303**				
40269478004	**MW-304**				
40269478005	**MW-305**				
40269478001	**MW-301**	SM 2540C	457507		
40269478002	**MW-302**	SM 2540C	457507		
40269478003	**MW-303**	SM 2540C	457507		
40269478004	**MW-304**	SM 2540C	457507		
40269478005	**MW-305**	SM 2540C	457507		
40269478006	**FIELD BLANK**	SM 2540C	457507		
40269478001	**MW-301**	EPA 9040	457433		
40269478002	**MW-302**	EPA 9040	457433		
40269478003	**MW-303**	EPA 9040	457433		
40269478004	**MW-304**	EPA 9040	457433		
40269478005	**MW-305**	EPA 9040	457433		
40269478006	**FIELD BLANK**	EPA 9040	457433		
40269478001	**MW-301**	EPA 300.0	458394		
40269478002	**MW-302**	EPA 300.0	458394		
40269478003	**MW-303**	EPA 300.0	458394		
40269478004	**MW-304**	EPA 300.0	458394		
40269478005	**MW-305**	EPA 300.0	458394		
40269478006	**FIELD BLANK**	EPA 300.0	458607		

40269478

Pace

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: SCS ENGINEERS	Report To: Meghan Blodgett	Attention:	
Address: 2830 Dairy Drive	Copy To:	Company Name:	Regulatory Agency
Madison, WI 53718		Address:	
Email: mblodgett@scsengineers.com	Purchase Order #:	Pace Quote:	
Phone: 608-216-7362 Fax:	Project Name: 25223069 I-43	Pace Project Manager: dan.mlewsky@pacelabs.com,	State / Location
Requested Due Date: Standard TAT	Project #: 25223069	Pace Profile #:	WI

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total (B, Ca)	Chloride, Fluoride, Sulfate, Total	TDS	pH	Residual Chlorine (Y/N)	
	MATRIX CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Requested Analysis Filtered (Y/N)	N	N	N	N		
1	MW-301	WT		10/4	12:30				5	2	1	2							X	X	X	X		001
2	MW-302	WT			14:10														X	X	X	X		002
3	MW-303	WT			11:40														X	X	X	X		003
4	MW-304	WT			10:50														X	X	X	X		004
5	MW-305	WT			9:50														X	X	X	X		005
6	Field Blank	WT			12:10														X	X	X	X		006
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	William Ouat SCS	10/11	16:00							
	CS Logistics	10-12-23	0805	Robert Pace	10-12-23	0805	0.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: William Ouat

SIGNATURE of SAMPLER: William Ouat DATE Signed: 10/11/23

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Client Name: SCS Engineers

Sample Preservation Receipt Form

Project # 402.69478

All containers needing preservation have been checked and noted below ☒Yes ☐No ☐N/A

Lab Lot# of pH paper. 101723 Lab Std #ID of preservation (if pH adjusted).

Initial when completed RA Date/ Time:

Pace Lab #	Glass							Plastic						Vials						Jars				General				VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN 1	GN 2							
001									2		2	—																	X			X		2.5 / 5
002									2		2	—																	X			X		2.5 / 5
003						AG 10/17/23			2		2	—																	X			X		2.5 / 5
004									2		2	—																	X			X		2.5 / 5
005									2		2	—																	X			X		2.5 / 5
006									2		2	—																	X			X		2.5 / 5
007																																		2.5 / 5
008																																		2.5 / 5
009																																		2.5 / 5
010																																		2.5 / 5
011																																		2.5 / 5
012																																		2.5 / 5
013																																		2.5 / 5
014																																		2.5 / 5
015																																		2.5 / 5
016																																		2.5 / 5
017																																		2.5 / 5
018																																		2.5 / 5
019																																		2.5 / 5
020																																		2.5 / 5

RA 10-12-23

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other_____ Headspace in VOA Vials (>6mm) ☐Yes ☐No ☒N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40269478

40269478

Client Name: SCS Engineers

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 - 121 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 0.5 /Corr: 0.0

Temp Blank Present: ☒ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Person examining contents:
Date: 01-27-23 Initials: RA

Labeled By Initials: RS

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

C2 November 2023 Detection Monitoring

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

December 07, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25222084.00 ALLIANT WPL 1-43
Pace Project No.: 40271104

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on November 16, 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

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 25222084.00 ALLIANT WPL 1-43
Pace Project No.: 40271104

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 25222084.00 ALLIANT WPL 1-43
Pace Project No.: 40271104

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40271104001	**MW-302**	Water	11/14/23 16:35	11/16/23 08:50
40271104002	**FIELD BLANK**	Water	11/14/23 19:13	11/16/23 08:50

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 25222084.00 ALLIANT WPL 1-43
Pace Project No.: 40271104

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40271104001	**MW-302**		AG1	6
		EPA 300.0	HMB	1
40271104002	**FIELD BLANK**	EPA 300.0	HMB	1

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25222084.00 ALLIANT WPL 1-43
Pace Project No.: 40271104

Sample: MW-302 **Lab ID: 40271104001** Collected: 11/14/23 16:35 Received: 11/16/23 08:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**8.00**	Std. Units			1		11/14/23 16:35		
Field Specific Conductance	**391.3**	umhos/cm			1		11/14/23 16:35		
Oxygen, Dissolved	**0.70**	mg/L			1		11/14/23 16:35	7782-44-7	
REDOX	**-79.9**	mV			1		11/14/23 16:35		
Static Water Level	**649.97**	feet			1		11/14/23 16:35		
Temperature, Water (C)	**9.6**	deg C			1		11/14/23 16:35		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Fluoride	**0.77**	mg/L	0.32	0.095	1		12/04/23 15:55	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25222084.00 ALLIANT WPL 1-43
Pace Project No.: 40271104

Sample: FIELD BLANK **Lab ID: 40271104002** Collected: 11/14/23 19:13 Received: 11/16/23 08:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Fluoride	**<0.095**	mg/L	0.32	0.095	1		12/04/23 16:10	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25222084.00 ALLIANT WPL 1-43
Pace Project No.: 40271104

QC Batch: 461655
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40271104001, 40271104002

METHOD BLANK: 2650084 Matrix: Water
Associated Lab Samples: 40271104001, 40271104002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	<0.095	0.32	12/04/23 11:28	

LABORATORY CONTROL SAMPLE: 2650085

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.1	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650086 2650087

Parameter	Units	40271061001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	<47.5	1000	1000	977	960	98	96	90-110	2	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650088 2650089

Parameter	Units	40271138003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	<4.8	100	100	110	110	110	110	90-110	0	15	

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 25222084.00 ALLIANT WPL 1-43
Pace Project No.: 40271104

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.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25222084.00 ALLIANT WPL 1-43
Pace Project No.: 40271104

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40271104001	**MW-302**				
40271104001	**MW-302**	EPA 300.0	461655		
40271104002	**FIELD BLANK**	EPA 300.0	461655		

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 40271104

ALL SHADED AREAS are for LAB USE ONLY

Company: SCS Engineers	Billing Information: Same
Address: 2830 Dairy Dr, Madison, WI 53718	
Report To: Meghan Blodgett	Email To: mblodgett@scsengineers.com
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: Alliant / WPL 1-43 25222084.00	State: WI County/City: Sheboygan Time Zone Collected: [ ] PT [ ] MT [X] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): BRS	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
	Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Container Preservative Type **: U

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses: Fluoride

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY:
Lab Sample # / Comments:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Fluoride	Lab Sample # / Comments
MW-302	gw	grab	11/14	1635				1	X	001
Field Blank			11/14	1913				1	X	002

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2890931

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: oC
Cooler 1 Therm Corr. Factor: oC
Cooler 1 Corrected Temp: oC
Comments:

Relinquished by/Company: (Signature) SCS	Date/Time: 11/15/2023 1300	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time: 11/16/23 0800	Received by/Company: (Signature)	Date/Time: 11/16/23 0800
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Client Name: SES Engineers

All containers needing preservation have been checked and noted below

Sample Preservation Receipt Form

Project # 40271104

☐Yes ☐No ☐N/A

Lab Lot# of pH paper.

Lab Std #ID of preservation (if pH adjusted).

Initial when completed:

Date/ Time.

Pace Lab #	Glass							Plastic						Vials						Jars				General				VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN 1	GN 2							
001									1																								2.5 / 5
002																																	2.5 / 5
003																																	2.5 / 5
004																																	2.5 / 5
005																																	2.5 / 5
006																																	2.5 / 5
007																																	2.5 / 5
008																																	2.5 / 5
009																																	2.5 / 5
010																																	2.5 / 5
011																																	2.5 / 5
012																																	2.5 / 5
013																																	2.5 / 5
014																																	2.5 / 5
015																																	2.5 / 5
016																																	2.5 / 5
017																																	2.5 / 5
018																																	2.5 / 5
019																																	2.5 / 5
020																																	2.5 / 5

1/16/23 SG

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:

Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☐N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO#: 40271104

40271104

Client Name: SLS Engineers

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 - 139 **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: 11/16/23 Initials: SG

Labeled By Initials: JN

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

Page 2 of 2

C3 April 2024 Detection Monitoring

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

May 06, 2024

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

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

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

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40277042001	**MW-301**	Water	04/15/24 14:45	04/18/24 08:40
40277042002	**MW-302**	Water	04/15/24 13:35	04/18/24 08:40
40277042003	**MW-303**	Water	04/15/24 12:35	04/18/24 08:40
40277042004	**MW-304**	Water	04/15/24 11:25	04/18/24 08:40
40277042005	**MW-305**	Water	04/15/24 10:15	04/18/24 08:40
40277042006	**FIELD BLANK**	Water	04/15/24 14:50	04/18/24 08:40

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40277042001	**MW-301**	EPA 6020B	TXW	2
			AG1	7
		SM 2540C	LMB	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40277042002	**MW-302**	EPA 6020B	TXW	2
			AG1	7
		SM 2540C	LMB	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40277042003	**MW-303**	EPA 6020B	TXW	2
			AG1	7
		SM 2540C	LMB	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40277042004	**MW-304**	EPA 6020B	TXW	2
			AG1	7
		SM 2540C	LMB	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40277042005	**MW-305**	EPA 6020B	TXW	2
			AG1	7
		SM 2540C	LMB	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3
40277042006	**FIELD BLANK**	EPA 6020B	TXW	2
		SM 2540C	LMB	1
		EPA 9040	HML	1
		EPA 300.0	HMB	3

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

Sample: MW-301 **Lab ID: 40277042001** Collected: 04/15/24 14:45 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	**131**	ug/L	100	30.3	10	04/22/24 06:49	04/28/24 17:10	7440-42-8	
Calcium	**24400**	ug/L	2540	762	10	04/22/24 06:49	04/28/24 17:10	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.62**	Std. Units			1		04/15/24 14:45		
Field Specific Conductance	**353**	umhos/cm			1		04/15/24 14:45		
Oxygen, Dissolved	**1.84**	mg/L			1		04/15/24 14:45	7782-44-7	
REDOX	**472.8**	mV			1		04/15/24 14:45		
Turbidity	**14.5**	NTU			1		04/15/24 14:45		
Static Water Level	**652.95**	feet			1		04/15/24 14:45		
Temperature, Water (C)	**12.5**	deg C			1		04/15/24 14:45		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**206**	mg/L	20.0	8.7	1		04/19/24 11:14		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**8.5**	Std. Units	0.10	0.010	1		05/02/24 11:40		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**3.3**	mg/L	2.0	0.59	1		05/01/24 19:32	16887-00-6	M0
Fluoride	**0.64**	mg/L	0.32	0.095	1		05/01/24 19:32	16984-48-8	M0
Sulfate	**11.0**	mg/L	2.0	0.44	1		05/01/24 19:32	14808-79-8	M0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

Sample: MW-302 **Lab ID: 40277042002** Collected: 04/15/24 13:35 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								
Boron	**123**	ug/L	10.0	3.0	1	04/22/24 06:49	04/28/24 17:42	7440-42-8	
Calcium	**26500**	ug/L	254	76.2	1	04/22/24 06:49	04/28/24 17:42	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.71**	Std. Units			1		04/15/24 13:35		
Field Specific Conductance	**414**	umhos/cm			1		04/15/24 13:35		
Oxygen, Dissolved	**0.79**	mg/L			1		04/15/24 13:35	7782-44-7	
REDOX	**455.7**	mV			1		04/15/24 13:35		
Turbidity	**2.70**	NTU			1		04/15/24 13:35		
Static Water Level	**652.93**	feet			1		04/15/24 13:35		
Temperature, Water (C)	**11.4**	deg C			1		04/15/24 13:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**246**	mg/L	20.0	8.7	1		04/19/24 11:14		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**8.5**	Std. Units	0.10	0.010	1		05/02/24 11:49		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**4.2**	mg/L	2.0	0.59	1		05/01/24 20:15	16887-00-6	
Fluoride	**0.74**	mg/L	0.32	0.095	1		05/01/24 20:15	16984-48-8	
Sulfate	**24.8**	mg/L	2.0	0.44	1		05/01/24 20:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

Sample: MW-303 **Lab ID: 40277042003** Collected: 04/15/24 12:35 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								
Boron	**88.4**	ug/L	10.0	3.0	1	04/22/24 06:49	04/28/24 17:53	7440-42-8	
Calcium	**28400**	ug/L	254	76.2	1	04/22/24 06:49	04/28/24 17:53	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.67**	Std. Units			1		04/15/24 12:35		
Field Specific Conductance	**439**	umhos/cm			1		04/15/24 12:35		
Oxygen, Dissolved	**3.35**	mg/L			1		04/15/24 12:35	7782-44-7	
REDOX	**556.9**	mV			1		04/15/24 12:35		
Turbidity	**2.04**	NTU			1		04/15/24 12:35		
Static Water Level	**652.96**	feet			1		04/15/24 12:35		
Temperature, Water (C)	**13.0**	deg C			1		04/15/24 12:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**262**	mg/L	20.0	8.7	1		04/19/24 11:14		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**8.5**	Std. Units	0.10	0.010	1		05/02/24 11:57		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**3.9**	mg/L	2.0	0.59	1		05/01/24 20:29	16887-00-6	
Fluoride	**0.63**	mg/L	0.32	0.095	1		05/01/24 20:29	16984-48-8	
Sulfate	**24.4**	mg/L	2.0	0.44	1		05/01/24 20:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

Sample: MW-304 **Lab ID: 40277042004** Collected: 04/15/24 11:25 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	**90.3**	ug/L	10.0	3.0	1	04/22/24 06:49	04/28/24 17:58	7440-42-8	
Calcium	**21000**	ug/L	254	76.2	1	04/22/24 06:49	04/28/24 17:58	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.62**	Std. Units			1		04/15/24 11:25		
Field Specific Conductance	**398**	umhos/cm			1		04/15/24 11:25		
Oxygen, Dissolved	**1.29**	mg/L			1		04/15/24 11:25	7782-44-7	
REDOX	**385.5**	mV			1		04/15/24 11:25		
Turbidity	**9.05**	NTU			1		04/15/24 11:25		
Static Water Level	**654.82**	feet			1		04/15/24 11:25		
Temperature, Water (C)	**12.7**	deg C			1		04/15/24 11:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**234**	mg/L	20.0	8.7	1		04/19/24 11:15		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**8.5**	Std. Units	0.10	0.010	1		05/02/24 12:02		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**2.7**	mg/L	2.0	0.59	1		05/01/24 20:44	16887-00-6	
Fluoride	**0.49**	mg/L	0.32	0.095	1		05/01/24 20:44	16984-48-8	
Sulfate	**16.8**	mg/L	2.0	0.44	1		05/01/24 20:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

Sample: MW-305 **Lab ID: 40277042005** Collected: 04/15/24 10:15 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	**63.4**	ug/L	10.0	3.0	1	04/22/24 06:49	04/28/24 18:04	7440-42-8	
Calcium	**87400**	ug/L	254	76.2	1	04/22/24 06:49	04/28/24 18:04	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.34**	Std. Units			1		04/15/24 10:15		
Field Specific Conductance	**884**	umhos/cm			1		04/15/24 10:15		
Oxygen, Dissolved	**1.64**	mg/L			1		04/15/24 10:15	7782-44-7	
REDOX	**395.1**	mV			1		04/15/24 10:15		
Turbidity	**4.30**	NTU			1		04/15/24 10:15		
Static Water Level	**658.53**	feet			1		04/15/24 10:15		
Temperature, Water (C)	**11.3**	deg C			1		04/15/24 10:15		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**578**	mg/L	20.0	8.7	1		04/19/24 11:15		
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		04/25/24 17:41		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**30.7**	mg/L	2.0	0.59	1		05/01/24 21:41	16887-00-6	
Fluoride	**0.66**	mg/L	0.32	0.095	1		05/01/24 21:41	16984-48-8	
Sulfate	**134**	mg/L	20.0	4.4	10		05/02/24 12:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

Sample: FIELD BLANK **Lab ID: 40277042006** Collected: 04/15/24 14:50 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	**<3.0**	ug/L	10.0	3.0	1	04/22/24 06:49	04/28/24 16:44	7440-42-8	
Calcium	**<76.2**	ug/L	254	76.2	1	04/22/24 06:49	04/28/24 16:44	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		04/19/24 11:15		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.5**	Std. Units	0.10	0.010	1		05/02/24 12:10		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 21:55	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		05/01/24 21:55	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		05/01/24 21:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

QC Batch: 472228
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40277042001, 40277042002, 40277042003, 40277042004, 40277042005, 40277042006

METHOD BLANK: 2705023 Matrix: Water
Associated Lab Samples: 40277042001, 40277042002, 40277042003, 40277042004, 40277042005, 40277042006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.0	10.0	04/28/24 16:38	
Calcium	ug/L	<76.2	254	04/28/24 16:38	

LABORATORY CONTROL SAMPLE: 2705024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	250	254	102	80-120	
Calcium	ug/L	10000	10800	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2705025 2705026

Parameter	Units	40277042001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	131	250	250	391	377	104	98	75-125	4	20	
Calcium	ug/L	24400	10000	10000	33300	34000	90	96	75-125	2	20	

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

QC Batch: 472147 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40277042001, 40277042002, 40277042003, 40277042004, 40277042005, 40277042006

METHOD BLANK: 2704006 Matrix: Water
Associated Lab Samples: 40277042001, 40277042002, 40277042003, 40277042004, 40277042005, 40277042006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	04/19/24 11:10	

LABORATORY CONTROL SAMPLE: 2704007

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	616	514	83	80-120	

SAMPLE DUPLICATE: 2704022

Parameter	Units	40276937002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	270	275	2	10	

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

QC Batch: 472742
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40277042005

SAMPLE DUPLICATE: 2707549

Parameter	Units	40277129001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.3	8.2	0	20	H6

SAMPLE DUPLICATE: 2707648

Parameter	Units	40277312001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.3	8.3	1	20	H6

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

QC Batch: 473366
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40277042001, 40277042002

SAMPLE DUPLICATE: 2711045

Parameter	Units	40277042001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.5	8.5	0	20	H6

SAMPLE DUPLICATE: 2711046

Parameter	Units	40277314001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	20	

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

QC Batch: 473367
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40277042003, 40277042004, 40277042006

SAMPLE DUPLICATE: 2711047

Parameter	Units	40277042003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.5	8.5	0	20	H6

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

QC Batch: 473184
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40277042001, 40277042002, 40277042003, 40277042004, 40277042005, 40277042006

METHOD BLANK: 2710056 Matrix: Water
Associated Lab Samples: 40277042001, 40277042002, 40277042003, 40277042004, 40277042005, 40277042006

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 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max 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 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max 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

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

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

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.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2522069 EDGEWATER CCR (I-43)
Pace Project No.: 40277042

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40277042001	**MW-301**	EPA 3010A	472228	EPA 6020B	472330
40277042002	**MW-302**	EPA 3010A	472228	EPA 6020B	472330
40277042003	**MW-303**	EPA 3010A	472228	EPA 6020B	472330
40277042004	**MW-304**	EPA 3010A	472228	EPA 6020B	472330
40277042005	**MW-305**	EPA 3010A	472228	EPA 6020B	472330
40277042006	**FIELD BLANK**	EPA 3010A	472228	EPA 6020B	472330
40277042001	**MW-301**				
40277042002	**MW-302**				
40277042003	**MW-303**				
40277042004	**MW-304**				
40277042005	**MW-305**				
40277042001	**MW-301**	SM 2540C	472147		
40277042002	**MW-302**	SM 2540C	472147		
40277042003	**MW-303**	SM 2540C	472147		
40277042004	**MW-304**	SM 2540C	472147		
40277042005	**MW-305**	SM 2540C	472147		
40277042006	**FIELD BLANK**	SM 2540C	472147		
40277042001	**MW-301**	EPA 9040	473366		
40277042002	**MW-302**	EPA 9040	473366		
40277042003	**MW-303**	EPA 9040	473367		
40277042004	**MW-304**	EPA 9040	473367		
40277042005	**MW-305**	EPA 9040	472742		
40277042006	**FIELD BLANK**	EPA 9040	473367		
40277042001	**MW-301**	EPA 300.0	473184		
40277042002	**MW-302**	EPA 300.0	473184		
40277042003	**MW-303**	EPA 300.0	473184		
40277042004	**MW-304**	EPA 300.0	473184		
40277042005	**MW-305**	EPA 300.0	473184		
40277042006	**FIELD BLANK**	EPA 300.0	473184		

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

40277042

Scan QR Code for instructions

Company Name:	SCS ENGINEERS	Contact/Report To:	Meghan Blodgett
Street Address:	2830 Dairy Drive, Madison, WI 53718	Phone #:	608-216-7362
		E-Mail:	mblodgett@scsengineers.com
		Cc E-Mail:	
Customer Project #.			
Project Name:	2522069 EDGEWATER CCR (I-43)	Invoice To:	Accounts Payable
		Invoice E-Mail:	aradunzel@scsengineers.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] 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 [X] 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 Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Boron & Calcium	TDS, Cl/F/SO4, pH	Sample Comment
MW-301	WT	G			4/15/24	14:45	2			X	X	001
MW-302	WT					13:35				X	X	002
MW-303	WT					12:35				X	X	003
MW-304	WT					11:25				X	X	004
MW-305	WT					10:15				X	X	005
FIELD BLANK	WT					14:50				X	X	006

Specify Container Size **: 3 3
Identify Container Preservative Type***: 2 1

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr: Dan Milewsky
AcctNum / Client ID:
Table #:
Profile / Template: 3946
Prelog / Bottle Ord. ID: EZ 3090640

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By: (Printed Name) William Quinet
Signature: William Quinet

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers.	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice.
2	137	0	1.0, 1.0	1.0, 1.0	X

	Date/Time		Date/Time	Tracking Number.
Relinquished by/Company: (Signature) William Quinet SCS	4/17/24 17:30	Received by/Company: (Signature)		
Relinquished by/Company: (Signature) C&D Logistics 1	04/18/24 0840	Received by/Company. (Signature) Susan K Wyle Pace	04/18/24 0840	Delivered by: [ ] In-Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time.	Received by/Company. (Signature)	Date/Time.	
Relinquished by/Company (Signature)	Date/Time.	Received by/Company. (Signature)	Date/Time.	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Client Name: SCS

Sample Preservation Receipt Form

Project # 40277042

All containers needing preservation have been checked and noted below: ☐Yes ☐No ☐N/A

Lab Lot# of pH paper. TDD0134 Lab Std #ID of preservation (if pH adjusted):

Initial when completed: SW Date/ Time:

Pace Lab #	Glass							Plastic						Vials						Jars				General				VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN 1	GN 2							
001									/		/																				X		2.5 / 5
002									/		/																				X		2.5 / 5
003									/		/																				X		2.5 / 5
004									/		/																				X		2.5 / 5
005									/		/																				X		2.5 / 5
006									/		/																				X		2.5 / 5
007																																	2.5 / 5
008																																	2.5 / 5
009																																	2.5 / 5
010																																	2.5 / 5
011																																	2.5 / 5
012																																	2.5 / 5
013																																	2.5 / 5
014																																	2.5 / 5
015																																	2.5 / 5
016																																	2.5 / 5
017																																	2.5 / 5
018																																	2.5 / 5
019																																	2.5 / 5
020																												04/28/24	SW				2.5 / 5

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other_____ Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☐N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO#: 40277042

40277042

Client Name: SCS

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 - 137 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 1.0, 1.0 /Corr: 1.0, 1.0

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: SCW

Labeled By Initials: AV

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☒Yes ☐No	6. 04/18/24 SCW
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
Correct Type: Pace Green Bay, Pace IR, Non-Pace		
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WT	☐Yes ☒No ☐N/A	12. 001+006 No date + time 04/18/24 SCW
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑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

Page 2 of 2

Appendix D

Historical Monitoring Results

Single Location
Name: WPL - Edgewater I43

Location ID: MW-301
Number of Sampling Dates: 27

Parameter Name	Units	4/26/2016	6/21/2016	8/10/2016	10/19/2016	12/19/2016	1/5/2017	1/23/2017	2/23/2017	4/6/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/9/2019
Boron	ug/L	298	157	151	148	174	--	177	181	144	138	145	149	136	120	126
Calcium	ug/L	389000	148000	94900	77800	127000	--	105000	51400	45200	57600	59400	48700	36700	43700	42900
Chloride	mg/L	28.5	18	6.2	7.4	8.9	--	8.2	6.3	5.6	7.5	5.2	4.7	4.7	4.1	4
Fluoride	mg/L	<2	1.1	0.62	0.65	0.86	--	0.77	0.64	0.61	0.87	0.63	0.62	0.62	0.61	0.63
Field pH	Std. Units	8.24	8.01	8.08	8	8.36	--	8.21	8.14	8.12	7.89	7.99	7.82	8.02	8.15	8.18
Sulfate	mg/L	25.9	15.9	7.4	9.5	9.6	--	9.3	9.1	9.1	9	8.2	8.6	9.3	8.8	9.2
Total Dissolved Solids	mg/L	343	290	306	312	264	194	254	276	240	264	248	236	214	260	230
Antimony	ug/L	0.98	0.58	0.12	<0.36	1	--	<0.36	2.7	1.4	<0.15	<0.15	--	--	--	--
Arsenic	ug/L	20.8	8.1	5.8	4.6	7.3	--	6.8	5.6	4.7	3.7	4.2	--	--	--	--
Barium	ug/L	596	236	177	141	195	--	219	128	107	125	115	--	--	--	--
Beryllium	ug/L	3.9	1.1	0.54	<0.63	1.1	--	1.1	4.1	0.49	0.18	0.25	--	--	--	--
Cadmium	ug/L	0.47	<0.44	<0.089	<0.44	0.97	--	<0.44	2.1	1	0.091	<0.081	--	--	--	--
Chromium	ug/L	133	37.7	20.8	16	27.7	--	28.6	14.2	8.6	10.6	8.6	--	--	--	--
Cobalt	ug/L	36.3	10.6	5.4	4.2	8.4	--	7.6	5.2	2.9	2.7	2.3	--	--	--	--
Lead	ug/L	35.9	11.3	6.1	5.1	9.6	--	8.1	5.6	3.3	3.2	3	--	--	--	--
Lithium	ug/L	137	49.2	29	24.8	42.2	--	38.6	25.1	16.2	18.1	16.7	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--
Molybdenum	ug/L	12.2	11.5	10.8	9.4	11	--	10.9	13.3	10.6	10.2	9.7	--	--	--	--
Selenium	ug/L	12.2	2.6	1.1	<1	2.5	--	<1	3.4	1.5	<0.32	0.39	--	--	--	--
Thallium	ug/L	0.88	<0.71	<0.14	<0.71	1.2	--	<0.71	2.6	1.3	<0.14	<0.14	--	--	--	--
Radium-226	pCi/L	1.9	1.29	-0.088	-0.595	0.446	--	0.432	0.546	-0.084	0.408	0.539	--	--	--	--
Radium-228	pCi/L	3.54	0.349	0.462	1.58	1.65	--	0.563	3.3	0.486	1.2	0.557	--	--	--	--
Total Radium	pCi/L	5.44	1.64	0.462	1.58	2.09	--	0.995	3.85	0.486	1.61	1.16	--	--	--	--
Field Specific Conductance	umhos/cm	401	394	387	367	384	--	382	371	390	374	377	378	384	387	395
Oxygen, Dissolved	mg/L	1.1	0.9	0.1	0.1	0.09	--	0.1	1.5	0.3	0.2	0	0.6	0.1	0.2	0.2
Field Oxidation Potential	mV	-94	-178	-155	-135	-143	--	-141	33	-53	-171	-161	-46	-138	-97	-99
Groundwater Elevation	feet	653.54	652.01	649.68	652.32	652.85	--	652.98	653.14	654.43	654.11	652.64	652.03	651.28	650.71	653.06
Temperature	deg C	8.7	10.9	10.9	11.3	7.5	--	8.5	9	9.9	11.1	10.5	9.7	8.6	9.5	9.4
Turbidity	NTU	340.1	916.9	739.9	452.6	895.1	--	650.8	264.3	207.4	322.2	349.1	150.6	89.45	136.6	125.8
pH at 25 Degrees C	Std. Units	7.8	8	7.6	7.8	7.9	--	8.1	7.9	8	8	7.9	7.8	8	7.2	7.9

Single Location
Name: WPL - Edgewater I43

Location ID: MW-301
Number of Sampling Dates: 27

Parameter Name	Units	10/8/2019	4/7/2020	10/13/2020	12/18/2020	4/13/2021	6/16/2021	10/26/2021	4/13/2022	10/4/2022	4/24/2023	10/9/2023	4/15/2024
Boron	ug/L	142	133	142	--	132	--	130	124	124	119	128	131
Calcium	ug/L	42600	55800	33400	--	53900	--	30200	42100	35300	30600	26600	24400
Chloride	mg/L	3.8	6.9	4.2	--	3.9	--	3.3	3.7	3.9	3.4	3.5	3.3
Fluoride	mg/L	0.63	0.82	0.83	0.64	0.64	--	0.61	0.7	0.62	0.62	0.67	0.64
Field pH	Std. Units	7.7	8.05	7.96	7.64	8.48	8.14	8.23	8.03	7.98	8.05	8.07	7.62
Sulfate	mg/L	9.3	11.2	19	--	10.2	--	10.2	11.1	11.8	11.4	12.1	11
Total Dissolved Solids	mg/L	256	276	228	--	238	--	200	262	236	230	200	206
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	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	390	384	354	391	387	358	356	377	373	370	359	353
Oxygen, Dissolved	mg/L	0.32	0.3	1.1	0.5	0.2	0.3	1.3	0.49	0.63	1.4	0.87	1.84
Field Oxidation Potential	mV	97	-69	162	1.7	-16	146	291	224.6	59.9	370.1	433.2	472.8
Groundwater Elevation	feet	653.26	656.59	652.16	653.91	654.56	649.78	650.76	651.65	648.87	653.26	648.65	652.95
Temperature	deg C	9.8	9.5	12.5	8.1	9.1	10.2	11.2	9.2	11.1	8.8	10.3	12.5
Turbidity	NTU	133.7	259	57.28	69.45	179	--	130	145	115	97.9	45.4	14.5
pH at 25 Degrees C	Std. Units	7.9	7.9	7.8	--	8	--	7.9	8	8	7.9	8	8.5

Single Location
Name: WPL - Edgewater I43

Location ID: MW-302
Number of Sampling Dates: 30

Parameter Name	Units	4/26/2016	6/21/2016	8/9/2016	10/19/2016	12/19/2016	1/5/2017	1/23/2017	2/23/2017	4/6/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/9/2019
Boron	ug/L	198	121	131	126	127	--	151	149	132	124	130	128	124	115	118
Calcium	ug/L	254000	49000	36500	30900	42600	--	59300	41900	40800	38700	33900	31200	30000	28200	28400
Chloride	mg/L	19.5	8.9	7.1	7.6	10	--	8.9	6.9	6.7	6.9	5.6	5.5	5.2	4.5	4.4
Fluoride	mg/L	1.1	0.74	0.75	0.69	0.94	--	0.85	0.67	0.68	0.83	0.74	0.71	0.73	0.71	0.73
Field pH	Std. Units	8.33	8.05	6.24	12.2	8.31	--	8.16	8.16	8	7.95	7.98	7.7	8.02	8.08	8.14
Sulfate	mg/L	81.5	36.4	35	42.6	36.4	--	30.4	27.9	29.6	32.2	24	26.3	22.6	19.6	20.4
Total Dissolved Solids	mg/L	543	346	308	298	302	280	324	344	322	284	262	238	248	250	248
Antimony	ug/L	4.5	0.73	0.28	0.37	0.97	--	0.75	0.96	0.41	0.4	0.21	--	--	--	--
Arsenic	ug/L	26.7	7.8	6.2	4.5	6.5	--	9	8.5	5.7	7.2	6.3	--	--	--	--
Barium	ug/L	309	100	80.1	60.4	77.5	--	119	103	90.2	77.2	78.8	--	--	--	--
Beryllium	ug/L	3.8	0.69	0.22	<0.13	0.35	--	1	0.8	<0.63	<0.18	<0.18	--	--	--	--
Cadmium	ug/L	0.85	<0.18	<0.089	<0.089	0.6	--	<0.44	<0.44	<0.44	<0.081	<0.081	--	--	--	--
Chromium	ug/L	49.8	5.2	2	0.81	3	--	7	5.5	3.6	1.6	1.2	--	--	--	--
Cobalt	ug/L	14.6	1.8	0.65	0.36	1.1	--	2.5	2.1	1.1	0.52	0.47	--	--	--	--
Lead	ug/L	55	7.1	2.3	0.92	3.6	--	8.8	6.5	3.5	1.4	1.7	--	--	--	--
Lithium	ug/L	79.9	19.2	14.4	14	15.8	--	22.8	19.6	16.8	12.7	11.2	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--
Molybdenum	ug/L	24.4	11.8	11.5	12.7	10.7	--	11.6	9.8	10.3	10.7	8	--	--	--	--
Selenium	ug/L	21.6	2.3	0.64	0.39	1.4	--	2.1	2.7	1.4	<0.32	0.44	--	--	--	--
Thallium	ug/L	<0.71	<0.29	<0.14	<0.14	0.68	--	<0.71	<0.71	<0.71	<0.14	<0.14	--	--	--	--
Radium-226	pCi/L	4.55	1.73	0.0816	0	0.293	--	0.325	1.21	1.49	0.366	1.1	--	--	--	--
Radium-228	pCi/L	3	1.84	1.24	1.12	0.574	--	2.4	2.64	0.351	0.841	0.208	--	--	--	--
Total Radium	pCi/L	7.55	3.57	1.32	1.12	0.867	--	2.73	3.85	1.84	1.21	0.844	--	--	--	--
Field Specific Conductance	umhos/cm	648	508	507	510	497	--	486	470	491	419	435	455	434	433	426
Oxygen, Dissolved	mg/L	2.4	0.5	0.5	0	0	--	0.4	1	0	0.3	0	0.7	0.2	0.3	0.8
Field Oxidation Potential	mV	52	-108	-95	-107	-73	--	-79	25	-12	-14	-115	70	-75	60	18
Groundwater Elevation	feet	653.56	651.89	649.3	652.38	652.79	--	664.97	653.1	654.72	654.12	652.55	652.05	651.25	650.7	654.06
Temperature	deg C	8.8	10.1	11.3	12.2	8.1	--	8.6	9.1	9.7	12.1	10.7	10.4	8.8	10.1	9.9
Turbidity	NTU	961.9	248.2	85.43	32.08	190.8	--	372.8	296.2	144.2	84.5	56.73	33.56	35.46	23.32	18.41
pH at 25 Degrees C	Std. Units	8	8	7.8	7.8	7.9	--	8	7.9	8	7.9	7.9	7.9	8	7.9	7.9

Single Location
Name: WPL - Edgewater I43

Location ID: MW-302
Number of Sampling Dates: 30

Parameter Name	Units	10/8/2019	4/8/2020	5/20/2020	10/13/2020	12/18/2020	4/13/2021	6/16/2021	10/26/2021	4/13/2022	6/16/2022	10/4/2022	4/24/2023	10/9/2023	11/14/2023	4/15/2024
Boron	ug/L	129	111	--	128	--	121	--	122	113	--	117	114	129	--	123
Calcium	ug/L	29900	27200	--	26900	--	28700	--	27200	28600	--	24800	26600	27900	--	26500
Chloride	mg/L	3.8	4.4	--	4.3	--	4.1	--	3.8	4	--	4.3	3.9	3.9	--	4.2
Fluoride	mg/L	0.71	0.75	0.7	0.82	0.73	0.76	0.77	0.74	0.85	0.77	0.72	0.74	0.77	0.77	0.74
Field pH	Std. Units	7.67	7.79	8.19	7.85	8.05	8.36	8.37	8.23	8.01	8.1	7.97	8	8.03	8	7.71
Sulfate	mg/L	18.4	19.4	--	19	--	17.4	--	15.9	17.2	--	17	16.1	16.5	--	24.8
Total Dissolved Solids	mg/L	242	254	--	192	--	232	--	220	238	--	222	240	222	--	246
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	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	423	413	420	418	426	412	386	393	399	384	383	387	381	391.3	414
Oxygen, Dissolved	mg/L	0.72	0.7	0.2	0.3	1	0.4	0.6	0.6	0.69	0.52	0.83	1.22	0.79	0.7	0.79
Field Oxidation Potential	mV	90	-3.4	-6	37	163	189	24	207	341	105.7	94.9	451.2	311.9	-79.9	455.7
Groundwater Elevation	feet	653.21	656.47	655.81	652.17	653.88	654.57	649.75	650.88	651.62	650.55	648.85	653.25	648.67	649.97	652.93
Temperature	deg C	9.7	9.3	10	11.9	8.9	9.2	10.3	9.8	9.9	11.1	11.8	9	10.9	9.6	11.4
Turbidity	NTU	11.73	25.99	10.15	14.16	9.23	19.6	18.1	38.3	3.88	4.95	3.33	1.77	4.36	--	2.7
pH at 25 Degrees C	Std. Units	7.9	7.7	--	7.9	--	8	--	8	7.9	--	8	8	8	--	8.5

Single Location
Name: WPL - Edgewater I43

Location ID: MW-303
Number of Sampling Dates: 25

Parameter Name	Units	4/26/2016	6/21/2016	8/9/2016	10/19/2016	12/19/2016	1/5/2017	1/23/2017	2/23/2017	4/7/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/9/2019	10/7/2019	4/8/2020
Boron	ug/L	86.4	85	96	90.8	81.6	--	99.8	93.9	89.8	89.1	95	89	94.6	87.3	88.4	91.2	79
Calcium	ug/L	48300	36900	36700	31600	50500	--	46700	32600	33200	35500	35900	29100	31900	31600	31700	30900	29900
Chloride	mg/L	15.5	6.9	6.8	6.8	22.9	--	8.8	5.3	6.2	6.2	5.7	6.8	5	4.4	4.1	4.7	4.3
Fluoride	mg/L	0.55	0.59	0.59	0.6	0.63	--	0.8	0.55	0.57	0.69	0.6	0.66	0.54	0.56	0.57	0.6	0.6
Field pH	Std. Units	7.96	7.98	6.24	8.03	8.32	--	8.23	8.24	8.15	7.9	7.91	7.59	7.98	8.04	8.05	10.12	7.67
Sulfate	mg/L	131	45.2	70.1	137	38.2	--	113	46.1	79.2	51.1	40.5	67.1	27.3	26.1	23.7	30.3	23.3
Total Dissolved Solids	mg/L	468	314	378	458	312	310	400	300	348	314	290	304	260	270	270	230	274
Antimony	ug/L	0.66	0.1	0.077	0.077	2.3	--	0.59	0.081	<0.073	<0.15	<0.15	--	--	--	--	--	--
Arsenic	ug/L	2.8	5.3	4.4	2.7	3.2	--	3.8	5.5	2.8	4	4.4	--	--	--	--	--	--
Barium	ug/L	134	80.2	91.2	81.6	90.3	--	120	81.1	80.7	80.6	81.1	--	--	--	--	--	--
Beryllium	ug/L	0.18	<0.13	<0.13	<0.13	<0.13	--	0.13	<0.13	<0.13	<0.18	<0.18	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.089	<0.089	0.22	--	0.098	<0.089	<0.089	<0.081	<0.081	--	--	--	--	--	--
Chromium	ug/L	8.1	1	0.93	0.41	1.3	--	8.6	2.1	0.79	<1	<1	--	--	--	--	--	--
Cobalt	ug/L	2.2	0.5	0.4	0.32	0.63	--	2	0.75	0.34	0.4	0.44	--	--	--	--	--	--
Lead	ug/L	1.9	0.26	0.091	0.16	0.3	--	2.1	0.52	0.082	<0.2	0.22	--	--	--	--	--	--
Lithium	ug/L	19.3	10.2	13.1	14.8	10.3	--	20.1	11.9	13.2	11.4	11.4	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--
Molybdenum	ug/L	45.4	12.7	23	34	9.4	--	30.5	11	21.2	14.4	12.4	--	--	--	--	--	--
Selenium	ug/L	0.66	<0.21	<0.21	<0.21	0.26	--	0.29	<0.21	<0.21	<0.32	<0.32	--	--	--	--	--	--
Thallium	ug/L	<0.14	0.17	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.14	--	--	--	--	--	--
Radium-226	pCi/L	0	0.721	0	0	0.367	--	-0.066	0.233	0.535	0.298	0.198	--	--	--	--	--	--
Radium-228	pCi/L	0.392	0.338	0.426	0.921	0.497	--	0.236	1.37	0.336	0.397	0.454	--	--	--	--	--	--
Total Radium	pCi/L	0.392	1.06	0.426	0.921	0.864	--	0.236	1.6	0.871	0.695	0.603	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	586	589	756	567	582	--	681	558	617	486	564	557	494	500	486	497	454
Oxygen, Dissolved	mg/L	1.1	0.8	0.4	2.2	0	--	0.9	0.1	0.6	0.4	0	1	0.2	0.2	0.2	0.56	0.5
Field Oxidation Potential	mV	178	-174	-138	-185	-156	--	-168	-119	-93	-65	-157	88	-125	-105	-65	127	-75.2
Groundwater Elevation	feet	653.59	651.8	649.37	652.18	652.82	--	652.92	653.1	654.55	654.14	652.5	652.03	651.3	650.7	654.06	653.27	656.46
Temperature	deg C	8.6	10.2	11.3	11.3	4.4	--	8.8	8.9	9.7	11	11.7	10.1	8.9	10	9.5	11.8	9.4
Turbidity	NTU	107.6	21.88	13.48	8.9	30.04	--	103.3	51.76	9.79	22.54	16.29	3.06	6.62	17.2	4.92	9.74	21.08
pH at 25 Degrees C	Std. Units	7.6	7.9	7.8	7.9	7.7	--	8.1	7.9	7.9	7.9	7.9	7.9	7.8	7.9	7.8	7.9	7.8

Single Location
Name: WPL - Edgewater I43

Location ID: MW-303
Number of Sampling Dates: 25

Parameter Name	Units	10/13/2020	4/13/2021	10/26/2021	4/11/2022	10/5/2022	4/24/2023	10/9/2023	4/15/2024
Boron	ug/L	85.8	84.7	83.3	80.7	84.2	85.4	84.4	88.4
Calcium	ug/L	29000	29600	29300	31300	29600	31200	27400	28400
Chloride	mg/L	5.2	4.5	4.2	4.3	4.2	3.8	5.3	3.9
Fluoride	mg/L	0.7	0.62	0.61	0.71	0.56	0.58	0.76	0.63
Field pH	Std. Units	8.31	8.26	8.05	7.73	7.97	7.93	7.96	7.67
Sulfate	mg/L	33.2	25.6	28.9	24.9	23.9	20.6	26.7	24.4
Total Dissolved Solids	mg/L	150	260	268	274	270	268	266	262
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	--	--	--	--	--	--	--	--
Mercury	ug/L	--	--	--	--	--	--	--	--
Molybdenum	ug/L	--	--	--	--	--	--	--	--
Selenium	ug/L	--	--	--	--	--	--	--	--
Thallium	ug/L	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--
Total Radium	pCi/L	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	570	475	478	458	455	447	446	439
Oxygen, Dissolved	mg/L	0.4	0.5	0.6	1.75	1.1	1.03	2.77	3.35
Field Oxidation Potential	mV	128	154	244	78	117.5	297.4	472.7	556.9
Groundwater Elevation	feet	652.2	654.53	650.9	651.58	648.89	653.31	648.65	652.96
Temperature	deg C	10.7	9.4	9.7	10.9	10.3	9.4	10.2	13
Turbidity	NTU	7.21	<0.02	71.5	0.92	2.64	1.65	1.22	2.04
pH at 25 Degrees C	Std. Units	7.9	8	8	7.9	7.9	8	7.9	8.5

Single Location
Name: WPL - Edgewater I43

Location ID: MW-304
Number of Sampling Dates: 25

Parameter Name	Units	4/26/2016	6/21/2016	8/9/2016	10/19/2016	12/19/2016	1/5/2017	1/23/2017	2/23/2017	4/7/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/8/2019	10/8/2019	4/7/2020
Boron	ug/L	92.1	90.9	102	106	102	--	101	99.8	96.9	102	103	104	98.6	90.2	100	104	100
Calcium	ug/L	24500	25400	26700	23000	24800	--	24300	24500	24800	23500	23000	20100	20200	19400	19100	20600	18600
Chloride	mg/L	3.8	3.9	2.7	1.8	2.2	--	2.1	2.3	1.8	2	1.8	1.7	1.7	1.8	1.8	1.7	5.2
Fluoride	mg/L	0.49	0.55	0.51	0.45	0.59	--	0.5	0.5	0.48	0.6	0.53	0.54	0.5	0.5	0.51	0.48	0.75
Field pH	Std. Units	8.16	8	6.29	8.17	8.29	--	8.14	8.22	7.86	8.03	7.9	7.74	7.99	8.1	8.06	7.68	8.07
Sulfate	mg/L	13.8	14.2	13.2	13.5	14.6	--	14.3	14.6	14.5	14.9	14.2	14.2	15.2	13.5	14.5	13.5	15.4
Total Dissolved Solids	mg/L	222	234	244	232	198	212	214	206	224	218	222	208	222	224	226	172	228
Antimony	ug/L	0.11	0.52	0.36	<0.073	0.23	--	0.3	0.63	<0.073	<0.15	<0.15	--	--	--	--	--	--
Arsenic	ug/L	8.8	10	11.2	10.7	11.4	--	12.2	12.2	10.9	11.8	11.4	--	--	--	--	--	--
Barium	ug/L	77.6	74.7	81.5	73.4	71	--	81.1	73.5	73.7	79.1	75.1	--	--	--	--	--	--
Beryllium	ug/L	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.18	<0.18	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.089	<0.089	0.17	--	<0.089	0.45	<0.089	<0.081	<0.081	--	--	--	--	--	--
Chromium	ug/L	0.75	0.94	0.78	<0.39	0.7	--	0.8	1	<0.39	<1	<1	--	--	--	--	--	--
Cobalt	ug/L	0.26	0.23	0.12	0.078	0.18	--	0.17	0.53	0.047	0.11	0.088	--	--	--	--	--	--
Lead	ug/L	0.36	0.52	0.24	0.12	0.44	--	0.54	0.78	0.08	<0.2	<0.2	--	--	--	--	--	--
Lithium	ug/L	9.1	9.1	9.4	9.1	10.1	--	9.5	8.9	9.2	9.1	9.2	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--
Molybdenum	ug/L	4.6	4	3.9	3.8	3.7	--	3.8	4.1	3.6	4.7	3.7	--	--	--	--	--	--
Selenium	ug/L	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	0.32	<0.21	<0.32	<0.32	--	--	--	--	--	--
Thallium	ug/L	<0.14	<0.14	<0.14	<0.14	0.19	--	<0.14	0.59	<0.14	<0.14	<0.14	--	--	--	--	--	--
Radium-226	pCi/L	-0.215	0.511	0.161	-0.369	0.171	--	0.181	-0.164	0.326	0.604	2.05	--	--	--	--	--	--
Radium-228	pCi/L	0.687	0.288	0.137	0.625	-0.101	--	0.018	1.5	0.274	0.688	0.0736	--	--	--	--	--	--
Total Radium	pCi/L	0.687	0.799	0.298	0.625	0.171	--	0.199	1.5	0.6	1.29	1.1	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	4.9	402	399	397	394	--	393	382	399	391	382	387	398	400	395	404	392
Oxygen, Dissolved	mg/L	0.8	0.5	0.1	0	0.3	--	0	1.1	2	0.5	0.4	0.8	0.3	0.2	0.7	0.81	1.9
Field Oxidation Potential	mV	-57	-129	-127	-84	-3	--	-98	14	-100	-104	-107	145	-103	-81	-23	104	190
Groundwater Elevation	feet	655.9	653.79	651.55	654	654.26	--	654.37	654.49	654.85	655.7	654.49	653.65	652.86	652.26	655.59	654.77	658.16
Temperature	deg C	8.9	11.02	12	11.1	7.6	--	8.6	8.8	12	11.2	14.3	10	8.9	9.5	10.4	11	12.4
Turbidity	NTU	22.36	17.46	7.38	6.77	8.88	--	10.78	5.06	2.56	3	2.88	1.7	9.62	3	6.25	43.61	227.3
pH at 25 Degrees C	Std. Units	7.8	8	7.8	7.8	7.9	--	8	7.9	8	7.8	8	7.9	8	7.9	7.9	8	7.8

Single Location
Name: WPL - Edgewater I43

Location ID: MW-304
Number of Sampling Dates: 25

Parameter Name	Units	10/15/2020	4/13/2021	10/26/2021	4/11/2022	10/5/2022	4/24/2023	10/9/2023	4/15/2024
Boron	ug/L	94.5	91.7	89.8	89.3	91.8	87.1	92.1	90.3
Calcium	ug/L	15800	19700	21600	25500	19400	22000	20700	21000
Chloride	mg/L	2.1	2.1	2.3	2.3	2.4	2.2	2.5	2.7
Fluoride	mg/L	0.58	0.53	0.49	<0.095	0.47	0.52	0.55	0.49
Field pH	Std. Units	8.12	8.31	8.12	7.87	8.05	8.02	8.08	7.62
Sulfate	mg/L	15.5	15.3	15.6	16.2	16.2	15.6	16.4	16.8
Total Dissolved Solids	mg/L	228	224	218	220	218	226	220	234
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	--	--	--	--	--	--	--	--
Mercury	ug/L	--	--	--	--	--	--	--	--
Molybdenum	ug/L	--	--	--	--	--	--	--	--
Selenium	ug/L	--	--	--	--	--	--	--	--
Thallium	ug/L	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--
Total Radium	pCi/L	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	411	403	398	392	400	385	293	398
Oxygen, Dissolved	mg/L	0.2	0.5	0.6	0.41	0.81	1.02	4.63	1.29
Field Oxidation Potential	mV	-10	216	205	135.6	157.2	315	307.6	385.5
Groundwater Elevation	feet	654.17	656.36	652.54	653.08	650.51	654.83	650.24	654.82
Temperature	deg C	9.7	9.1	9.6	11.4	11.4	8.8	9.5	12.7
Turbidity	NTU	9.1	<0.02	96.3	5.11	77.7	2.32	55.7	9.05
pH at 25 Degrees C	Std. Units	8	8	8	7.9	8	7.9	7.9	8.5

Single Location
Name: WPL - Edgewater I43

Location ID: MW-305
Number of Sampling Dates: 18

Parameter Name	Units	2/23/2017	4/7/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/9/2019	10/8/2019	4/7/2020	10/15/2020	4/13/2021	10/26/2021	4/11/2022	10/4/2022	4/25/2023
Boron	ug/L	94.4	86.4	78.8	76.5	70	71.7	65.9	68	73	65.8	65.5	66.6	67.8	61.5	63.7	60.8
Calcium	ug/L	93800	103000	102000	95900	90700	83000	82200	89000	90300	88800	76800	86800	87800	88500	83700	80500
Chloride	mg/L	20.8	20.4	22.5	21.3	21.5	21.8	22.7	23	22.5	24.9	24.5	25.3	24.9	27.5	29.6	28.3
Fluoride	mg/L	0.73	0.59	0.72	0.69	0.64	0.63	0.58	0.65	0.63	0.75	0.72	0.67	0.72	<0.095	0.59	0.84
Field pH	Std. Units	7.75	7.62	7.52	7.47	7.55	7.54	7.65	7.85	7.36	7.48	7.63	7.76	7.76	7.42	7.51	7.49
Sulfate	mg/L	127	131	140	130	134	129	130	136	137	135	139	127	125	141	140	132
Total Dissolved Solids	mg/L	576	576	598	570	540	566	572	568	548	580	500	540	556	578	602	570
Antimony	ug/L	0.21	0.088	0.59	0.53	0.23	<0.15	<0.15	0.78	<0.15	--	--	--	--	--	--	--
Arsenic	ug/L	3	2.5	2.5	2.3	2.4	2.2	2.3	2.9	2.4	--	--	--	--	--	--	--
Barium	ug/L	230	220	208	200	195	177	169	169	169	--	--	--	--	--	--	--
Beryllium	ug/L	0.21	0.15	<0.18	<0.18	<0.18	<0.18	<0.18	0.19	<0.25	--	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.081	<0.081	0.1	<0.081	<0.15	0.83	<0.15	--	--	--	--	--	--	--
Chromium	ug/L	10.8	6.8	4	2.7	1.8	<1	<1	1.2	<1	--	--	--	--	--	--	--
Cobalt	ug/L	2.6	1.5	0.8	0.56	0.5	<0.085	<0.12	0.83	<0.12	--	--	--	--	--	--	--
Lead	ug/L	2.4	1.6	0.98	0.87	0.44	<0.2	<0.24	0.81	<0.24	--	--	--	--	--	--	--
Lithium	ug/L	23.2	19.7	15.7	14.8	12.4	12	11.2	11.8	12.4	--	--	--	--	--	--	--
Mercury	ug/L	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.084	<0.084	<0.084	--	--	--	--	--	--	--
Molybdenum	ug/L	5	4.6	3.3	3.6	3.2	2.5	2.3	3.3	2.6	--	--	--	--	--	--	--
Selenium	ug/L	0.56	0.28	<0.32	<0.32	<0.32	<0.32	<0.32	0.92	<0.32	--	--	--	--	--	--	--
Thallium	ug/L	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.8	<0.14	--	--	--	--	--	--	--
Radium-226	pCi/L	0.35	0.0649	0.51	0.791	0.277	0.597	0.323	0.764	0.238	--	--	--	--	--	--	--
Radium-228	pCi/L	3.8	0.836	0.555	0.878	0.969	0.73	0.716	0.921	0.473	--	--	--	--	--	--	--
Total Radium	pCi/L	4.15	0.901	1.07	1.31	1.25	1.33	1.04	1.69	0.711	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	856	922	884	901	886	915	941	942	935	917	911	891	863	889	917	890
Oxygen, Dissolved	mg/L	1.2	0.7	0.4	0.74	0.2	0.2	0.2	0.3	0.82	0.53	0.3	0.8	1.6	0.45	0.67	1.71
Field Oxidation Potential	mV	-224	-108	-167	-122	-125	-120	-101	-75	112	28	-41	128	136	261.1	118.5	322.8
Groundwater Elevation	feet	658.02	659.65	659.7	658.54	657.22	656.24	655.89	659.03	658.77	661.58	658.08	659.69	655.86	657.58	654.4	658.22
Temperature	deg C	7.9	9.2	11.3	12.4	10.3	8.9	9.9	9.8	12.4	10.5	10	9.4	11	9.9	10.7	8.5
Turbidity	NTU	613.2	138	140.6	67.21	42.54	13.01	10.56	9.67	6.56	7.35	8.27	0.93	21.7	30.1	6.44	1.42
pH at 25 Degrees C	Std. Units	7.6	7.6	7.5	7.5	7.7	7.5	7.5	7.5	7.6	7.5	7.6	7.6	7.6	7.5	7.5	7.6

Single Location
Name: WPL - Edgewater I43

Location ID: MW-305
Number of Sampling Dates: 18

Parameter Name	Units	10/9/2023	4/15/2024
Boron	ug/L	64.5	63.4
Calcium	ug/L	85800	87400
Chloride	mg/L	29.6	30.7
Fluoride	mg/L	<0.95	0.66
Field pH	Std. Units	7.56	7.34
Sulfate	mg/L	137	134
Total Dissolved Solids	mg/L	604	578
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	--	--
Mercury	ug/L	--	--
Molybdenum	ug/L	--	--
Selenium	ug/L	--	--
Thallium	ug/L	--	--
Radium-226	pCi/L	--	--
Radium-228	pCi/L	--	--
Total Radium	pCi/L	--	--
Field Specific Conductance	umhos/cm	877	884
Oxygen, Dissolved	mg/L	0.46	1.64
Field Oxidation Potential	mV	236.7	395.1
Groundwater Elevation	feet	654.22	658.53
Temperature	deg C	9.6	11.3
Turbidity	NTU	5.65	4.3
pH at 25 Degrees C	Std. Units	7.5	8.2

Appendix E

October 2023 Alternative Source Demonstration

Alternative Source Demonstration
October 2023 Detection Monitoring

Edgewater Generating Station
I-43 Ash Disposal Facility
Town of Wilson
Sheboygan County, Wisconsin

Prepared for:

SCS ENGINEERS

25224069.00 | June 4, 2024

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

Table of Contents

Section Page

Tables

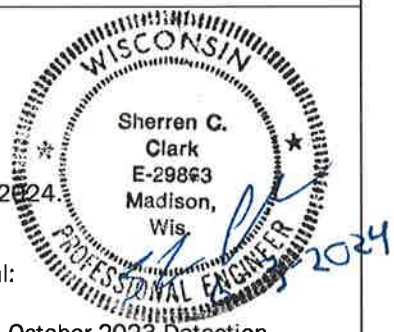
Figures

Appendices

I:\25224069.00\Deliverables\2023 October ASD\240604_I43_October ASD_Final.docx

PE CERTIFICATION

	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 I-43 Ash Disposal Facility. I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.
	(signature) 6-3-2024 (date)
	Sherren Clark, PE (printed or typed name)
	License number E-29863 My license renewal date is July 31, 2024. Pages or sheets covered by this seal: Alternative Source Demonstration – October 2023 Detection Monitoring, Edgewater I-43 Ash Disposal Facility, Town of Wilson, Sheboygan County, Wisconsin (Entire Document)



[This page left blank intentionally]

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 is prepared to fulfill the requirements of 40 CFR 257.94(e)(2). The applicable sections of the CCR 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 to determine if any other sources are likely causes of the identified exceedance(s) of 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 evaluates an SSI observed in the statistical evaluation of the October 2023 detection monitoring event and November 2023 resampling event at the Edgewater I-43 Ash Disposal Facility (I-43 ADF). This ASD report has been developed for an SSI for fluoride at monitoring well MW-302.

1.2 SITE INFORMATION AND MAP

The I-43 ADF is located in the Town of Wilson, Sheboygan County, Wisconsin (**Figure 1**). The I-43 ADF receives CCR from the Edgewater Generating Station. The layout of the site on an aerial photograph base is shown on **Figure 2**. The I-43 ADF is operated under Wisconsin Department of Natural Resources (WDNR) License No. 02853.

The I-43 ADF includes a closed landfill (Phases 1 and 2) and multiple landfill modules in Phases 3 and 4 of the facility. Contact water basins and storm water runoff basins, which do not receive CCR, are also present at the site. The existing CCR Unit evaluated for this ASD is referred to as:

- EDG I-43 Phase 3, Modules 1 & 2, and Phase 4 Module 1 (existing CCR Landfill)

The Phase 3 Module 1, Phase 3 Module 2, and Phase 4 Module 1 units were previously described as separate existing CCR landfills although they are collectively managed and permitted in one footprint as a single existing CCR landfill by the facility and by the WDNR.

The closed landfill (Phase 1 and Phase 2) was completely closed in 2012. The closed landfill did not accept CCR after October 19, 2015; therefore, it is not subject to the requirements of 40 CFR 257.50-107. The closed landfill was constructed with a 5-foot compacted clay liner.

The active landfill, which is the CCR Unit, is constructed either with a 5-foot compacted clay liner overlain with a 1.5-foot-thick drainage layer or a 2-foot compacted clay liner and 60-mil high density polyethylene (HDPE) geomembrane, overlain by a 1-foot leachate collection drainage layer. The active landfill first accepted CCR for disposal in October 2011.

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

1.3 STATISTICALLY SIGNIFICANT INCREASES IDENTIFIED

The only SSI for the October 2023 monitoring event and November 2023 resampling event was for fluoride at monitoring well MW-302. Sample results for MW-302 exceeded the upper prediction limit (UPL) for fluoride in both the October and November events. A summary of the October 2023 and November 2023 constituent concentrations and the established benchmark concentrations is provided in **Table 1**. The constituent concentrations with results above the background concentrations 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 CCR Rule constituent results from background and compliance sampling in October and November 2023 are provided in **Table 1**. Historical fluoride concentrations are summarized in **Table 2**, and concentration trends for fluoride are shown in **Appendix A**. Complete laboratory reports for the October 2023 detection monitoring event and November 2023 resampling monitoring event will be included in the 2024 Annual Groundwater Monitoring and Corrective Action Report for the I-43 ADF.

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

2.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

2.1.1 Regional Information

For the purposes of groundwater monitoring, the Niagara Dolomite Aquifer is considered to be the uppermost aquifer unit, as defined under 40 CFR 257.53, at the I-43 ADF. 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 area of the I-43 ADF. The sedimentary sequence is underlain by Precambrian crystalline rocks that are not considered an aquifer in eastern Wisconsin.

An unconsolidated sand and gravel aquifer is present in some parts of Sheboygan County (Skinner and Borman, 1973), but does not appear laterally extensive.

Regional groundwater flow in the dolomite aquifer in the vicinity of the site is to the east or northeast.

2.1.2 Site Information

Soils at the site are primarily clay with discontinuous layers of sand and silty sand to a depth of at least 100 feet. During drilling of the CCR wells, the unconsolidated materials were identified as consisting primarily of clay. Zones of sand and gravel are known to be present within the clay, but these appear to be discontinuous, and no nearby private wells screened within the unconsolidated material have been identified. Soils encountered in borings MW-301, MW-302, MW-303, and MW-304 were primarily lean clay, silty clay, and silty sand. The upper 70 feet of soils in boring MW-305 were similar, but in approximately the lower 40 feet above bedrock, sand was the primary soil type. The depth to bedrock in the five wells ranged from approximately 109 feet to 133 feet below ground surface (bgs), and the elevation of the top of bedrock ranged from approximately 568 feet above mean sea level (amsl) to 605 feet amsl.

Shallow groundwater at the site generally flows east to west towards Weedens Creek, a tributary of the Sheboygan River.

Groundwater elevations at the CCR wells are summarized in **Table 3**. The October 2023 potentiometric surface map for the dolomite aquifer (**Figure 3**), based on groundwater elevations from monitoring wells MW-301 through MW-305, shows groundwater flow to the north, consistent with previous potentiometric surface maps. The southern portion of the map shows a northwest component of flow, driven by a higher water level at MW-305. This bedrock was shallower at this location so this well is screened at least 20 feet higher than the other wells, which may influence the water level in the well.

2.2 CCR MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of two upgradient (background) monitoring wells and three downgradient monitoring wells. The background wells include MW-304 and MW-305. The downgradient wells include MW-301, MW-302, and MW-303. The CCR Rule wells are installed in the upper portion of the dolomite aquifer. Well depths range from approximately 119 to 145 feet, measured from the top of the well casing.

2.3 OTHER MONITORING WELLS

Thirty-four groundwater monitoring wells currently exist at the I-43 ADF as part of the monitoring system developed for the state monitoring program. The well locations are shown on **Figure 2**. These monitoring wells and one on-site water supply well (WS-1) are used to monitor groundwater conditions at the site under WDNR License No. 02853, which includes the closed Phase 1/2 Landfill and the active Phase 3/4 Landfill.

Monitoring wells for the state monitoring program are installed in the unconsolidated glacial till unit, which is not the uppermost aquifer as defined under 40 CFR 257.53. This shallow monitoring system includes water table wells, mid-depth piezometers, and deep piezometers. Well depths range from approximately 15 to 49 feet, measured from the top of the well casing.

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 potential errors or analysis that led to an 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 sampling error may have caused or contributed to the observed SSI for fluoride. Potential field sampling errors or issues could include mislabeling of samples, improper sample handling, missed holding times, cross contamination during sampling, or other field errors. Field blank sample results were also reviewed for 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 fluoride SSI was due to a sampling error.

3.2 LABORATORY ANALYSIS REVIEW

Laboratory reports for the October 2023 detection monitoring event and November 2023 detection monitoring resampling event detection monitoring results were reviewed to determine if a laboratory analysis error or issue may have caused or contributed to the observed SSI for fluoride. 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 October 2023 detection monitoring event and November 2023 detection monitoring resampling event will be included in the 2024 Annual Groundwater Monitoring and Corrective Action Report for the facility.

Based on the review of the laboratory reports, SCS did not identify any indication that the fluoride SSIs were due to a laboratory analysis error. The October 2023 and November 2023 fluoride results for the three compliance wells were slightly higher than the April 2023 results but within the range of previous results for each well.

A time series plot of the fluoride analytical data was also reviewed for any anomalous results that might indicate a possible sampling or laboratory error (e.g., dilution error or incorrect sample

labeling) (Appendix A). The October and November 2023 fluoride results for MW-302 are consistent with the historical data for this well.

The fluoride concentration at background well MW-305 was non-detect, which is unusual in comparison to historical results. This non-detect is the result of a high limit of quantification, denoted by a D3 flag, caused by a lab dilution due to the presence of non-target analytes. The anomalous background result does not affect the determination of an SSI for the October 2023 event, because the UPL is based on previous background data. During the next interwell UPL update, these background results will be evaluated as potential outliers.

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 statistical method and outlier concentration lists for each monitoring well/CCR Unit

SCS did not identify any errors or issues in the statistical evaluation that caused or contributed to the determination of interwell SSIs for fluoride at well MW-302.

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. No errors or issues causing or contributing to the reported fluoride SSI were identified.

4.0 ALTERNATIVE SOURCES

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

4.1 POTENTIAL CAUSES OF SSI

4.1.1 Natural Variation

The statistical analysis for fluoride was completed using an interwell approach, comparing the October 2023 detection monitoring results to the UPLs calculated based on sampling of the background wells (MW-304 and MW-305). 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.

Fluoride has been detected in the upgradient (background) wells in all sampling events, with the exception of the anomalous non-detect result for the October 2023 sampling event discussed in Section 3.2. The MW-302 results were only slightly above the interwell UPL. Additional regional and site information is discussed below, indicating that natural variation is a likely cause of the fluoride SSI for well MW-302.

4.1.2 Man-Made Alternative Sources

Man-made alternative sources that could potentially contribute to the fluoride SSI at MW-302 include the closed I-43 Phase 1/2 Landfill, the contact water basin, or the ash unloading area. The closed Phase 1/2 Landfill was constructed with a 5-foot-thick compacted clay liner that is designed to inhibit the movement of leachate beyond the footprint of the closed landfill. The contact water basin consists of a 4-foot-thick compacted clay liner and a 60-mil HDPE textured geomembrane, overlain by a geotextile cushion and 1-foot of coarse aggregate. Based on the construction of these potential sources and the fact that fluoride was the only parameter exceeding a UPL, the SSI is not attributed to man-made sources.

4.2 LINES OF EVIDENCE

The lines of evidence indicating that the SSI for fluoride in compliance well MW-302, relative to the background wells, is due to natural variability include:

1. The hydraulic conductivity of the thick glacial till aquitard overlying the dolomite aquifer is very low, and there is limited hydrogeologic connection between the shallow groundwater and the aquifer.

2. The active Phase 3/4 landfill was constructed with a clay and/or composite liner system, so the potential for a release is very low.

3. Fluoride has been identified as a naturally occurring groundwater constituent in the region encompassing the I-43 ADF.

4. Publicly available data from the WDNR's Groundwater Retrieval Network (GRN) database indicate fluoride is commonly detected in Sheboygan County.

5. Publicly available data from the WDNR's Groundwater and Environmental Monitoring System (GEMS) database show that fluoride concentrations in shallow and deep groundwater at the I-43 ADF site, prior to CCR placement, were similar to those detected at MW-302.

6. Intrawell statistical analysis of the fluoride results from MW-302 shows that the concentrations of this parameter have not increased significantly since background monitoring was performed.

Each of these lines of evidence and the supporting data are discussed in more detail in the following sections.

4.2.1 Glacial Clay Till Hydraulic Conductivity

The glacial clay till at the I-43 ADF is an aquitard with very low vertical hydraulic conductivity. A site review completed by Weston for the U.S. EPA in 2010 found that samples of the native upper clay till collected by Warzyn Engineering, Inc. (Warzyn) in 1981 contained 65 to 85 percent clay size particles, indicating low hydraulic conductivity.

Vertical hydraulic conductivity tests of the clay till, completed as part of the 1981 Warzyn study, found the upper clay till ranged from 5×10^{-8} to 9×10^{-8} cm/s. The 1981 Warzyn study estimated the time required for groundwater to traverse vertically through the till to be "on the order of hundreds if not thousands of years" (Warzyn, 1981). Observed high vertical gradients provide further documentation of very low vertical hydraulic conductivity at the site (Weston, 2010). These results suggest there is limited hydrogeologic connection between the upper shallow till aquitard and the uppermost bedrock aquifer.

4.2.2 Liner Construction

The active landfill, which comprises the three CCR Units, is constructed with a low permeability liner system (compacted clay hydraulic conductivity is less than 10^{-7} cm/s) that minimizes potential leakage. Each unit was constructed as follows:

- Phase 4 Module 1 - 5-foot compacted clay liner.
- Phase 3 Module 1 - 5-foot compacted clay liner.
- Phase 3 Module 2 - Composite liner system including 2 feet of compacted clay and a 60-mil HDPE geomembrane.

All constructed modules have a leachate collection drainage layer overlying the liner. The collected leachate flows by gravity and/or is pumped to the contact water basin. The leachate/contact water swales and contact water basin have composite liners, consisting of compacted clay overlain by a 60-mil HDPE geomembrane.

4.2.3 Fluoride in Wisconsin Groundwater

Elevated natural fluoride concentrations above 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 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.

4.2.4 Fluoride in Sheboygan County Groundwater

Publicly available data from the WDNR's GRN database indicate fluoride is commonly detected in Sheboygan County. Data retrieved from the GRN database included a total of 585 Sheboygan County water supply well samples analyzed for fluoride through October 2023. Fluoride was detected in 94 percent of the samples. For the samples with fluoride detections, the average result for fluoride was 0.31 milligrams per liter (mg/L) and the maximum result was 1.3 mg/L. Of the 463 results where fluoride was above the limit of quantitation, 5.2 percent of the results were at or above the UPL concentration of 0.753 mg/L. The fluoride concentrations reported for MW-302 in October and November 2023, 0.77 mg/L for both events, are within the range of concentrations in the GRN database for Sheboygan County. WDNR GRN fluoride concentrations for Sheboygan County are provided in **Appendix B**.

4.2.5 State Program Background Data for Fluoride

Publicly available data from the WDNR's GEMS database show that fluoride concentrations in shallow and deep groundwater at the I-43 ADF site, prior to landfilling, were similar to those detected at MW-302. Fluoride is not included in the state monitoring program for the shallow monitoring wells; however, a limited number of samples were collected in 1978 during baseline monitoring prior to the I-43 landfill construction. The baseline samples indicated fluoride concentrations ranging from 0.43 to 0.84 mg/L in the glacial till. The fluoride concentrations in the samples from MW-302 in October and November 2023 fall within this range (**Table 1**), indicating they are consistent with a natural source. The baseline monitoring data downloaded from the GEMS database are provided in **Appendix C.**

The GEMS database download also includes results for two water supply wells that were previously located on-site. Fluoride results for samples from these two wells in 1978, prior to the I-43 landfill construction, were 0.70 and 0.74 mg/L. These results are very similar to the concentrations detected in 2023 samples from MW-302, indicating that fluoride at these levels was historically present in the aquifer prior to CCR disposal at the site.

4.2.6 Intrawell Evaluation

Intrawell statistical analysis of the fluoride results from MW-302 shows that the concentrations of this parameter have not increased significantly since background monitoring was completed prior to October 2017. The intrawell analysis for this parameter at MW-302 is provided in **Appendix D**.

ASDs previously prepared for the October 2017 and April 2018 detection monitoring events concluded that interwell SSIs reported for boron concentrations in downgradient monitoring wells MW-301 and MW-302 were likely due to naturally occurring boron in the bedrock aquifer at the I-43 ADF (SCS, 2018a and 2018b). This conclusion was based on several lines of evidence, including the site geology and historical boron monitoring results for the glacial till and bedrock aquifer. Following these ASDs, the statistical method for boron was modified to an intrawell prediction limit approach to account for natural variation. Since that change, boron levels have remained below the intrawell UPLs indicating no impact from the CCR Unit or the closed CCR landfill.

Review of time series plots for MW-302, included in **Appendix D**, indicates that the other Appendix III parameters, including calcium, chloride, sulfate, and total dissolved solids, have had stable or decreasing concentrations since background sampling was completed in 2016 and 2017. Based on the results for all Appendix III parameters, it is very unlikely that the interwell SSI for fluoride at MW-302 is due to the CCR Unit. The monitoring well concentrations are consistent with regional and historic site background for the bedrock aquifer and the intrawell analyses and time series plots indicate no impact from the CCR Unit.

5.0 ALTERNATIVE SOURCE DEMONSTRATION CONCLUSIONS

The lines of evidence discussed above regarding the SSI reported for fluoride concentrations in downgradient monitoring well MW-302 demonstrate that the SSI is likely due to natural variation in groundwater quality in the bedrock aquifer at the I-43 ADF.

6.0 SITE GROUNDWATER MONITORING RECOMMENDATIONS

In accordance with section 257.94(e)(2) of the CCR Rule, the I-43 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

Kammerer, Jr., P.A., 1995, Ground-Water Flow and Quality in Wisconsin's Shallow Aquifer System. U.S. Geological Survey Water-Resources Investigations Report 90-4171, 1995.

Luczaj, J., and Masarik, K, 2015, Groundwater Quantity and Quality Issues in a Water-Rich Region: Examples from Wisconsin, USA: Resources, 2015, 4, 323-357.

SCS Engineers, 2018a, Alternative Source Demonstration – October 2017 Detection Monitoring, I 43 Ash Disposal Facility, April 2018.

SCS Engineers, 2018b, Alternative Source Demonstration – April 2018 Detection Monitoring, I 43 Ash Disposal Facility, October 2018.

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

U.S. Environmental Protection Agency, 2015, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, April 2015.

Warzyn Engineering, Inc., 1981, Summary Report, Proposed Fly Ash Disposal Facility, Beeck-Goebel Properties, Edgewater Power Plant – Unit 5, Wisconsin Power and Light Company, 1981.

[This page left blank intentionally]

Tables

Table 1. Groundwater Analytical Results Summary
Edgewater I-43 Ash Disposal Facility, Sheboygan, WI / SCS Engineers Project #25223069.00

Parameter Name	Interwell UPL	Background Wells		Compliance Wells						
		MW-304	MW-305	MW-301		MW-302			MW-303	
		10/9/2023	10/9/2023	Intrawell UPL	10/9/2023	Intrawell UPL	10/9/2023	11/14/2023	Intrawell UPL	10/9/2023
Groundwater Elevation, ft amsl		650.24	654.22		648.65		648.67	649.97		648.65
Appendix III										
Boron, µg/L		92.1	64.5	184	128	149	129	--	100	84.4
Calcium, µg/L	103,000	20,700	85,800		26,600		27,900	--		27,400
Chloride, mg/L	24.9	2.5	29.6		3.5		3.9	--		5.3 J,D3
Fluoride, mg/L	0.753	0.55	<0.95 D3		0.67		0.77	0.77		0.76 J,D3
Field pH, Std. Units	8.34	8.08	7.56		8.07		8.03	8.00		7.96
Sulfate, mg/L	140	16.4	137		12.1		16.5	--		26.7
Total Dissolved Solids, mg/L	598	220	604		200		222	--		266

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
SSI = Statistically Significant Increase
-- = Not Analyzed
µg/L = micrograms per liter
mg/L = milligrams per liter
LOQ = Limit of Quantitation
LOD = Limit of Detection

Notes:
J = Estimated concentration at or above the LOD and below the LOQ.
D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Notes:
1. An individual result above the UPL does not constitute an SSI above background. See the accompanying letter text for identification of statistically significant results.
2. Interwell UPLs calculated based on results from background wells MW-304 and MW-305. Interwell UPLs based on 1-of-2 retesting approach. Interwell UPLs were calculated with background results from the May 2016 through the October 2020 sampling event.
3. Following the completion of the April 2018 Alternative Source Demonstration (ASD) Report, dated October 31, 2018, the statistical method for evaluating boron data at the three compliance monitoring wells was modified to an intrawell approach. Intrawell UPLs were calculated using results from the May 2016 through the April 2020 sampling events.

Created by: NDK Date: 10/27/2022
Last revision by: RM Date: 12/11/2023
Checked by: NLB Date: 12/13/2023
Sci/Proj Mgr QA/QC: TK Date: 1/7/2024

I:\25223069.00\Deliverables\2023 October ASD\Tables\[Table 1 - 2310 GW Analytical Summary.xlsx]Table

Table 2. Historical Analytical Results for Parameters with SSIs
WPL-Edgewater I-43 Ash Disposal Facility
Sheboygan, Wisconsin

Well Group	Well	Collection Date	Fluoride (mg/L)
Background	MW-304	4/26/2016	0.49
		6/21/2016	0.55
		8/9/2016	0.51
		10/19/2016	0.45
		12/19/2016	0.59
		1/23/2017	0.50
		2/23/2017	0.50
		4/7/2017	0.48
		6/6/2017	0.60
		8/1/2017	0.53
		10/23/2017	0.54
		4/3/2018	0.50
		10/4/2018	0.50
		4/8/2019	0.51
		10/8/2019	0.48
		4/7/2020	0.75
		10/15/2020	0.58
		4/13/2021	0.53
		10/26/2021	0.49
		4/11/2022	<0.095
		10/5/2022	0.47
		4/24/2023	0.52
		10/9/2023	0.55
	MW-305	2/23/2017	0.73
		4/7/2017	0.59
		6/6/2017	0.72
		8/1/2017	0.69
		10/23/2017	0.64
		4/3/2018	0.63
		10/4/2018	0.58
		4/9/2019	0.65
		10/8/2019	0.63
		4/7/2020	0.75
		10/15/2020	0.72
		4/13/2021	0.67
		10/26/2021	0.72 J
		4/11/2022	<0.095
		10/4/2022	0.59
		4/25/2023	0.84 J, D3
		10/9/2023	<0.95, D3
Compliance	MW-301	4/26/2016	<2.0
		6/21/2016	1.10 J
		8/10/2016	0.62
		10/19/2016	0.65 J
		12/19/2016	0.86 J
		1/23/2017	0.77 J
		2/23/2017	0.64
		4/6/2017	0.61
		6/6/2017	0.87 J
		8/1/2017	0.63
		10/23/2017	0.62
		4/3/2018	0.62
		10/4/2018	0.61
		4/9/2019	0.63
		10/8/2019	0.63
		4/7/2020	0.82 J
		10/13/2020	0.83
		12/18/2020	0.64
		4/13/2021	0.64
		10/26/2021	0.61
		4/13/2022	0.70
		10/4/2022	0.62
		4/24/2023	0.62
		10/9/2023	0.67

Table 2. Historical Analytical Results for Parameters with SSIs
WPL-Edgewater I-43 Ash Disposal Facility
Sheboygan, Wisconsin

Well Group	Well	Collection Date	Fluoride (mg/L)
Compliance	MW-302	4/26/2016	1.10 J
		6/21/2016	0.74
		8/9/2016	0.75
		10/19/2016	0.69
		12/19/2016	0.94 J
		1/23/2017	0.85 J
		2/23/2017	0.67
		4/6/2017	0.68
		6/6/2017	0.83
		8/1/2017	0.74
		10/23/2017	0.71
		4/3/2018	0.73
		10/4/2018	0.71
		4/9/2019	0.73
		10/8/2019	0.71
		4/8/2020	0.75
		5/20/2020	0.70
		10/13/2020	0.82
		12/18/2020	0.73
		4/13/2021	0.76
		6/16/2021	0.77
		10/26/2021	0.74
		4/13/2022	0.85
		6/16/2022	0.77
		10/4/2022	0.72 M0
		4/24/2023	0.74
		10/9/2023	0.77
Compliance	MW-303	4/26/2016	0.55
		6/21/2016	0.59
		8/9/2016	0.59
		10/19/2016	0.60
		12/19/2016	0.63
		1/23/2017	0.80 J
		2/23/2017	0.55
		4/7/2017	0.57
		6/6/2017	0.69
		8/1/2017	0.60
		10/23/2017	0.66
		4/3/2018	0.54
		10/4/2018	0.56
		4/9/2019	0.57
		10/7/2019	0.60
		4/8/2020	0.60
		10/13/2020	0.70
		4/13/2021	0.62
		10/26/2021	0.61
		4/11/2022	0.71
		10/5/2022	0.56
		4/24/2023	0.58
		10/9/2023	0.76, J, D3

Abbreviations:
mg/L = milligrams per liter or parts per million (ppm)
LOD = Limit of Detection
LOQ = Limit of Quantitation

Notes:
J = Estimated concentration at or above the LOD and below the LOQ.
D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0 = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

Created by: NDK Date: 8/5/2022
Last revision by: RM Date: 10/25/2023
Checked by: NLB Date: 3/18/2024

I:\25223069.00\Deliverables\2023 October ASD\Tables\[Table 2 - Fluoride Concentrations - CCR Wells.xlsx]Table 2-Analytical-CCR wells

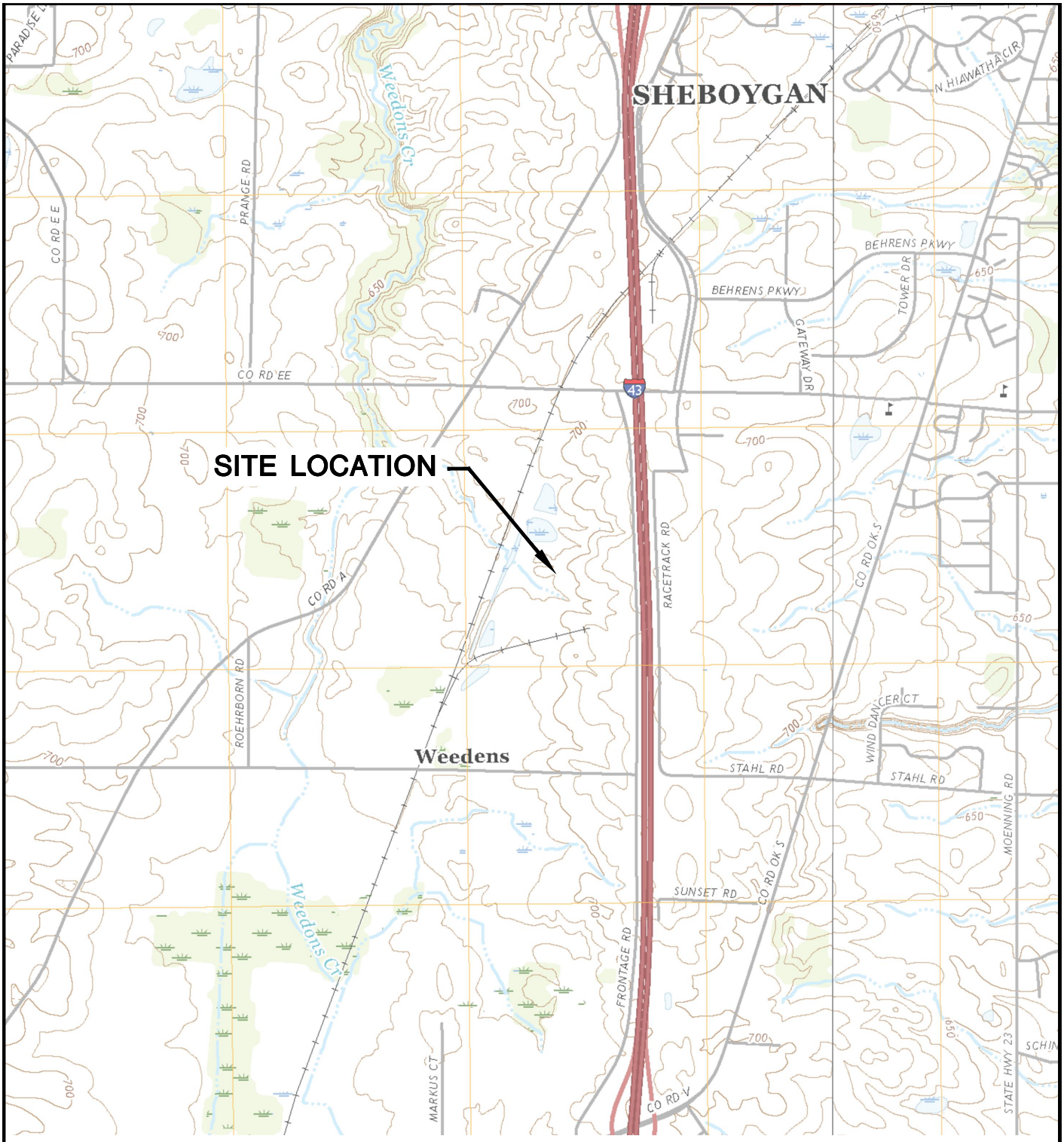
Table 3. Water Level Summary
Edgewater I-43 Ash Disposal Facility / SCS Engineers Project #25224069.00

Well Number	Ground Water Elevation in feet above mean sea level (amsl)				
	MW-301	MW-302	MW-303	MW-304	MW-305
Top of Casing Elevation (feet amsl)	696.96	702.57	719.25	691.97	717.67
Screen Length (ft)	5.00	5.00	5.00	5.00	5.00
Total Depth (ft from top of casing)	134.56	144.33	144.65	119.49	122.97
Top of Well Screen Elevation (ft)	567.40	563.24	579.60	577.48	600.46
Measurement Date					
April 8, 2016	692.29	683.61	696.30	--	--
April 26, 2016	653.54	653.56	653.59	655.90	
June 20, 2016	652.01	651.89	651.80	653.79	--
August 9, 2016	649.68	649.30	649.37	651.55	--
October 19, 2016	652.32	652.38	652.18	654.00	--
December 19, 2016	652.85	652.79	652.82	654.26	--
January 5, 2017	652.86	652.82	652.80	654.15	
January 23, 2017	652.98	664.97	652.92	654.37	--
February 23, 2017	653.14	653.10	653.10	654.49	658.02
April 7, 2017	654.43	654.72	654.55	654.85	659.65
June 6, 2017	654.11	654.12	654.14	655.70	659.70
August 1, 2017	652.64	652.55	652.50	654.49	658.54
October 23, 2017	652.03	652.05	652.03	653.65	657.22
April 3, 2018	651.28	651.25	651.30	652.86	656.24
October 4, 2018	650.71	650.70	650.70	652.26	655.89
April 8-9, 2019	653.06	654.06	654.06	655.59	659.03
October 8, 2019	653.26	653.21	653.27	654.77	658.77
November 26, 2019	--	--	655.56	--	--
April 7, 2020	656.59	656.47	656.46	658.16	661.58
May 20, 2020	--	655.81	--	--	--
October 13, 2020	652.16	652.17	652.20	654.17	658.08
December 18, 2020	653.91	653.88	--	--	--
April 13, 2021	654.56	654.57	654.53	656.36	659.69
June 16, 2021	649.78	649.75	--	--	--
October 26, 2021	650.76	650.88	650.90	652.54	655.86
April 11-13, 2022	651.65	651.62	651.58	653.08	657.58
June 16, 2022	--	650.55	--	--	--
October 4, 2022	648.87	648.85	648.89	650.51	654.40
February 14, 2023	651.61	651.60	651.61	653.17	656.25
March 22, 2023	652.44	652.43	652.42	654.04	657.48
April 24-25, 2023	653.26	653.25	653.31	654.83	658.22
May 25, 2023	651.28	651.24	651.30	653.17	657.54
June 26, 2023	648.06	648.05	648.07	649.86	655.07
July 26, 2023	647.08	647.02	647.17	649.15	652.09
October 11, 2023	648.65	648.67	648.65	650.24	654.22
November 14, 2023	649.98	649.97	649.95	651.37	654.89
Bottom of Well Elevation (ft)	562.40	558.24	574.60	572.48	594.70

Notes: -- = not measured
None

Created by: RM Date: 1/10/2020
Last rev. by: NLB Date: 12/13/2023
Checked by: RM Date: 12/18/2023

Figures



N

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

CLIENT	WISCONSIN POWER AND LIGHT CO. 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081	SITE	ALLIANT ENERGY I–43 ASH DISPOSAL FACILITY TOWN OF WILSON, WI

SITE LOCATION MAP

PROJECT NO.	25219069.00	DRAWN BY:	BSS
DRAWN:	11/20/2019	CHECKED BY:	MDB
REVISED:	01/13/2020	APPROVED BY:	TK 01/30/2020

ENGINEER

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

FIGURE
1

I:\25219069.00\Drawings\CCR 2019 Annual Report\Site Location Map.dwg, 1/30/2020 3:46:56 PM

LEGEND

- APPROXIMATE PROPERTY LINE
- MODULE LIMITS
- GRADE (2' CONTOUR)
- GRADE (10' CONTOUR)
- EDGE OF WATER
- SWALE
- CULVERT
- MH MANHOLE
- W CONTACT WATER TRANSFER PIPE
- AB ABANDONED 3" DIA. HDPE PIPE
- TREELINE/TREES
- PAVED ROAD
- UNPAVED ACCESS ROAD
- RAILROAD TRACKS
- FENCE
- UTILITY/LIGHT POLE
- MONITORING WELL (UNCONSOLIDATED)
- PIEZOMETER (UNCONSOLIDATED)
- PRIVATE WATER SUPPLY WELL
- CCR PIEZOMETER (BEDROCK)
- CCR RULE BACKGROUND MONITORING WELL
- CCR UNIT
- LIMITS OF FINAL COVER

NOTE:

1. 2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
2. MONITORING WELLS MW-301, MW-302, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
3. MONITORING WELL MW-305 WAS INSTALLED FEBRUARY 2, 2017 BY BADGER STATE DRILLING, INC.

N

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25219069.00	DRAWN BY:	BSS
DRAWN:	11/20/2019	CHECKED BY:	MDB
REVISED:	01/13/2022	APPROVED BY:	TK 1/8/2023

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

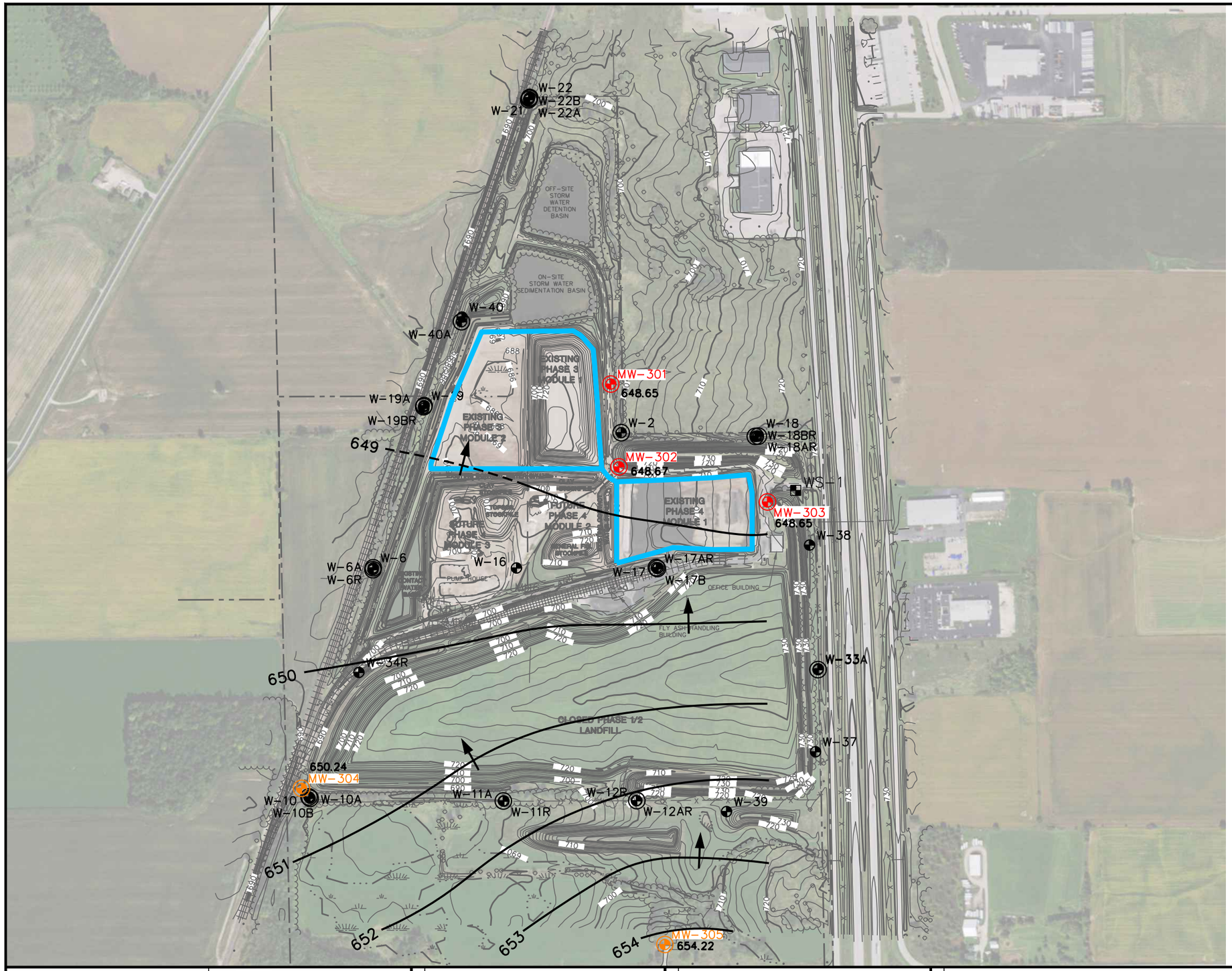
CLIENT: WISCONSIN POWER AND LIGHT CO.
3739 LAKESHORE DRIVE
SHEBOYGAN, WI 53081

SITE: ALLIANT ENERGY
I-43 ASH DISPOSAL FACILITY
TOWN OF WILSON, WI

SITE PLAN AND MONITORING WELL LOCATIONS

FIGURE 2

I:\25219069.00\Drawings\CCR 2019 Annual Report\Site Plan and Monitoring Well Locations.dwg, 1/14/2022 2:02:41 PM



LEGEND

- APPROXIMATE PROPERTY LINE
- MODULE LIMITS
- GRADE (2' CONTOUR)
- 690 GRADE (10' CONTOUR)
- EDGE OF WATER
- SWALE
- CULVERT
- MH MANHOLE
- W CONTACT WATER TRANSFER PIPE
- AB ABANDONED 3" DIA. HDPE PIPE
- TREELINE/TREES
- PAVED ROAD
- UNPAVED ACCESS ROAD
- RAILROAD TRACKS
- FENCE
- UTILITY/LIGHT POLE
- MONITORING WELL (UNCONSOLIDATED)
- PIEZOMETER (UNCONSOLIDATED)
- PRIVATE WATER SUPPLY WELL
- CCR RULE PIEZOMETER (BEDROCK)
- CCR RULE BACKGROUND MONITORING WELL
- CCR RULE UNIT
- 651.58 POTENTIOMETRIC SURFACE ELEVATION
- POTENTIOMETRIC SURFACE CONTOUR
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTE:

1. MONITORING WELLS MW-301, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
2. MONITORING WELLS MW-301, MW-302, MW-303 AND MW-304 WERE SURVEYED ON FEBRUARY 8, 2016 BY SCS ENGINEERS.
3. MONITORING WELL MW-305 WAS SURVEYED ON FEBRUARY 15, 2017 BY CQM, INC.
4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM PIEZOMETERS ON OCTOBER 11, 2023.
5. THE BACKGROUND MONITORING WELLS FOR THE I-43 LANDFILL ARE MW-304 AND MW-305.

N

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25223069.00	DRAWN BY:	KP
DRAWN:	10/17/2023	CHECKED BY:	NB
REVISED:	12/20/2023	APPROVED BY:	

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

CLIENT: WISCONSIN POWER AND LIGHT CO.
3739 LAKESHORE DRIVE
SHEBOYGAN, WI 53081

SITE: ALLIANT ENERGY
I-43 ASH DISPOSAL FACILITY
TOWN OF WILSON, WISCONSIN

BEDROCK POTENTIOMETRIC SURFACE MAP OCTOBER 2023

FIGURE 3

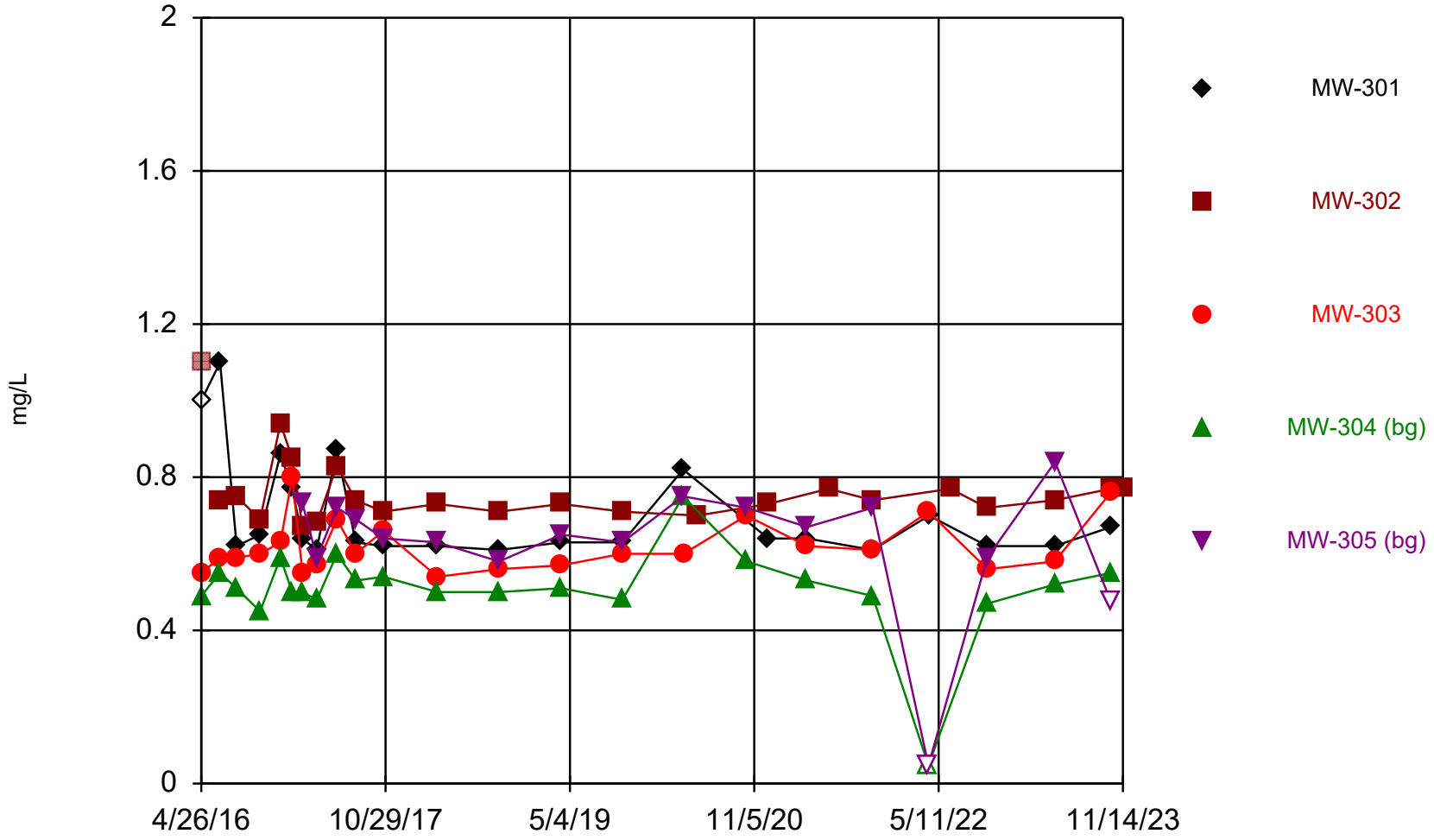
I:\25223069.00\Drawings\WTBL_BEDROCK_Oct23.dwg, 1/11/2024 9:32:28 AM

Appendix A

CCR Well Fluoride Trend Plots

Hollow symbols indicate censored values.

Fluoride



Time Series Analysis Run 3/8/2024 8:57 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Time Series

Constituent: Fluoride (mg/L) Analysis Run 3/8/2024 8:58 AM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	<2 (U)	1.1 (J,X)	0.55	0.49	
6/21/2016	1.1 (J)	0.74	0.59	0.55	
8/9/2016		0.75	0.59	0.51	
8/10/2016	0.62				
10/19/2016	0.65 (J)	0.69	0.6	0.45	
12/19/2016	0.86 (J)	0.94 (J)	0.63	0.59	
1/23/2017	0.77 (J)	0.85 (J)	0.8 (J)	0.5	
2/23/2017	0.64	0.67	0.55	0.5	0.73
4/6/2017	0.61	0.68			
4/7/2017			0.57	0.48	0.59
6/6/2017	0.87 (J)	0.83	0.69	0.6	0.72
8/1/2017	0.63	0.74	0.6	0.53	0.69
10/23/2017	0.62	0.71	0.66	0.54	0.64
4/3/2018	0.62	0.73	0.54	0.5	0.63
10/4/2018	0.61	0.71	0.56	0.5	0.58
4/8/2019				0.51	
4/9/2019	0.63	0.73	0.57		0.65
10/7/2019			0.6		
10/8/2019	0.63	0.71		0.48	0.63
4/7/2020	0.82 (J)			0.75	0.75
4/8/2020			0.6		
5/20/2020		0.7 (R)			
10/13/2020			0.7		
10/15/2020				0.58	0.72
12/18/2020	0.64 (R)	0.73 (R)			
4/13/2021	0.64		0.62	0.53	0.67
6/16/2021		0.77 (R)			
10/26/2021	0.61	0.74	0.61	0.49	0.72 (J)
4/11/2022			0.71	<0.095 (U)	<0.095 (U)
4/13/2022	0.7				
6/16/2022		0.77 (R)			
10/4/2022	0.62	0.72			0.59
10/5/2022			0.56	0.47	
4/24/2023	0.62	0.74	0.58	0.52	
4/25/2023					0.84 (J)
10/9/2023	0.67	0.77	0.76 (J)	0.55	<0.95 (U)
11/14/2023		0.77			

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

Appendix B

Sheboygan County Fluoride Concentrations – WDNR GRN Table

Fluoride Data from WDNR's Groundwater Retrieval Network (GRN) Database for Water Supply Wells
Sheboygan County, Wisconsin
Summary of Fluoride Detections

Row Labels	Count of Analytical Result
FLUORIDE TOTAL	**585**
DETECT BETWEEN LOD & LOQ	86
NON-DETECT	36
NORMAL QUANTIFIED RESULT	463
Grand Total	**585**

Percent with Fluoride Detected 94%

Sample Analytical Qualifier	(Multiple Items)

Count of Sample Analytical Result Amount	Average of Sample Analytical Result	Max of Sample Analytical Result
549	0.31	1.3

Data downloaded by RM on 3/8/2024; Summary tables developed by NDK 8/22/2022 and revised by RM 3/8/2024

I:\25223069.00\Deliverables\2023 October ASD\Appendix B Sheboygan Co Fluoride Concentrations\[WDNR_GRN_Fluoride_SheboyganCo_2403.xlsx]Detects

Sheboygan County Water Supply Well Results from WDNR's Groundwater Retrieval Network (GRN) Database - Fluoride

WI Unique Well #	Sample Collection Date	Labslip # / Sample ID	Storet Parameter Code	Storet Parameter Description	Sample Analytical Qualifier	Sample Analytical Result Amount	Units	Limit of Detection	Limit of Quantitation
BH038	6/8/1977	I0000896	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L		
BH037	6/8/1977	I0000895	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25	MG/L		
BH005	8/17/1977	I0000736	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L		
BH021	5/20/1980	I0000657	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L		
BH003	2/5/1985	I0000134	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L		
BH040	9/12/1985	I0000882	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L		
CZ365	8/20/1990	BB019178	951	FLUORIDE TOTAL	LESS THAN LL OF REP RANGE		MG/L	0.1	
CW708	1/18/1991	IB059335	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.1	MG/L		
AK890	8/13/1991	IC019849	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3	MG/L		
DE281	9/4/1991	IC027667	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.1	MG/L		
AF628	2/3/1992	IC068693	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.38	MG/L		
BH038	2/3/1993	4186-2	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.56	MG/L	0.003	
BH037	2/3/1993	4186-1	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49	MG/L	0.003	
BH039	2/10/1993	I4266-1	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.003	
BH024	2/17/1993	I12171	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.62	MG/L	0.1	
AY324	2/17/1993	I12170	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.41	MG/L	0.1	
JA221	3/29/1993	I12945	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
BH007	3/30/1993	I12967	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.75	MG/L	0.1	
BH008	3/30/1993	I12968	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.51	MG/L	0.1	
DB283	4/7/1993	083426000	951	FLUORIDE TOTAL		1			
BH028	9/8/1993	I917	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.65	MG/L	0.1	
BH029	9/8/1993	I918	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.42	MG/L	0.1	
BH035	10/4/1993	I4092996	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
BH036	10/4/1993	I4092997	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	0.1	
BH033	10/4/1993	I4092994	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BH034	10/4/1993	I4092995	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	0.1	
BH040	10/4/1993	I4092998	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.1	
BH030	10/4/1993	I4092991	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	0.1	
BH032	10/4/1993	I4092993	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	0.1	
BH031	10/4/1993	I4092992	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
BH022	10/22/1993	I1758	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH027	11/9/1993	I2202030	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	0.1	
BH003	11/29/1993	IE014429	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.09	MG/L	.1	
BH004	11/29/1993	IE014430	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.09	MG/L	.1	
BH021	12/28/1993	34333399	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	0.1	
BH020	12/28/1993	I3398	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
BH005	12/29/1993	I46175	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	.1	
BH006	12/29/1993	I46176	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	.1	
BP300	2/21/1994	I4080	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.36	MG/L	0.1	
BH026	3/29/1994	I4647	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BH025	3/29/1994	I4646	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.1	
GM365	4/12/1994	IE022511	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.08	MG/L	.1	
ET893	5/2/1994	BE080593	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L		
GS070	7/27/1994	BF008958	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.023	0.085
BP305	11/9/1994	13894851	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
GM370	11/10/1994	14025766	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
JA221	11/10/1994	14025765	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BP301	11/15/1994	14051214	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
EQ831	2/8/1995	BF054999	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L		
BM458	2/28/1995	IF019742	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33	MG/L		
EF758	3/1/1995	16993	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.1	
FX054	3/14/1995	75996	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37	MG/L	0.1	
BP317	3/21/1995	163121	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
ES728	3/26/1995	005164	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.46			
FX589	3/27/1995	I76607	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33	MG/L	0.1	
FH035	3/27/1995	76608	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
BH590	3/27/1995	I76609	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L	0.1	
BP313	3/27/1995	I9750881	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BP309	4/12/1995	168387	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
AY032	4/17/1995	IF023129	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.42	MG/L		
ES865	4/17/1995	IF023130	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.42	MG/L		
ES738	4/18/1995	I9760630	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.3		0.10	
EZ004	4/26/1995	169705	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	
GT012	5/1/1995	95W1111	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L		
GH435	6/6/1995	BF078838	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.09	MG/L	0.06	
ES715	6/7/1995	81867	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
ES717	6/7/1995	81868	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.1	
BP307	6/14/1995	I134105	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.54	MG/L		
ES716	6/20/1995	82986	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BP306	7/25/1995	18859	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31	MG/L	0.1	
GO596	8/1/1995	14902	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.85	MG/L		
ES724	9/26/1995	I50806	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.274	MG/L	0.003	
ES771	10/31/1995	92848	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48	MG/L	0.1	
FG133	11/16/1995	19755861	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	0.1	
EZ003	12/18/1995	IG018850	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.09	MG/L	0.06	0.2
GM370	3/18/1996	20933436	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BP300	4/9/1996	21208588	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	
BP309	5/6/1996	104525	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
KU372	5/22/1996	217549	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L	0.1	
GM365	10/7/1996	IH010120	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.07	MG/L	0.06	0.2
KU372	1/13/1997	24634446	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L	0.1	
KX779	3/3/1997	IH019228	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.51	MG/L		
FR474	4/8/1997	061024000	951	FLUORIDE TOTAL		7			
KY852	5/7/1997	IH024636	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L		
KT498	7/14/1997	BI003516	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.06	MG/L	0.031	
KX159	2/2/1998	30438183	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L	0.1	
FX054	2/3/1998	28002511	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.39	MG/L	0.10	
EF758	2/3/1998	185929	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	0.05	
BP313	2/9/1998	8260408	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BP317	6/4/1998	32815860	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
ES771	6/18/1998	8300775	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	
ES728	7/19/1998	8310756	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	0.1	
BP307	7/30/1998	I175243	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.34	MG/L	0.1	
AY032	8/11/1998	IJ004628	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.45	MG/L		
ES865	8/11/1998	IJ004629	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.44	MG/L		
ES715	8/17/1998	28010845	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.26	MG/L		
ES716	8/17/1998	28010846	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L		
ES717	8/17/1998	28010847	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L		
BM458	9/1/1998	IJ006314	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3	MG/L		
KS415	9/28/1998	IJ008222	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.26	MG/L		
FX589	11/5/1998	219265	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	.002	
FH035	11/5/1998	219266	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21	MG/L	.002	
EZ003	11/10/1998	IJ011156	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.06	MG/L	0.031	0.10
ES724	11/16/1998	I73926	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37	MG/L	0.002	
BP309	11/30/1998	IJ012438	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L		
GT012	12/2/1998	887240-1	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21	MG/L	0.015	

GO596	12/3/1998 23146	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.88 MG/L		
EZ004	12/9/1998 37526667	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4 MG/L	0.1	
IZ671	12/15/1998 188438	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72 MG/L	0.1	
BH039	3/17/1999 I194987	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24 MG/L	0.1	
BH038	4/12/1999 I197631	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.42 MG/L	0.1	
BH037	4/12/1999 I197629	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.36 MG/L	0.1	
GM365	4/13/1999 I197601	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.092 MG/L	0.1	
BH004	4/13/1999 I197602	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.089 MG/L	0.1	
FR455	4/15/1999 BJ057963	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21 MG/L		
JA221	5/5/1999 I200119	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	0.1	
GM370	5/5/1999 I200120	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	0.1	
MM036	6/8/1999 IJ024508	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.08 MG/L	0.031	0.10
BH006	6/10/1999 415306-07	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	0.1	
IZ671	6/21/1999 204472	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.73 MG/L	0.1	
BH028	7/21/1999 9931582	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.83 MG/L	0.076	
BH029	7/21/1999 993158	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.71 MG/L	0.076	
MW184	7/26/1999 BK006730	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.04 MG/L	0.031	0.10
BH024	8/24/1999 I210084	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.75 MG/L	0.1	
KU372	8/24/1999 I210085	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.65 MG/L	0.1	
AY324	8/24/1999 210083	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5 MG/L	0.1	
BH025	9/2/1999 249386	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.08 MG/L	.002	
BH020	9/22/1999 I212900	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	0.1	
BH021	9/22/1999 I212901	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11 MG/L	0.1	
BH005	9/22/1999 43941617	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	0.1	
BH005	9/22/1999 439416-17	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	0.1	
BH035	9/28/1999 44168485	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	0.1	
BH033	9/28/1999 44163334	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	0.1	
BH034	9/28/1999 44165152	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	0.1	
BH040	9/28/1999 44169394	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
BH030	9/28/1999 44166263	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
BH032	9/28/1999 44167374	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
BH022	9/29/1999 017424	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.74 MG/L		
BH027	10/4/1999 I213961	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.071 MG/L	0.1	
BH007	11/2/1999 I217076	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.2 MG/L	0.1	
BH008	11/2/1999 I217077	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48 MG/L	0.1	
LK037	11/10/1999 I218077	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.073 MG/L	0.1	
IZ056	11/18/1999 45397880	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4 MG/L	0.1	
ES724	11/29/1999 I80874	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33 MG/L	0.002	
BH026	12/6/1999 I787	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.09 MG/L	.002	
BP300	3/6/2000 475751-52	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3 MG/L	0.1	
NG999	5/8/2000 002704	951	FLUORIDE TOTAL		20		
IZ056	5/9/2000 492731-33	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5 MG/L	0.1	
NG912	6/27/2000 IK031738	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.031	0.10
IN090	11/2/2000 IL010968	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25 MG/L		
BP305	12/6/2000 246470	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	0.1	
EZ004	4/10/2001 593221+23	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4 MG/L	0.1	4
EF758	4/17/2001 I253485	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	0.1	
BP317	4/24/2001 598160+62	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
BM458	5/21/2001 IL024467	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32 MG/L	0.031	0.10
ES865	6/25/2001 IL028790	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.52 MG/L	0.031	0.10
AY032	6/25/2001 IL028791	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48 MG/L	0.031	0.10
BP309	6/25/2001 IL028680	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11 MG/L	0.031	0.10
FX054	7/24/2001 31012095	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32 MG/L		
KC243	8/20/2001 IM004566	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48 MG/L	0.031	0.10
FX589	8/20/2001 83121	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27 MG/L	.002	
FH035	8/20/2001 83143	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23 MG/L	.002	
BH590	8/20/2001 83136	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	.002	
ES728	8/22/2001 I40079433	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.63 MG/L	0.1	
ES771	8/24/2001 263216	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5 MG/L	0.1	
ES715	8/29/2001 31014229	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L		
AK340	8/29/2001 31014231	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L		
ES716	8/29/2001 31014230	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L		
IZ671	9/4/2001 263888	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.8 MG/L	0.1	
IQ706	9/4/2001 IM006146	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	0.031	0.10
ES724	9/11/2001 92193	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3 MG/L	0.002	
IZ047	9/17/2001 I264974	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	0.1	
BP307	9/27/2001 IM009195	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31 MG/L	.1	
GT012	9/28/2001 266362	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	0.1	
KX159	12/5/2001 992503-04	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6 MG/L	0.1	
BP306	1/21/2002 I273745	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.29 MG/L	0.1	
BH038	2/11/2002 I274733	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48 MG/L	0.1	
BH037	2/11/2002 274732	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.35 MG/L	0.1	
BH028	2/19/2002 5037537A	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47 MG/L		
BH029	2/19/2002 5037538A	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31 MG/L		
BH020	3/6/2002 I276004	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24 MG/L	0.1	
BH021	3/6/2002 I276005	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	0.1	
KX159	3/12/2002 712767-68	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5 MG/L	0.1	
JA221	3/18/2002 276903	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22 MG/L	0.1	
GM370	3/18/2002 I276904	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	0.1	
BH024	5/2/2002 I280797	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72 MG/L	0.1	
KU372	5/2/2002 I280799	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.68 MG/L	0.1	
AY324	5/2/2002 I280798	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47 MG/L	0.1	
BH027	6/26/2002 285343	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.068 MG/L	0.1	
BH005	8/20/2002 289013	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	0.1	
BH006	8/20/2002 I289014	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	0.1	
BH039	8/22/2002 289465	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.26 MG/L	0.1	
BH025	8/29/2002 145825	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	.002	
LK037	8/29/2002 145826	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	.002	
GM365	9/17/2002 I291361	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.082 MG/L	0.1	
BH004	9/17/2002 291360	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.082 MG/L	0.1	
PT012	9/26/2002 I292536	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	0.1	
BH035	10/22/2002 805161-62	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	0.1	
BH033	10/22/2002 805154-55	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	0.1	
BH032	10/22/2002 805143-44	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
BH030	10/22/2002 805139-40	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
BH034	10/22/2002 805158-59	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
BH040	10/22/2002 805164-65	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
OO270	11/7/2002 IN010944	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27 MG/L	0.031	0.10
BH022	6/12/2003 312497	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32 MG/L	0.1	
GT012	6/24/2003 I313750	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	0.1	
RD045	8/14/2003 317525I	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	0.1	
GO596	8/25/2003 318297	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.95 MG/L	0.1	
ES715	1/22/2004 330117	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	0.1	
ES716	1/28/2004 I330343	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	0.1	
BM458	2/16/2004 IO015386	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25 MG/L	0.031	0.10
BP317	2/24/2004 1004239-40	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
ES716	3/3/2004 I332172	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	0.1	
RM262	3/8/2004 IO016631	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25 MG/L	0.031	0.10
EZ004	3/16/2004 1013343-44	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4 MG/L	0.1	
IZ671	3/17/2004 I333585	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.75 MG/L	0.1	
ES724	3/23/2004 I334018	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31 MG/L	0.1	
RU937	4/12/2004 IO018615	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.53 MG/L	0.031	0.10

ES771	5/12/2004 338824	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48 MG/L	0.1	
FX054	6/8/2004 I341603	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.41 MG/L	0.1	
ES865	7/6/2004 IP000636	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.53 MG/L	0.031	0.10
AY032	7/6/2004 IP000514	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.46 MG/L	0.031	0.10
IQ706	8/17/2004 347245	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	0.1	
GO596	8/18/2004 347370	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.87 MG/L	0.050	0.10
FH035	8/30/2004 271584	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.424 MG/L	0.17	0.56
FX589	8/30/2004 271579	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.324 MG/L	0.17	0.56
BH590	8/30/2004 271582	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.227 MG/L	0.17	0.56
BP309	9/13/2004 IP007779	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.08 MG/L	0.031	0.10
KX159	9/21/2004 1106860-61	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6 MG/L	0.1	
RD045	9/21/2004 351109	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	0.1	
PT012	9/22/2004 351014	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21 MG/L	0.1	
BP307	9/29/2004 I351687	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3 MG/L	0.1	
BP306	10/5/2004 352358	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31 MG/L	0.1	
AK340	12/15/2004 358680	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	0.050	0.10
FA105	1/11/2005 BP038275	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72 MG/L	0.031	0.10
BH038	2/21/2005 362328	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48 MG/L	0.050	0.10
BH037	2/21/2005 362326	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.36 MG/L	0.050	0.10
GM365	3/15/2005 364327	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.098 MG/L	0.050	0.10
BH004	3/15/2005 364324	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.092 MG/L	0.050	0.10
JA221	4/12/2005 367351	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24 MG/L	0.050	0.10
GM370	4/12/2005 367352	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	0.050	0.10
BH027	6/1/2005 372633	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.081 MG/L	0.050	0.10
RZ848	7/28/2005 35014299	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.9 MG/L		
BH028	7/28/2005 35014297	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.8 MG/L		
BH029	7/28/2005 35014298	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7 MG/L		
BH005	7/28/2005 380641	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	0.050	0.10
BH006	7/28/2005 380642	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	0.050	0.10
BH020	8/25/2005 383258	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27 MG/L	0.050	0.10
BH021	8/25/2005 383260	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	0.050	0.10
BH039	8/30/2005 383562	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27 MG/L	0.050	0.10
KU372	9/20/2005 385932	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.73 MG/L	0.050	0.10
BH024	9/20/2005 385929	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.71 MG/L	0.050	0.10
AY324	9/20/2005 385926	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5 MG/L	0.050	0.10
BH033	9/22/2005 1315581-84	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	0.1	
BH035	9/22/2005 1315607-10	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	0.1	
BH034	9/22/2005 1315568-71	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	0.1	
BH032	9/22/2005 1315594-97	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
BH040	9/22/2005 1315620-23	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.1	
BH030	9/28/2005 1318533-36	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0 MG/L		0.1
BH022	9/30/2005 387532	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.29 MG/L	0.050	0.10
TV908	10/31/2005 351632	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.45 MG/L	.002	
QS360	2/3/2006 IQ015413	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.09 MG/L	0.031	0.10
GT012	8/17/2006 415207	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	0.050	0.10
ES771	2/21/2007 431916	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.55 MG/L	0.050	0.10
TF666	2/22/2007 IR016077	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	0.031	0.10
FX054	3/19/2007 434197	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.38 MG/L	0.050	0.10
RD045	3/19/2007 0703260-01	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.28 MG/L	0.1	
BM458	4/2/2007 IR017921	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27 MG/L	0.031	0.10
ES865	4/16/2007 IR018780	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.46 MG/L	0.031	0.10
AY032	4/16/2007 IR018781	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37 MG/L	0.031	0.10
BP306	5/1/2007 469693	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49 MG/L	0.060	0.19
BP309	5/14/2007 IR021407	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.09 MG/L	0.031	0.10
HB022	7/10/2007 IS000866	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.28 MG/L	0.031	0.10
ES724	7/17/2007 447136	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.29 MG/L	0.050	0.10
BP317	7/31/2007 1677214	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L		0.1
BP307	8/8/2007 AC47300	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.313 MG/L		
TE954	8/13/2007 449966	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.59 MG/L	0.050	0.10
IQ706	9/5/2007 452566	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	0.050	0.10
PT012	9/11/2007 453547	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22 MG/L	0.050	0.10
SA121	9/19/2007 454868	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21 MG/L	0.050	0.10
RZ873	9/19/2007 454864	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	0.050	0.10
AK340	9/19/2007 454876	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	0.050	0.10
ES716	9/19/2007 454872	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	0.050	0.10
BH590	9/25/2007 505121	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.38 MG/L	0.13	0.45
TB898	9/25/2007 1713521	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L		0.1
TQ043	10/3/2007 456571	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	0.050	0.10
TQ726	10/3/2007 456579	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	0.050	0.10
IZ671	12/12/2007 7120395-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.82 MG/L	0.10	
BH038	3/4/2008 469361	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48 MG/L	0.050	0.10
BH037	3/4/2008 469363	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.39 MG/L	0.050	0.10
BH027	3/13/2008 470617	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11 MG/L	0.050	0.10
GT012	4/22/2008 475526	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22 MG/L	0.050	0.10
VL312	6/3/2008 480378	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	0.050	0.10
GM365	6/3/2008 480375	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.084 MG/L	0.050	0.10
BH039	7/9/2008 485960	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3 MG/L	0.050	0.10
JA221	7/21/2008 487057	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21 MG/L	0.050	0.10
GM370	7/21/2008 487059	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	0.050	0.10
RZ848	7/22/2008 38015407	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7 MG/L	0.100	
BH028	7/22/2008 38015405	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6 MG/L	0.100	
BH029	7/22/2008 38015406	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4 MG/L	0.100	
BH025	8/13/2008 490125	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.092 MG/L	0.050	0.10
LK037	8/13/2008 490127	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.073 MG/L	0.050	0.10
BH033	9/3/2008 IT006093	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	0.031	0.10
BH035	9/3/2008 IT006088	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	0.031	0.10
BH040	9/3/2008 IT006092	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.08 MG/L	0.031	0.10
BH034	9/3/2008 IT006089	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.07 MG/L	0.031	0.10
BH030	9/3/2008 IT006091	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.07 MG/L	0.031	0.10
BH032	9/3/2008 IT006090	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.05 MG/L	0.031	0.10
BH005	9/4/2008 493046	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	0.050	0.10
BH006	9/4/2008 493048	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	0.050	0.10
BH021	9/16/2008 494925	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	0.050	0.10
BH020	9/16/2008 494926	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	0.050	0.10
KU372	9/23/2008 496068	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.63 MG/L	0.050	0.10
BH024	9/23/2008 496066	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.57 MG/L	0.050	0.10
AY324	9/23/2008 496064	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.43 MG/L	0.050	0.10
TU514	9/26/2008 496495	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25 MG/L	0.050	0.10
BH022	9/30/2008 497195	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23 MG/L	0.050	0.10
US905	10/19/2008 IT010729	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32 MG/L	0.031	0.10
TF691	4/22/2009 IT019701	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49 MG/L	0.031	0.10
GT012	8/19/2009 533335	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	0.050	0.10
BP305	9/16/2009 536595	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	0.050	0.10
BP300	9/22/2009 302985	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	0.3	
SA121	2/3/2010 551191	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	0.050	0.10
RZ873	2/3/2010 551194	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	0.050	0.10
ES716	2/3/2010 551181	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	0.050	0.10
TQ726	2/3/2010 551186	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	0.050	0.10
TQ043	2/3/2010 551189	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	0.050	0.10
AK340	3/8/2010 554765	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	0.050	0.10
BM458	3/10/2010 307897	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.59 MG/L	0.3	
IZ671	3/24/2010 0030897-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.71 MG/L	.13	

ES865	4/20/2010 IU017149	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.53 MG/L	.031	.1
AY032	4/20/2010 IU017148	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.41 MG/L	.031	.1
BP309	5/3/2010 IU018151	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	.031	.1
BP317	6/1/2010 IU021140	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	.031	.1
BP307	7/28/2010 AD17547	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3 MG/L		
BP306	8/19/2010 1008306-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37 MG/L	.1	
GO596	8/23/2010 578016	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49 MG/L	.05	.1
TE954	8/23/2010 578014	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47 MG/L	.05	.1
IQ706	8/25/2010 578638	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	.05	.1
ES724	9/7/2010 580581	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.28 MG/L	.05	.1
ES771	9/17/2010 583225	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5 MG/L	.05	.1
PT012	9/21/2010 583439	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.068 MG/L	.05	.1
FX589	9/22/2010 1009427-01	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.31 MG/L	.1	
TB898	9/22/2010 1009429-01	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.3 MG/L	.1	
BH027	1/25/2011 598624	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.065 MG/L	.05	.1
BH038	1/26/2011 598779	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.43 MG/L	.05	.1
BH037	1/26/2011 598776	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.34 MG/L	.05	.1
BH039	6/7/2011 614917	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27 MG/L	.05	.1
TU514	6/7/2011 614913	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23 MG/L	.05	.1
JA221	6/7/2011 614908	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	.05	.1
GM370	6/7/2011 614910	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	.05	.1
RZ848	6/21/2011 41014373	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.78 MG/L	.1	
BH028	6/21/2011 41014374	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.56 MG/L	.1	
BH029	6/21/2011 41014372	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37 MG/L	.1	
BH025	6/22/2011 618024	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.076 MG/L	.05	.1
LK037	6/22/2011 618027	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.065 MG/L	.05	.1
BH006	8/24/2011 628664	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	.05	.1
BH005	8/24/2011 628663	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	.05	.1
VL312	9/15/2011 633039	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11 MG/L	.05	.1
GM365	9/15/2011 633036	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.098 MG/L	.05	.1
BH034	9/19/2011 IW006642	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11 MG/L	.031	.1
BH022	9/20/2011 IW006734	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27 MG/L	.031	.1
BH035	9/21/2011 IW007054	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	.031	.1
BH033	9/21/2011 IW007052	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	.031	.1
BH040	9/21/2011 IW007055	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	.031	.1
BH032	9/21/2011 IW007056	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	.031	.1
BH030	9/21/2011 IW007053	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	.031	.1
BH020	9/26/2011 634855	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	.05	.1
BH021	9/26/2011 634858	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	.05	.1
BH024	9/27/2011 635195	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.66 MG/L	.05	.1
AY324	9/27/2011 635188	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49 MG/L	.05	.1
KU372	11/8/2011 641303	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72 MG/L	.05	.1
TK065	1/10/2012 BW031157	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33 MG/L	0.031	0.10
SN152	5/29/2012 IW019431	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.01 MG/L	0.031	0.10
WU998	9/10/2012 340488	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.35 MG/L	.3	.9
TU517	9/11/2012 682665	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	.05	.1
GT012	9/11/2012 682644	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	.05	.1
BP317	3/5/2013 IX016320	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22 MG/L	.031	.1
PT012	3/25/2013 711249	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	.05	.1
ES865	4/15/2013 IX018897	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.52 MG/L	.031	.1
AY032	4/15/2013 IX018898	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4 MG/L	.031	.1
BP309	6/11/2013 78819001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.107 MG/L	.03	.3
BM458	7/23/2013 352165	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.31 MG/L	.3	.9
BP307	7/29/2013 AD68760	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.277 MG/L	.01	
TE954	8/6/2013 735501	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.51 MG/L	.05	.1
TB898	9/9/2013 3090287-01	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.22 MG/L	.13	
RD045	9/9/2013 3090291-01A	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.18 MG/L	.13	
ES771	9/23/2013 747137	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.51 MG/L	.05	.1
IZ671	9/24/2013 3091079-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.28 MG/L	.13	
IQ706	9/25/2013 748089	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	.05	.1
ES724	11/26/2013 358414	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.3	.9
WQ175	12/19/2013 114422001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.0956 MG/L	.03	.3
BH027	2/24/2014 771669	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.052 MG/L	.05	.1
BH038	3/10/2014 773640	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37 MG/L	0.050	0.10
BH037	3/10/2014 773637	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31 MG/L	0.050	0.10
BH033	3/24/2014 124636005	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.192 MG/L	0.030	0.300
BH035	3/24/2014 124636001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.163 MG/L	0.030	0.300
BH034	3/24/2014 124636003	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.102 MG/L	0.030	0.300
BH040	3/24/2014 124636002	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.0976 MG/L	0.030	0.300
BH032	3/24/2014 124636006	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.0879 MG/L	0.030	0.300
BH030	3/24/2014 124636004	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.0844 MG/L	0.030	0.300
BH022	4/8/2014 126687001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27 MG/L	0.030	0.300
JA221	4/9/2014 779162	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22 MG/L	0.050	0.10
TU514	4/9/2014 779168	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22 MG/L	0.050	0.10
GM370	4/9/2014 779165	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	0.050	0.10
RZ848	5/28/2014 793273	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.95 MG/L	0.050	0.10
BH028	5/28/2014 793271	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.69 MG/L	0.050	0.10
BH029	5/28/2014 793272	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.45 MG/L	0.050	0.10
BH025	7/16/2014 803910	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.078 MG/L	0.050	0.10
LK037	7/16/2014 803913	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.068 MG/L	0.050	0.10
VL312	7/23/2014 805279	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.086 MG/L	0.050	0.10
GM365	7/23/2014 805275	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.07 MG/L	0.050	0.10
BH039	7/24/2014 805781	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23 MG/L	0.050	0.10
BH006	8/13/2014 4080509-02	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	0.005	
BH020	8/27/2014 813710	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	0.050	0.10
BH021	8/27/2014 813711	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	0.050	0.10
BH024	9/16/2014 819200	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7 MG/L	0.050	0.10
KU372	9/16/2014 819202	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.67 MG/L	0.050	0.10
AY324	9/16/2014 819198	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.43 MG/L	0.050	0.10
WU998	7/28/2015 389212	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.46 MG/L	.3	.9
TU517	8/25/2015 5081033-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	.004	
GT012	8/25/2015 5081033-02	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	.004	
MW167	1/26/2016 903148	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.55 MG/L	.05	.1
PU277	2/23/2016 906482	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.76 MG/L	.05	.1
XP679	2/23/2016 906486	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.76 MG/L	.05	.1
BP307	4/5/2016 AE11318	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.294 MG/L		
ES865	6/6/2016 258379001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.572 MG/L	.03	.1
AY032	6/6/2016 258378001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.414 MG/L	.03	.1
ES724	6/15/2016 411352	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.27 MG/L	.11	.36
BM458	6/15/2016 411343	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.19 MG/L	.11	.36
BP309	8/23/2016 273859001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.075 MG/L	.03	.1
BH590	9/7/2016 6090252-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	.003	
TE954	9/12/2016 944497	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.55 MG/L	.05	.1
GO596	9/12/2016 944494	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.55 MG/L	.05	.1
PT012	9/20/2016 946819	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2 MG/L	.05	.1
TB898	9/20/2016 6090827-06	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	.003	
FX589	9/20/2016 6090816-06	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.003	
IQ706	9/21/2016 947474	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	.05	.1
YR115	11/16/2016 1611C78-001C	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	.017	.053
SJ161	12/20/2016 967211	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.54 MG/L	.05	.1
BH033	1/16/2017 296326003	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.175 MG/L	.03	.1
BH035	1/16/2017 296326001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.157 MG/L	.03	.1

BH034	1/16/2017 296326006	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0966 MG/L	.03	.1
WQ175	1/16/2017 296326005	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0843 MG/L	.03	.1
BH040	1/16/2017 296326002	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0834 MG/L	.03	.1
BH032	1/16/2017 296326004	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0795 MG/L	.03	.1
BH030	1/30/2017 297917001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.108 MG/L	.03	.1
BH027	2/13/2017 973320	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.085 MG/L	.05	.1
BH020	3/20/2017 1703D23-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	.017	.053
BH021	3/20/2017 1703D30-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13 MG/L	.017	.053
BH024	5/1/2017 1705208-002B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.64 MG/L	.017	.053
AY324	5/1/2017 1705208-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47 MG/L	.017	.053
FW168	6/1/2017 438196	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.23 MG/L	.12	.4
RZ848	6/20/2017 999093	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1 MG/L	.05	.1
BH028	6/20/2017 999087	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7 MG/L	.05	.1
BH029	6/20/2017 999090	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47 MG/L	.05	.1
KU372	7/19/2017 1707F53-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.73 MG/L	.017	.053
VL312	8/1/2017 1007984	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.099 MG/L	.05	.1
GM365	8/1/2017 1007981	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.086 MG/L	.05	.1
BH038	8/2/2017 1008438	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.44 MG/L	.05	.1
BH037	8/2/2017 1008433	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33 MG/L	.05	.1
BH022	8/15/2017 336271001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.244 MG/L	.03	.1
BH039	8/21/2017 1012772	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.26 MG/L	.05	.1
TU514	8/21/2017 1012762	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25 MG/L	.05	.1
JA221	8/21/2017 1012755	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	.05	.1
BH006	8/21/2017 1012884	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L	.05	.1
GM370	8/21/2017 1012757	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	.05	.1
BH005	8/21/2017 1012887	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12 MG/L	.05	.1
YP984	9/12/2017 1017643	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.8 MG/L	.05	.1
YP985	9/12/2017 1017646	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.54 MG/L	.05	.1
BH025	9/12/2017 1017512	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.08 MG/L	.05	.1
LK037	9/12/2017 1017515	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.067 MG/L	.05	.1
BP300	1/30/2018 458291	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.38 MG/L	.12	.4
WU998	1/30/2018 458304	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.31 MG/L	.12	.4
FW168	1/31/2018 458356	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.34 MG/L	.12	.4
TU517	8/20/2018 1074827	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	.05	.1
GT012	11/12/2018 1811B07-001A	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	.0217	.069
ES724	2/18/2019 489675	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.2	.67
BP305	2/26/2019 490295	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.2	.67
FW168	3/4/2019 490574	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.2	.67
BM458	3/6/2019 490804	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.2	.67
TE954	3/22/2019 491868	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.4 MG/L	.2	.67
RD045	4/5/2019 493015	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.2	.67
IQ706	4/16/2019 493782	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.2	.67
YR115	4/23/2019 1116845	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	.046	.16
PT012	4/23/2019 494294	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.2	.67
MW167	5/14/2019 1120996	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49 MG/L	.046	.16
ES865	5/22/2019 447769002	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.585 MG/L	.03	.1
AY032	5/22/2019 447769001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.409 MG/L	.03	.1
BP307	5/29/2019 1905208-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32 MG/L		
XP679	6/11/2019 1126874	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.66 MG/L	.046	.16
PU277	6/11/2019 1126870	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.66 MG/L	.046	.16
BP307	6/12/2019 1127378	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.28 MG/L	.046	.16
SJ161	6/18/2019 1128775	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.54 MG/L	.046	.16
IN260	6/18/2019 500174	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.24 MG/L	.17	.57
YP985	7/23/2019 1136222	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.74 MG/L	.046	.16
YP984	7/23/2019 1136220	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.61 MG/L	.046	.16
TB898	8/12/2019 1139995	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22 MG/L	.046	.16
BH590	8/13/2019 1140414	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.14 MG/L	.046	.16
FX589	8/14/2019 1140884	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22 MG/L	.046	.16
BH035	1/21/2020 490304001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.164 MG/L	.03	.1
BH033	1/21/2020 490309001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.145 MG/L	.03	.1
WQ175	1/21/2020 490305001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.107 MG/L	.03	.1
BH034	1/21/2020 490308001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.104 MG/L	.03	.1
BH030	1/21/2020 490310001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0937 MG/L	.03	.1
BH040	1/21/2020 490307001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0929 MG/L	.03	.1
BH032	1/21/2020 490306001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0866 MG/L	.03	.1
FW168	2/24/2020 522752	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.2 MG/L	.17	.57
BH027	5/4/2020 1186150	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.052 MG/L	.046	.16
TU514	6/1/2020 1190745	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23 MG/L	.046	.16
JA221	6/1/2020 1190743	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	.046	.16
GM370	6/1/2020 1190744	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.14 MG/L	.046	.16
RZ848	7/23/2020 1201843	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.99 MG/L	.046	.16
BH028	7/23/2020 1201842	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.69 MG/L	.046	.16
BH029	7/23/2020 1201841	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.44 MG/L	.046	.16
BH020	9/9/2020 1213505	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.13 MG/L	.046	.16
BH021	9/9/2020 1213508	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.12 MG/L	.046	.16
BH022	9/14/2020 526003001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.258 MG/L	.03	.1
BH038	9/16/2020 1215149	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.43 MG/L	.046	.16
BH037	9/16/2020 1215152	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33 MG/L	.046	.16
VL312	9/17/2020 1215335	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.1 MG/L	.046	.16
GM365	9/17/2020 1215338	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.072 MG/L	.046	.16
BH024	9/22/2020 1216845	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72 MG/L	.046	.16
KU372	9/22/2020 1216848	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72 MG/L	.046	.16
AY324	9/22/2020 1216842	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5 MG/L	.046	.16
BH025	9/29/2020 1218581	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.075 MG/L	.046	.16
LK037	9/29/2020 1218584	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.069 MG/L	.046	.16
FW168	5/11/2021 562665	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.43 MG/L	.23	.77
WU998	6/7/2021 564966	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.35 MG/L	.23	.77
GT012	9/20/2021 1278615	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	.027	.1
TU517	9/20/2021 1278616	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	.027	.1
WU998	9/24/2021 575816	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.23	.77
BP307	1/5/2022 2201009-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.248 MG/L	.022	
PT012	1/11/2022 1295582	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17 MG/L	.027	.1
GM370	4/13/2022 1307691	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	.03	.1
PU277	5/24/2022 1314372	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7 MG/L	.03	.1
XP679	5/24/2022 1314375	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.68 MG/L	.03	.1
RD045	6/9/2022 592206	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24 MG/L	.23	
IN260	6/20/2022 593085	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.23	.77
BM458	6/20/2022 593087	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.23	.77
ES724	6/20/2022 593091	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.23	.77
SJ161	6/23/2022 593423	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.51 MG/L	.23	.77
FW168	6/23/2022 593440	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.31 MG/L	.23	.77
FX589	8/9/2022 1328837	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23 MG/L	.03	.1
TB898	8/9/2022 1328849	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22 MG/L	.03	.1
BH590	8/9/2022 1328846	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	.03	.1
GO596	8/15/2022 2208D95-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.741 MG/L	.047	.157
ZX404	8/16/2022 14:15 637478001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.788 MG/L	0.0300	0.100
YR115	8/23/2022 2208L27-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	.047	.157
TE954	9/6/2022 2209567-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.54 MG/L	.047	.157
ES865	9/7/2022 641233001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.574 MG/L	.03	.1
AY032	9/7/2022 641235001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.443 MG/L	.03	.1
MW167	9/20/2022 1337704	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.51 MG/L	.03	.1
IQ706	9/20/2022 1337713	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16 MG/L	.03	.1

FW168	2/20/2023 610274	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.39 MG/L	.23	.77
BH033	3/22/2023 669644001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.135 MG/L	.03	.1
BH034	3/22/2023 669648001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0812 MG/L	.03	.1
WQ175	3/22/2023 669643001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0798 MG/L	.03	.1
BH040	3/22/2023 669646001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0776 MG/L	.03	.1
BH030	3/22/2023 669647001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0682 MG/L	.03	.1
BH032	3/22/2023 669645001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0634 MG/L	.03	.1
BH022	4/6/2023 0455-94	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.28 MG/L	.098	
BH020	4/10/2023 0456-29	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	.098	
BH035	4/18/2023 674002001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.175 MG/L	.03	.1
BH021	5/8/2023 0461-99	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	.098	
ABB059	6/1/2023 WB03191-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23 MG/L	.03	.1
TU514	6/8/2023 CB06215-06	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25 MG/L	.03	.1
JA221	6/8/2023 CB06215-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18 MG/L	.03	.1
GM370	6/8/2023 CB06215-03	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14 MG/L	.03	.1
VL312	6/19/2023 CB06723-04	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.035 MG/L	.03	.1
GM365	6/19/2023 CB06723-01	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.03	.1
RZ848	8/1/2023 CB08913-02	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.93 MG/L	.03	.1
BH028	8/1/2023 CB08911-02	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.68 MG/L	.03	.1
BH029	8/1/2023 CB08912-02	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.45 MG/L	.03	.1
BH038	8/7/2023 CB09187-04	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33 MG/L	.03	.1
BH037	8/7/2023 CB09187-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.28 MG/L	.03	.1
BH039	8/9/2023 CB09400-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24 MG/L	.03	.1
BH006	8/9/2023 CB09403-03	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	.03	.1
BH005	8/9/2023 CB09403-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1 MG/L	.03	.1
BH025	8/22/2023 CB10078-01	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.087 MG/L	.03	.1
LK037	8/22/2023 CB10078-04	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.068 MG/L	.03	.1
BH024	9/12/2023 0496-89	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.65 MG/L	.098	
AY324	9/12/2023 0496-88	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.34 MG/L	.098	
KU372	9/13/2023 0496-90	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72 MG/L	.098	
BH027	9/25/2023 53036777	951	FLUORIDE TOTAL	NON-DETECT	0 MG/L	.1	
FR474	BH061024	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72 MG/L		
FV516	IL021435	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	0.031	0.10
FV516	IL021435	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19 MG/L	0.031	0.10
DB283	ID083426	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15 MG/L		

Appendix C

State Program Background Monitoring Data for Fluoride

GEMS Data Download - Edgewater I-43 Landfill, License 2853, Fluoride Results

Total Rows: 12

Lic#	Point ID	Dup Samp No	Point Name	Point Type Description	Parm Code	Parameter Description	Sample Date	Result Value	Result Unit	Rslt Qual Code	Point Status	QC1	QC2	QC3	LOD	LOQ	RL	Analysis Method Code	Report Period Date	Lab Anal. Date	Sample ID	Lab ID	Pt Key
2853	201	01	W-002	WT Obs Well-Non Sub D	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.52	mg/L	D	A							NOT REPORTED					5108
2853	201	01	W-002	WT Obs Well-Non Sub D	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.43	mg/L	D	A							NOT REPORTED					5108
2853	202	01	W-009	WT Obs Well-Non Sub D	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.84	mg/L	D	I							NOT REPORTED					5109
2853	202	01	W-009	WT Obs Well-Non Sub D	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.5	mg/L	D	I							NOT REPORTED					5109
2853	203	01	W-010B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.71	mg/L	D	A							NOT REPORTED					5110
2853	203	01	W-010B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.5	mg/L	D	A							NOT REPORTED					5110
2853	204	01	W-019B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.49	mg/L	D	P							NOT REPORTED					5111
2853	204	01	W-019B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.43	mg/L	D	P							NOT REPORTED					5111
2853	205	01	W-022B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.47	mg/L	D	A							NOT REPORTED					5112
2853	205	01	W-022B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.48	mg/L	D	A							NOT REPORTED					5112
2853	226	01	GOEBEL WELL	Private Well - Potable	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.74	mg/L	D	A							NOT REPORTED					5133
2853	227	01	BEECK WELL	Private Well - Potable	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.7	mg/L	D	A							NOT REPORTED					5134

Appendix D

Intrawell Statistical Analysis

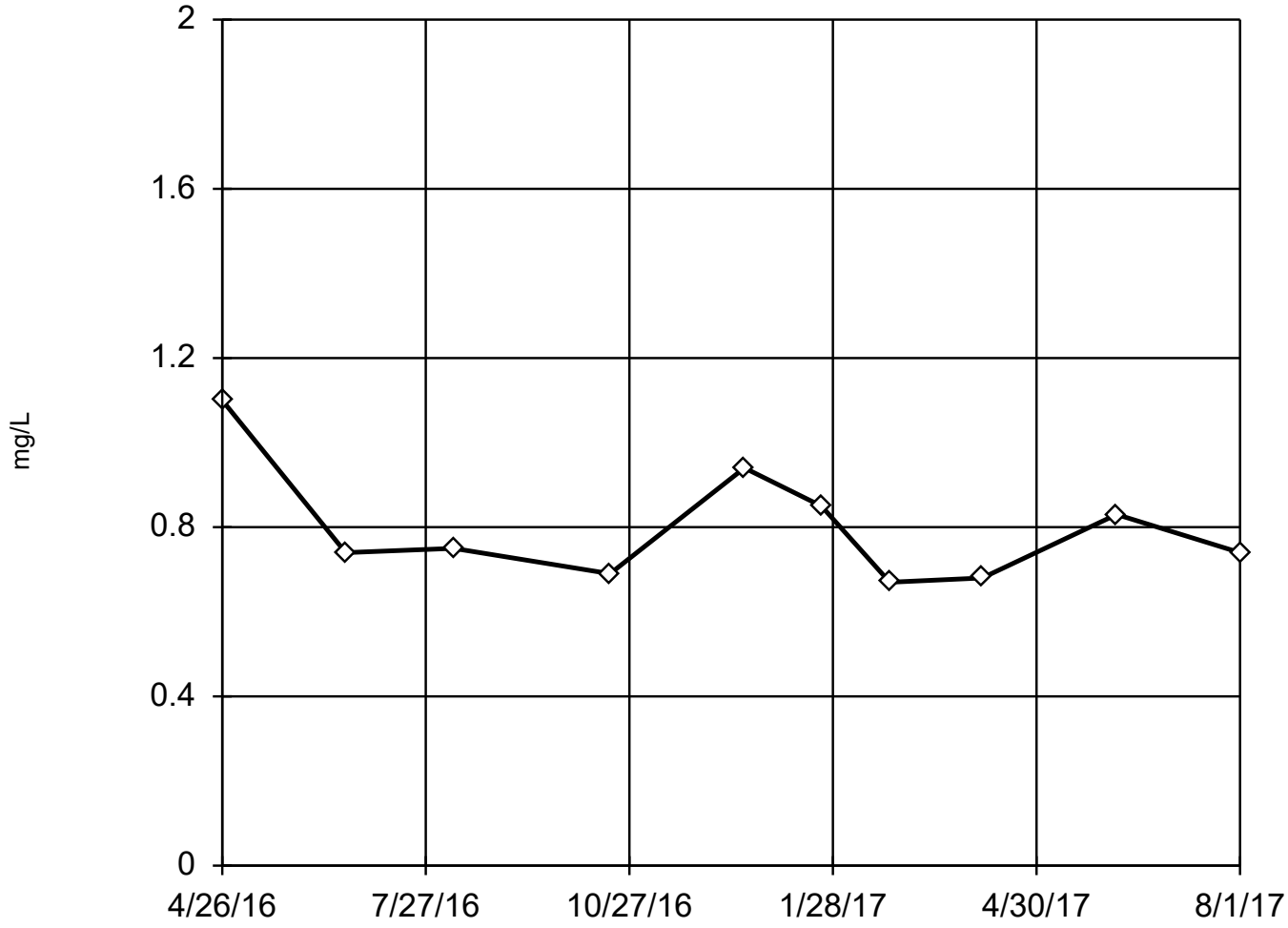
Outlier Analysis

I-43 Ash Disposal Facility Data: I43_2020_Oct_All Printed 3/8/2024, 9:09 AM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Fluoride (mg/L)	MW-302	No	n/a	n/a	EPA 1989	0.05	10	0.799	0.1358	ln(x)	ShapiroWilk

EPA Screening (suspected outliers for Dixon's Test)

MW-302



n = 10

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.799, std. dev. 0.1358, critical Tn 2.176

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.8942
Critical = 0.869 (after natural log transformation)
The distribution was found to be log-normal.

EPA 1989 Outlier Screening Analysis Run 3/8/2024 9:09 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

EPA 1989 Outlier Screening

Constituent: Fluoride (mg/L) Analysis Run 3/8/2024 9:09 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302
4/26/2016	1.1 (J,X)
6/21/2016	0.74
8/9/2016	0.75
10/19/2016	0.69
12/19/2016	0.94 (J)
1/23/2017	0.85 (J)
2/23/2017	0.67
4/6/2017	0.68
6/6/2017	0.83
8/1/2017	0.74

Prediction Limit

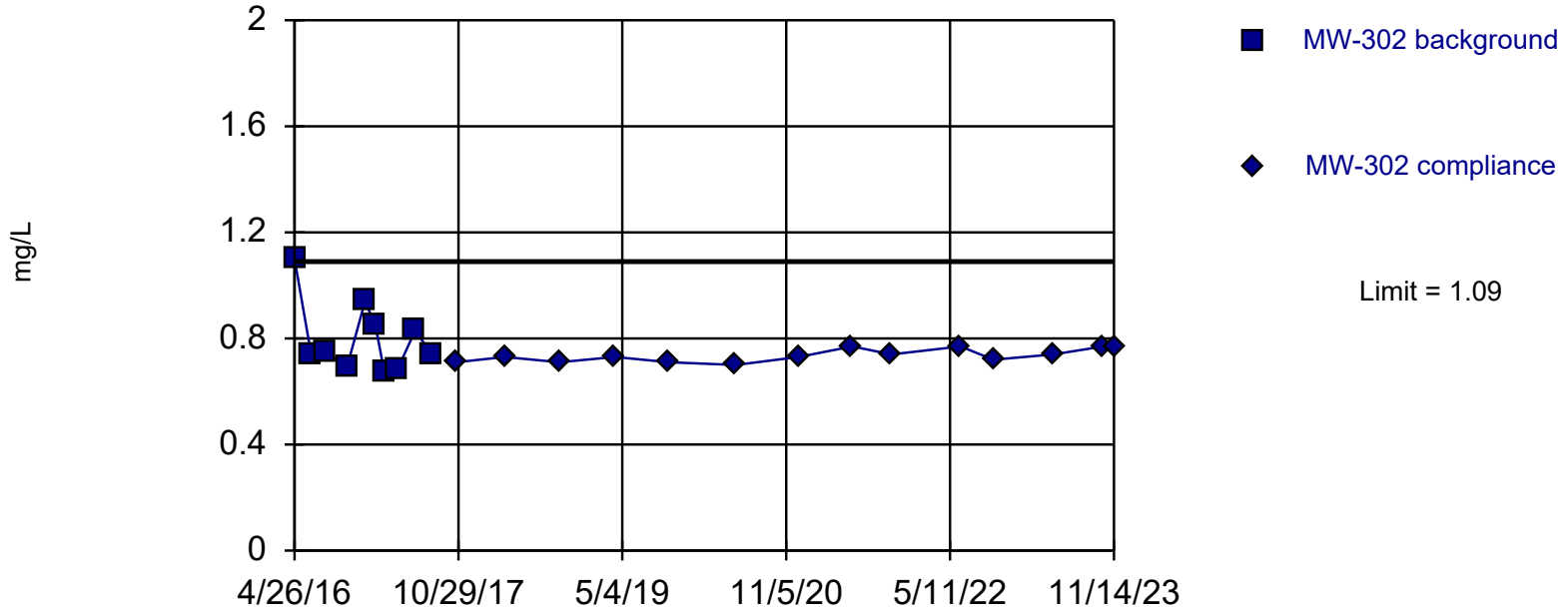
I-43 Ash Disposal Facility Data: I43_2020_Oct_All Printed 3/8/2024, 9:11 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Fluoride (mg/L)	MW-302	1.09	n/a	11/14/2023	0.77	No	10	0	No	0.002922	Param Intra 1 of 2

Within Limit

Fluoride

Intrawell Parametric



Background Data Summary: Mean=0.799, Std. Dev.=0.1358, n=10. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8603, critical = 0.781. Kappa = 2.174 (c=6, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002922.

Prediction Limit Analysis Run 3/8/2024 9:10 AM View: I-43 LF Detection Monitoring

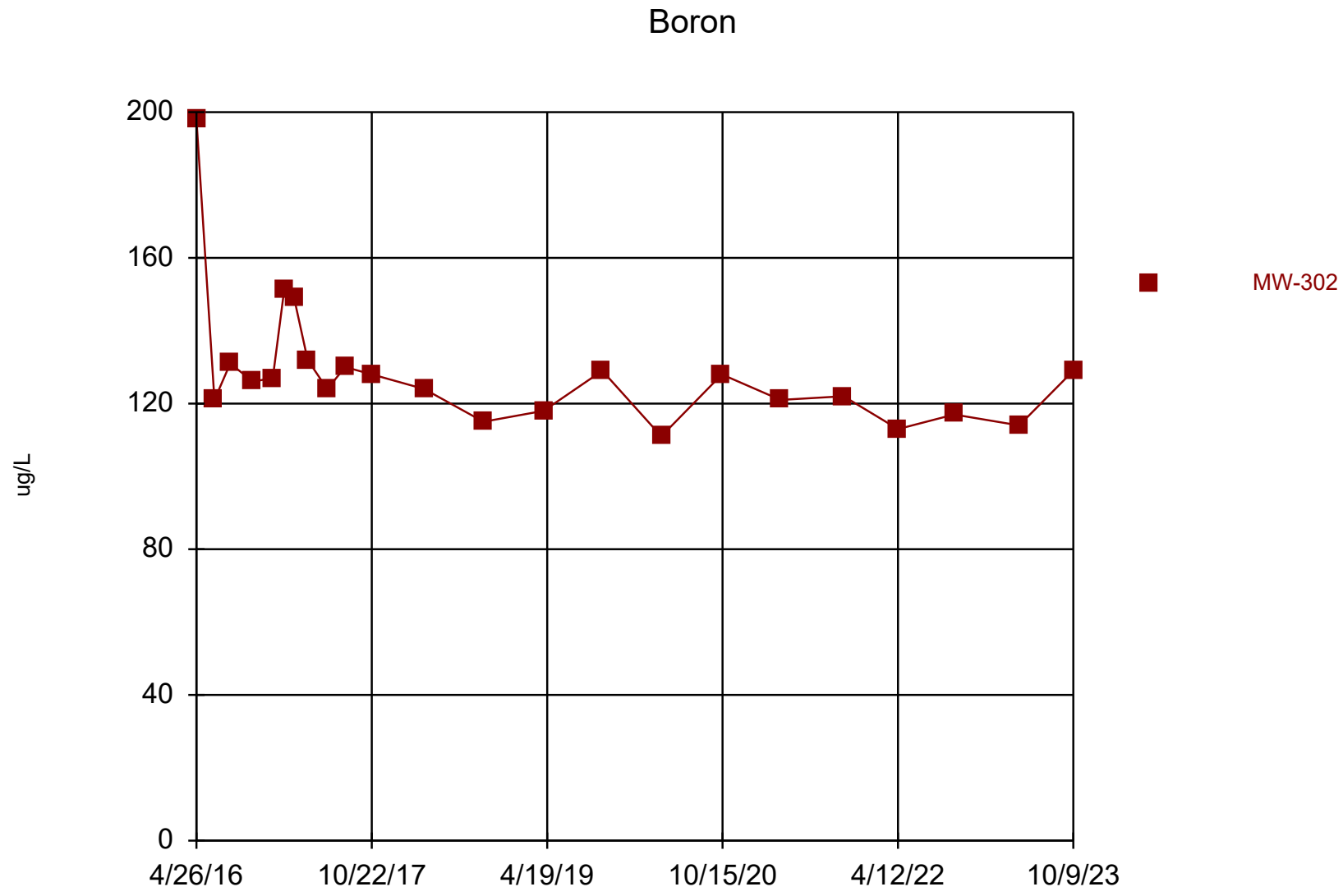
I-43 Ash Disposal Facility Data: I43_2020_Oct_All

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 3/8/2024 9:11 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302	MW-302
4/26/2016	1.1 (J,X)	
6/21/2016	0.74	
8/9/2016	0.75	
10/19/2016	0.69	
12/19/2016	0.94 (J)	
1/23/2017	0.85 (J)	
2/23/2017	0.67	
4/6/2017	0.68	
6/6/2017	0.83	
8/1/2017	0.74	
10/23/2017		0.71
4/3/2018		0.73
10/4/2018		0.71
4/9/2019		0.73
10/8/2019		0.71
5/20/2020		0.7 (R)
12/18/2020		0.73 (R)
6/16/2021		0.77 (R)
10/26/2021		0.74
6/16/2022		0.77 (R)
10/4/2022		0.72
4/24/2023		0.74
10/9/2023		0.77
11/14/2023		0.77



Time Series Analysis Run 3/8/2024 9:03 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

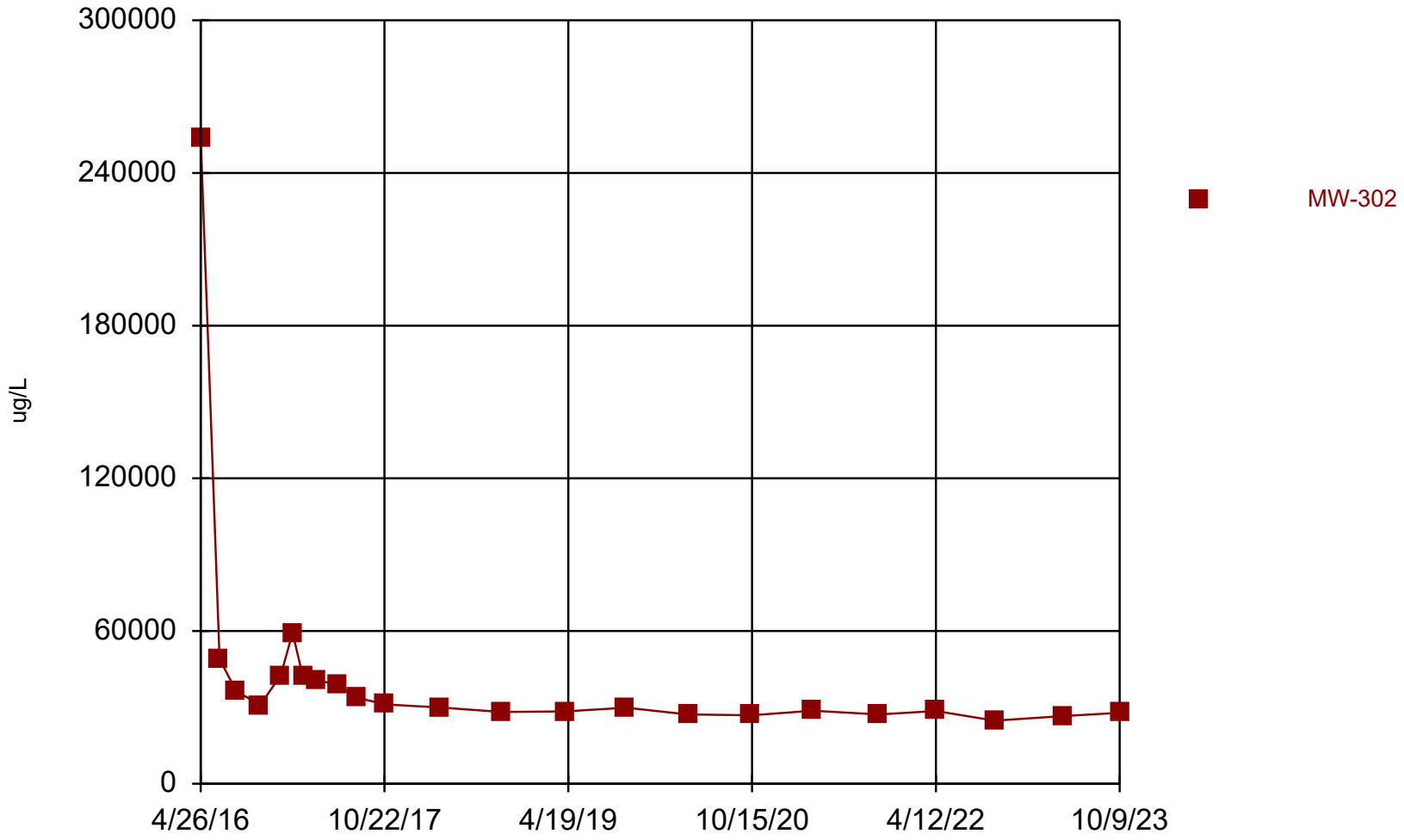
Time Series

Constituent: Boron (ug/L) Analysis Run 3/8/2024 9:04 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302
4/26/2016	198 (X)
6/21/2016	121
8/9/2016	131
10/19/2016	126
12/19/2016	127
1/23/2017	151
2/23/2017	149
4/6/2017	132
6/6/2017	124
8/1/2017	130
10/23/2017	128
4/3/2018	124
10/4/2018	115
4/9/2019	118
10/8/2019	129
4/8/2020	111
10/13/2020	128
4/13/2021	121
10/26/2021	122
4/13/2022	113
10/4/2022	117
4/24/2023	114
10/9/2023	129

Calcium



Time Series Analysis Run 3/8/2024 9:03 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

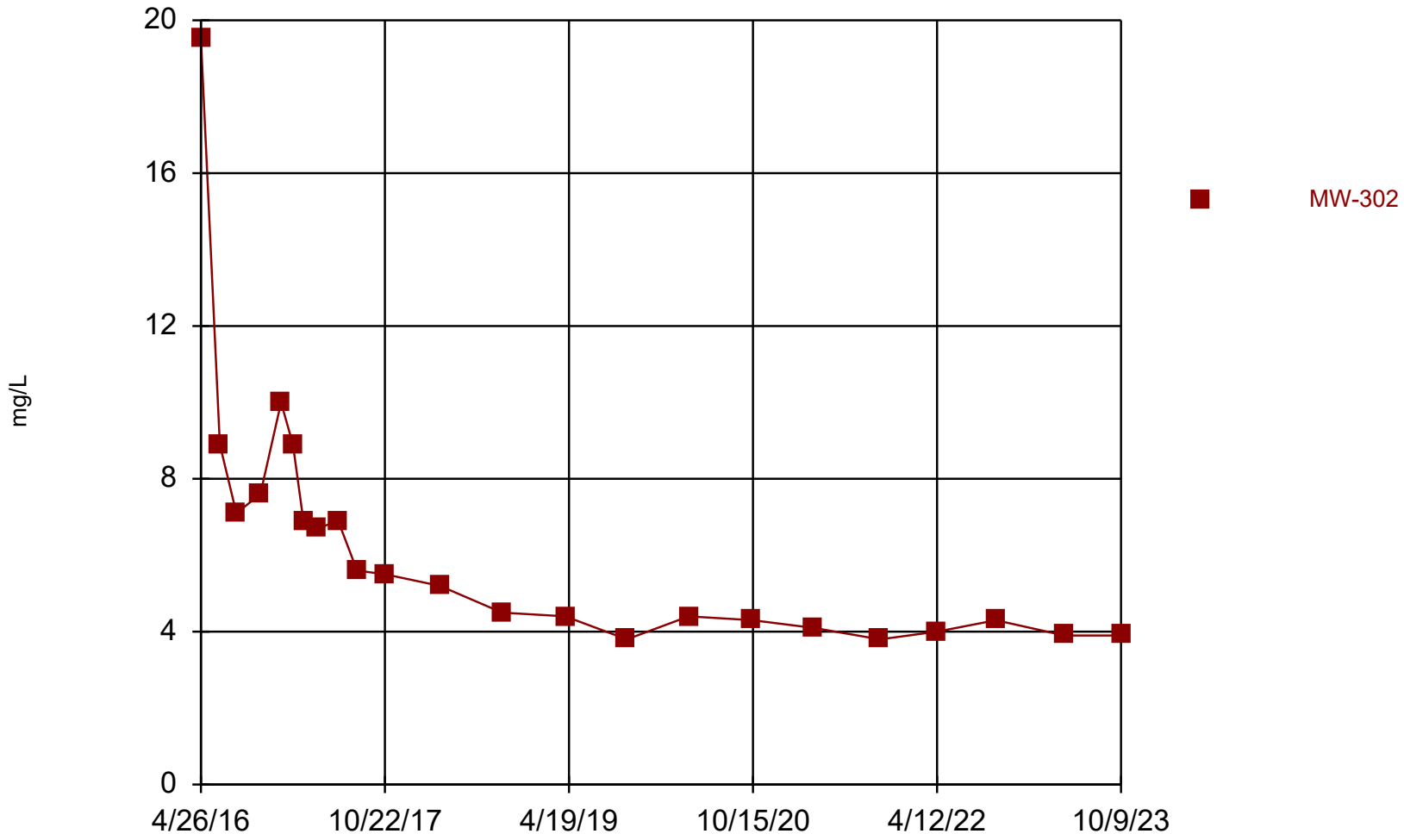
Time Series

Constituent: Calcium (ug/L) Analysis Run 3/8/2024 9:04 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302
4/26/2016	254000
6/21/2016	49000
8/9/2016	36500
10/19/2016	30900
12/19/2016	42600
1/23/2017	59300
2/23/2017	41900
4/6/2017	40800
6/6/2017	38700
8/1/2017	33900
10/23/2017	31200
4/3/2018	30000
10/4/2018	28200
4/9/2019	28400
10/8/2019	29900
4/8/2020	27200
10/13/2020	26900
4/13/2021	28700
10/26/2021	27200
4/13/2022	28600
10/4/2022	24800
4/24/2023	26600
10/9/2023	27900

Chloride



Time Series Analysis Run 3/8/2024 9:03 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

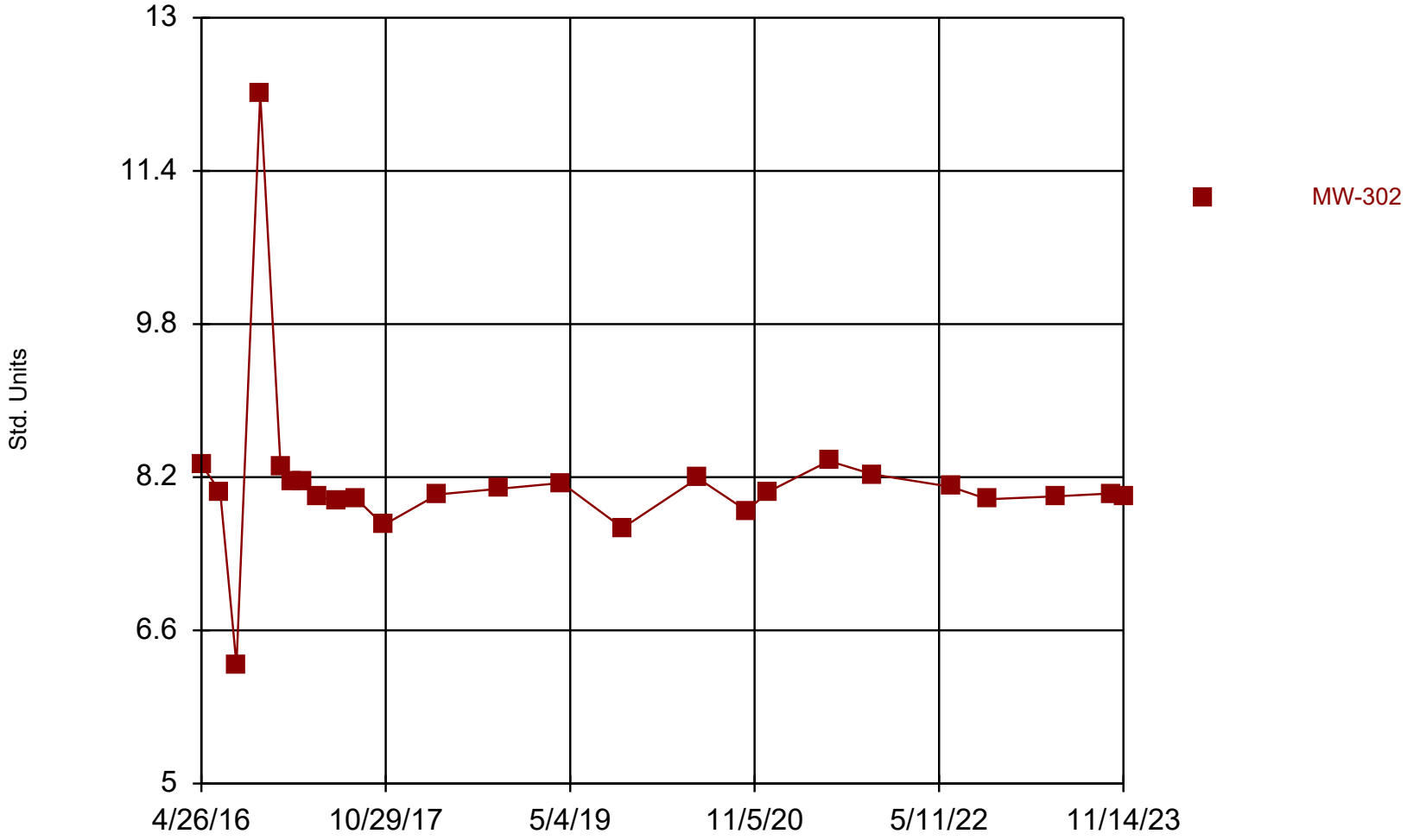
Time Series

Constituent: Chloride (mg/L) Analysis Run 3/8/2024 9:04 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302
4/26/2016	19.5 (J)
6/21/2016	8.9
8/9/2016	7.1
10/19/2016	7.6
12/19/2016	10
1/23/2017	8.9 (J)
2/23/2017	6.9
4/6/2017	6.7
6/6/2017	6.9
8/1/2017	5.6
10/23/2017	5.5
4/3/2018	5.2
10/4/2018	4.5
4/9/2019	4.4
10/8/2019	3.8
4/8/2020	4.4
10/13/2020	4.3
4/13/2021	4.1
10/26/2021	3.8
4/13/2022	4
10/4/2022	4.3
4/24/2023	3.9
10/9/2023	3.9

Field pH



Time Series Analysis Run 3/8/2024 9:03 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

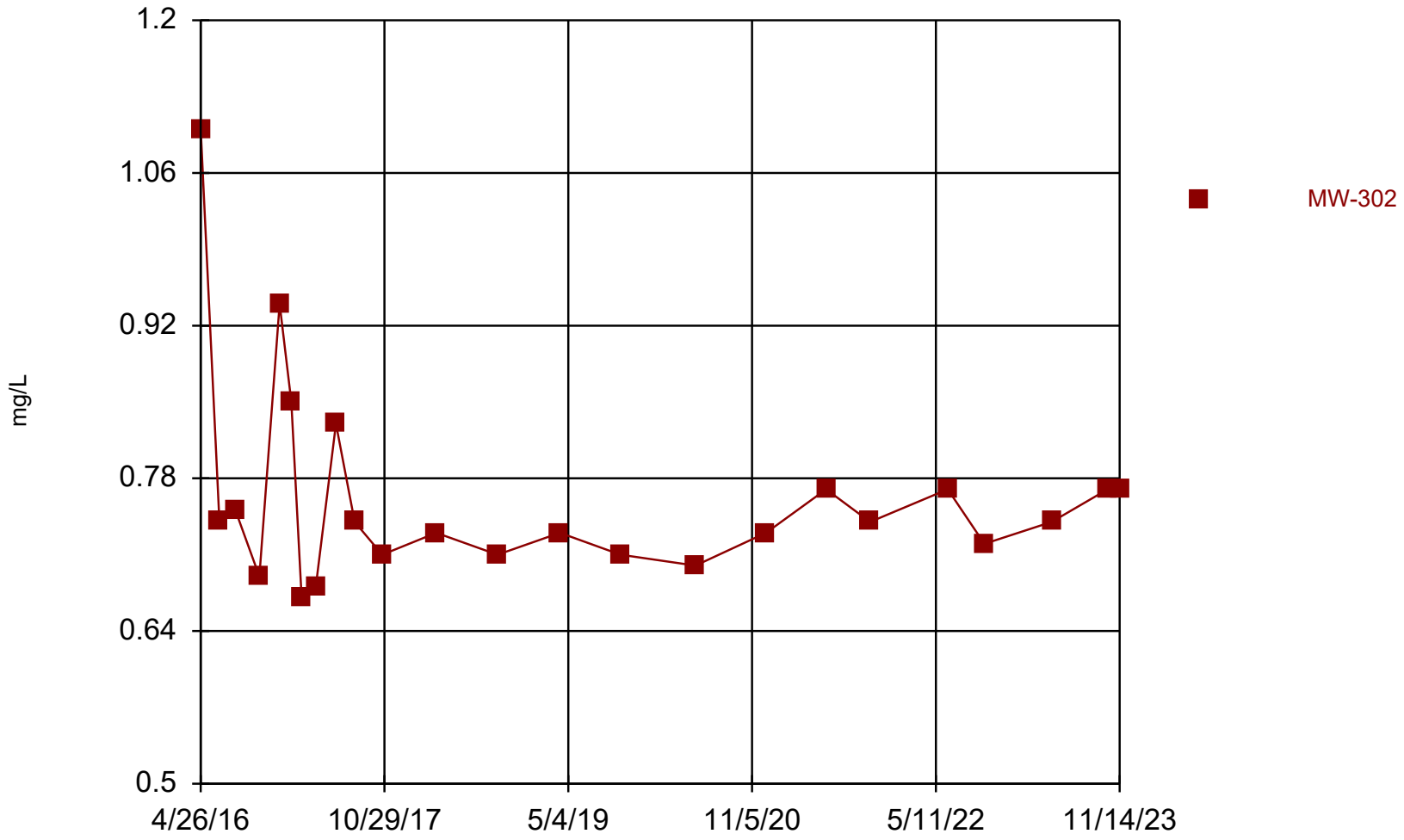
Time Series

Constituent: Field pH (Std. Units) Analysis Run 3/8/2024 9:04 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302
4/26/2016	8.33
6/21/2016	8.05
8/9/2016	6.24 (X)
10/19/2016	12.2 (X)
12/19/2016	8.31
1/23/2017	8.16
2/23/2017	8.16
4/6/2017	8
6/6/2017	7.95
8/1/2017	7.98
10/23/2017	7.7
4/3/2018	8.02
10/4/2018	8.08
4/9/2019	8.14
10/8/2019	7.67
5/20/2020	8.19 (R)
10/13/2020	7.85
12/18/2020	8.05
6/16/2021	8.37 (R)
10/26/2021	8.23
6/16/2022	8.1 (R)
10/4/2022	7.97
4/24/2023	8
10/9/2023	8.03
11/14/2023	8

Fluoride



Time Series Analysis Run 3/8/2024 9:03 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

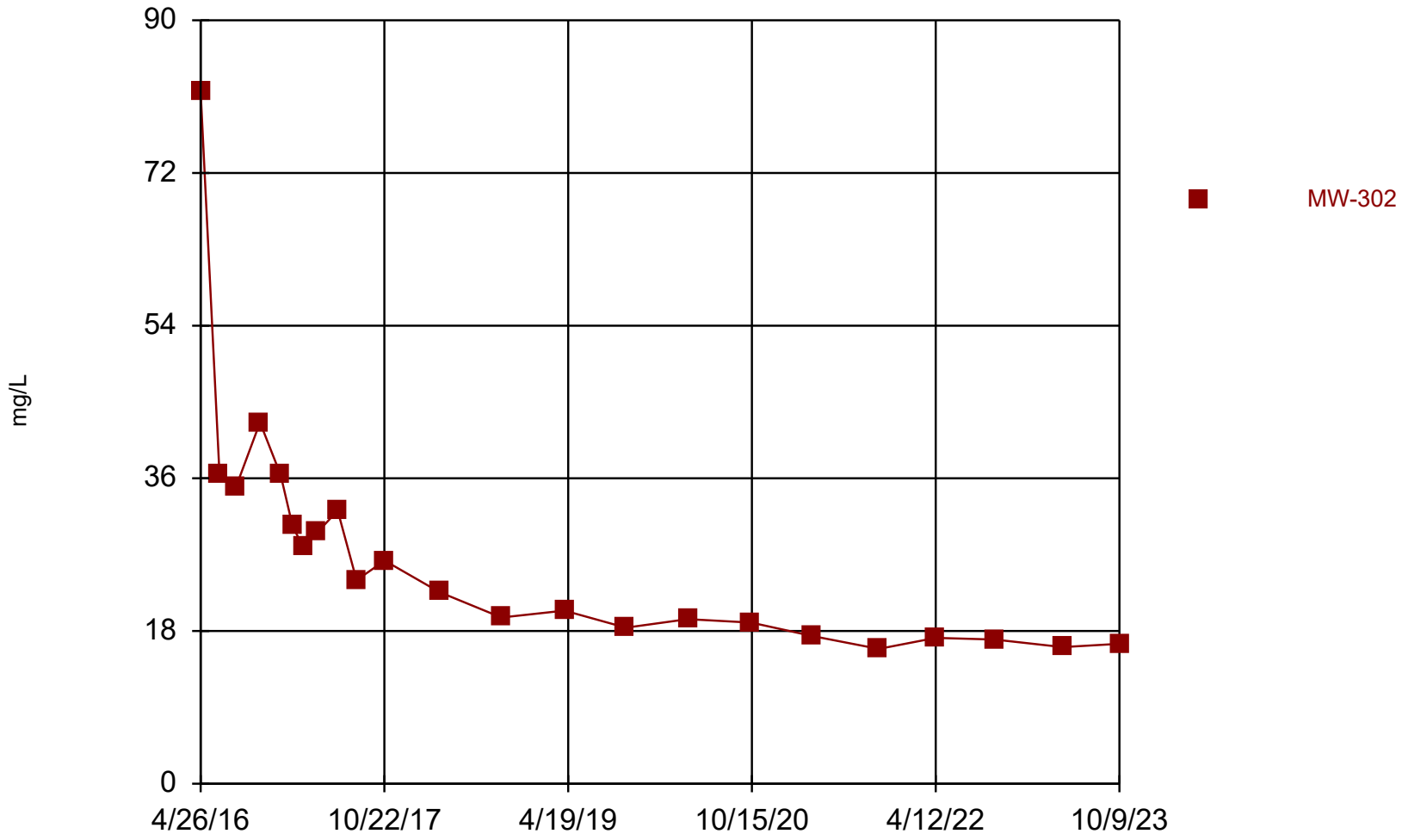
Time Series

Constituent: Fluoride (mg/L) Analysis Run 3/8/2024 9:04 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302
4/26/2016	1.1 (J,X)
6/21/2016	0.74
8/9/2016	0.75
10/19/2016	0.69
12/19/2016	0.94 (J)
1/23/2017	0.85 (J)
2/23/2017	0.67
4/6/2017	0.68
6/6/2017	0.83
8/1/2017	0.74
10/23/2017	0.71
4/3/2018	0.73
10/4/2018	0.71
4/9/2019	0.73
10/8/2019	0.71
5/20/2020	0.7 (R)
12/18/2020	0.73 (R)
6/16/2021	0.77 (R)
10/26/2021	0.74
6/16/2022	0.77 (R)
10/4/2022	0.72
4/24/2023	0.74
10/9/2023	0.77
11/14/2023	0.77

Sulfate



Time Series Analysis Run 3/8/2024 9:03 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

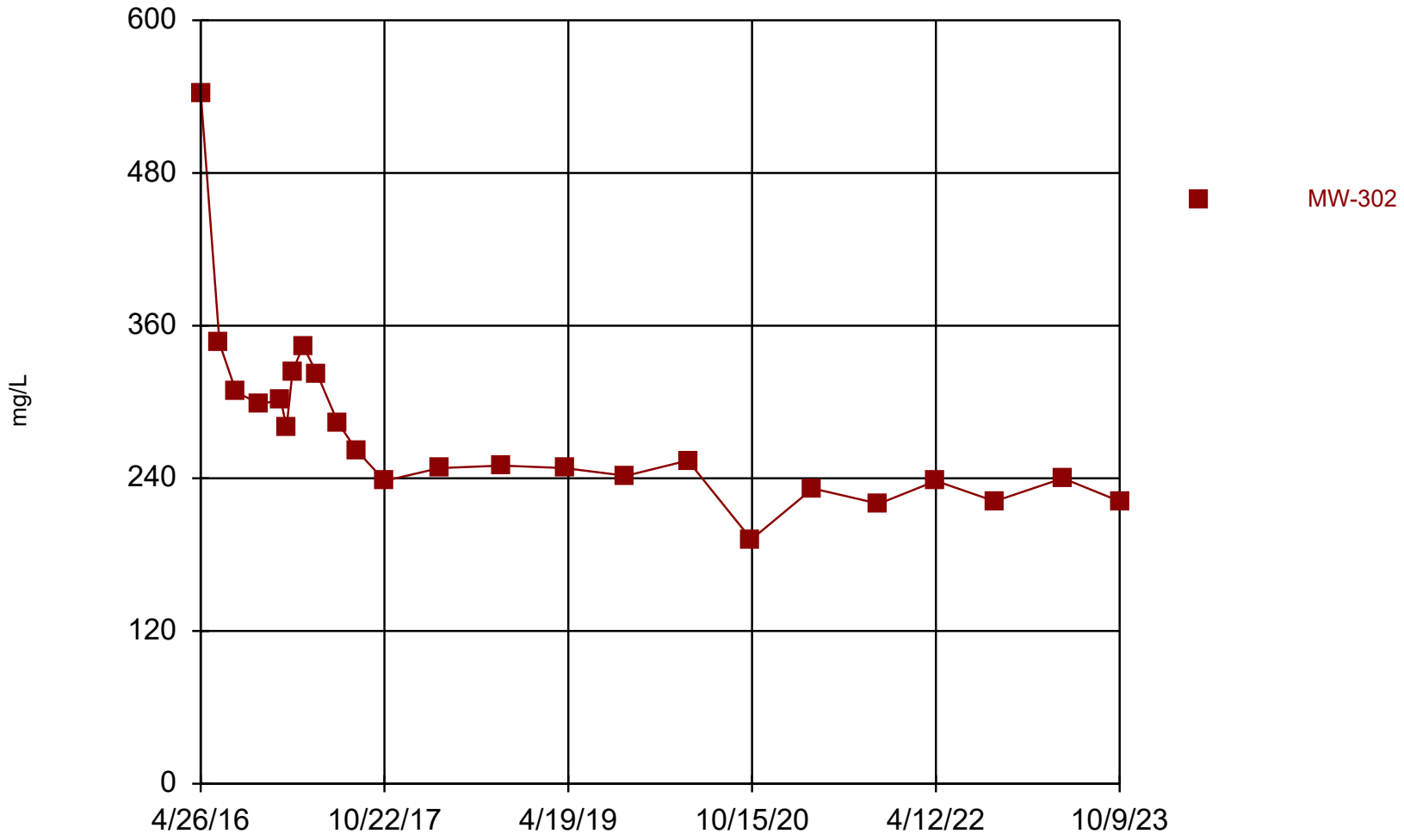
Time Series

Constituent: Sulfate (mg/L) Analysis Run 3/8/2024 9:04 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302
4/26/2016	81.5
6/21/2016	36.4
8/9/2016	35
10/19/2016	42.6
12/19/2016	36.4
1/23/2017	30.4
2/23/2017	27.9
4/6/2017	29.6
6/6/2017	32.2
8/1/2017	24
10/23/2017	26.3
4/3/2018	22.6
10/4/2018	19.6
4/9/2019	20.4
10/8/2019	18.4
4/8/2020	19.4
10/13/2020	19
4/13/2021	17.4
10/26/2021	15.9
4/13/2022	17.2
10/4/2022	17
4/24/2023	16.1
10/9/2023	16.5

Total Dissolved Solids



Time Series Analysis Run 3/8/2024 9:03 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 3/8/2024 9:04 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302
4/26/2016	543
6/21/2016	346
8/9/2016	308
10/19/2016	298
12/19/2016	302
1/5/2017	280
1/23/2017	324
2/23/2017	344
4/6/2017	322
6/6/2017	284
8/1/2017	262
10/23/2017	238
4/3/2018	248
10/4/2018	250
4/9/2019	248
10/8/2019	242
4/8/2020	254
10/13/2020	192
4/13/2021	232
10/26/2021	220
4/13/2022	238
10/4/2022	222
4/24/2023	240
10/9/2023	222

Appendix F

Statistical Update

May 24, 2024
File No. 25224069.00

TECHNICAL MEMORANDUM

SUBJECT: Statistical Evaluation of Groundwater Monitoring Results – UPL Update
I-43 Ash Disposal Facility - 2024

PREPARED BY: Lindsey Hawksworth, Ryan Matzuk

CHECKED BY: Sherren Clark

STATISTICAL METHOD

Groundwater monitoring data for the I-43 Ash Disposal Facility (ADF) is evaluated in accordance with 40 CFR 257.93(f)(3), using a prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper prediction limit (UPL). The statistical program used to calculate the updated prediction limits is Sanitas™ (Version 10.0.16).

Statistical evaluation is performed using commercially available software (*Sanitas for Groundwater*© or similar) in general accordance with the USEPA's *Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* dated March 2009 (Unified Guidance) (USEPA, 2009) and generally accepted procedures.

The I-43 ADF monitoring data includes two background monitoring wells, MW-304 and MW-305, and three compliance monitoring wells, MW-301, MW-302, and MW-303. The statistical analysis includes an intrawell evaluation for boron and an interwell evaluation for the remaining Appendix III parameters.

The initial UPLs were calculated on an interwell basis based on 10 rounds of background monitoring performed prior to the initiation of compliance monitoring for the I-43 coal combustion residual (CCR) units, from April 2016 through August 2017. In the October 2017 and April 2018 monitoring events, boron was detected at concentrations slightly exceeding the interwell UPL. Alternative Source Demonstrations (ASDs) completed for the two events concluded that natural spatial variability in boron background concentrations in the dolomite aquifer was the most likely cause of the UPL exceedances. Evidence for this conclusion included long-term monitoring data from the state monitoring program, boron monitoring results for water supply wells in the area, the site geology, and the CCR unit construction. To allow for natural spatial variability in the background concentrations, the statistical evaluation for boron was transitioned to an intrawell approach beginning with the October 2018 monitoring event.

As part of the evaluation of the 2024 monitoring results, the background data set for the Appendix III UPL calculations is being updated to include data from the background wells collected through November 2023. This memo addresses updated UPLs for Appendix III parameters.

TIME SERIES PLOTS

Time series plots are prepared for the required monitoring parameters to show the concentration variations over time. Time series graphs are included in **Attachment 1**.

OUTLIER ANALYSIS - INTERWELL

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

1) Run normality test (Shapiro Wilk/Francia).

2) If normally distributed, run USEPA's 1989 Outlier Test to identify suspected outliers.
   a) If the number of background samples is less than or equal to 25, run Dixon's test for suspected outliers.
   b) If the number of background samples is more than 25, run Rosner's test for suspected outliers.

3) If not normally distributed, run Tukey's test for outliers.

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

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

For the interwell evaluation of 2024 monitoring well results using data collected through November 2023, the following background values were identified as potential outliers and handled as described:

- **Field pH (MW-304).** One low result from the August 2016 event was flagged as a statistical outlier. This result was removed from the dataset because the pH values recorded on this date for all wells were anomalously low, suggesting a likely field instrument or calibration problem.

- **Fluoride (MW-304).** Two results were flagged as statistical outliers for fluoride. One high result from the April 2020 event was flagged as a statistical outlier. This result was not removed from the dataset because there was no known explanation for the higher results and it appeared to be within the range of potential natural variation relative to the other observed fluoride concentrations. One low result from the April 2022 event was flagged as a statistical outlier. This result was below the laboratory's limit of detection. This result was removed from the dataset because both MW-304 and MW-305 had

anomalously low non-detect results for this date for fluoride, while other parameters remained within typical ranges, suggesting a possible lab analysis or reporting error.

- Fluoride (MW-305). One low result from the April 2022 event was flagged as a statistical outlier. This result was below the laboratory's limit of detection. This result was removed from the dataset because both MW-304 and MW-305 had anomalously low non-detect results for this date for fluoride, while other parameters remained within typical ranges, suggesting a possible lab analysis or reporting error.

- Total Dissolved Solids (MW-304). One low result from the October 2019 event was flagged as a statistical outlier. This result was not removed from the dataset because there was no known explanation for the low result and it appeared to be within the range of potential natural variation relative to the other observed Total Dissolved Solids (TDS) concentrations.

Outlier analysis of results are included in Attachment 2.

OUTLIERS ANALYSIS - INTRAWELL

For the intrawell analysis of boron, an outlier evaluation is performed for background monitoring results at the compliance wells. The outlier analysis is performed in Sanitas using the same steps noted above.

For the interwell evaluation of 2024 monitoring well results using compliance well data collected through November 2023, the following background values were identified as potential outliers and handled as described:

- Boron (MW-301). One high result from the April 2016 sampling event was identified as a statistical outlier. This result was removed from the dataset because the result was anomalously high in comparison to other historical results. This was the first sampling event for this well and is not reflective of relatively stable trends observed for boron at compliance wells since this event.

- Boron (MW-302). One high result from the April 2016 sampling event was identified as a statistical outlier. This result was removed from the dataset because the result was anomalously high in comparison to other historical results. This was the first sampling event for this well and is not reflective of relatively stable trends observed for boron at compliance wells since this event.

Intrawell outlier analysis of boron results from the compliance wells are included in Attachment 3.

BACKGROUND UPDATE

The background data pool was updated in accordance with the Unified Guidance, which recommends updating background every 2 to 3 years for semiannual sampling. Prior to expanding the data pool, the background data set (4/2016 through 10/2020) and the data to be added (12/2020 through 11/2023 for background and compliance wells) were compared. The Unified Guidance states that recently collected measurements from the background wells can be added to

the existing pool if a Student's t-test or Wilcoxon rank-sum test (also known as Mann-Whitney test) finds no significant difference between the two groups at the 1 percent level of significance.

The Sanitas comparisons use Welch's t-test for normally distributed data and the Mann-Whitney test for non-normal data. (Note: The Sanitas output labels the earlier background dataset as "Background" and the later background dataset as "Compliance," but all included data will be used as background data to calculate prediction limits.)

The Sanitas background group comparisons for the I-43 background data sets, included in Attachment 4A for interwell analyses and Attachment 4B for intrawell analyses, indicated no significant difference at the 1 percent level except for chloride at MW-305 and sulfate at MW-304. The observed differences in comparison to background datasets for these two well/parameter pairs indicate a possible shift in groundwater chemistry at these locations.

Based on the comparison between the background datasets, the UPLs for chloride and sulfate will not be updated with the more recent data at this time. Inclusion of the 12/2020 through 11/2023 data from the background wells in UPL calculations can be reevaluated during future background updates as additional background data are collected.

INTERWELL PREDICTION LIMITS

Interwell prediction limits were calculated for all parameters except boron (intrawell) and chloride, and sulfate (excluded due to data shift as described above). Interwell prediction limits are calculated using background data from the upgradient monitoring wells (MW-304 and MW-305) for each monitored constituent, with outliers removed as noted above. During this evaluation of compliance monitoring groundwater results from April 2016 through November 2023 were included to calculate the intrawell prediction limits. The prediction limit analysis performed in Sanitas includes the following steps:

1) If 100% of the background values are non-detect, the Double Quanitification rule applies and no prediction limit is calculated.

2) If 50% or more of results are non-detect, then a non-parametric prediction limit is calculated.

3) If fewer than 50% of the results are non-detect, run normality test (Shapiro Wilk/Francia) to assess whether the data fit a normal distribution or can be transformed to fit a normal distribution (e.g., lognormal).

4) If normal or transformed normal, calculate parametric prediction limit.

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

Consistent with the Unified Guidance, parametric prediction limits are calculated based on a 1-of-2 retesting protocol and a 10 percent site-wide false positive rate. Sanitas establishes the per-test significance level based on user inputs of the number of events per year, number of constituents being evaluated, and number of compliance wells. For the 2024 updates to UPLs, the following values were used:

Parameter	Value	Comments
Evaluations per year	2	Spring and Fall events
Constituents analyzed	7	Total of 7 constituents analyzed, boron analyzed through the intrawell prediction limit process listed below.
Compliance wells	3	MW-301, MW-302, MW-303

Non-parametric prediction limits are also based on a 1-of-2 retesting protocol. For the current sample sizes, the non-parametric limit is the highest value in the background dataset.

Interwell prediction limit analysis results are included in **Attachment 5** and summarized in **Table 1**.

INTRAWELL PREDICTION LIMITS

Intrawell prediction limits were calculated for boron. Intrawell prediction limits are calculated using background data from the compliance monitoring wells (MW-301, MW-302, and MW-303) for each monitored constituent, with outliers removed as noted above.

During this evaluation of compliance monitoring, groundwater results from April 2016 through November 2023 were included to calculate the intrawell prediction limits. The intrawell prediction limit analysis performed in Sanitas includes the same steps noted above.

Intrawell prediction limit analysis results are included in **Attachment 6** and summarized in **Table 1**.

LH/RM/LMH/SCC

I:\25224069.00\Data and Calculations\Sanitas\I-43 Appendix III - UPL Calcs\240524_I-43 LF CCR Stats Memo_Final.docx

Table 1

UPL Summary

Table 1. UPL Summary
Edgewater I-43 Ash Disposal Facility, Sheboygan, WI / SCS Engineers Project #25224069.00

Source	1/25/2021 I43 UPL Update Stats Memo						5/24/2024 I43 UPL Update Stats Memo					
Parameter Name	**UPL Method and Value**						**UPL Method and Value**					
	MW-301		**MW-302**		**MW-303**		**MW-301**		**MW-302**		**MW-303**	
Appendix III												
Boron, µg/L **(Intrawell)**	P	184	P	149	P	100	P	182	P	148	P	99.9
Calcium, µg/L	NP	103,000					NP	103,000				
Chloride, mg/L	NP	24.9					NP	24.9				
Fluoride, mg/L	P	0.753					P	0.76				
Field pH, Std. Units	P	8.34					P	8.32				
Sulfate, mg/L	NP	140					NP	140				
Total Dissolved Solids, mg/L	NP	598					NP	604				

Abbreviations:
UPL = Upper Prediction Limit
mg/L = milligrams per liter
µg/L = micrograms per liter
P = Parametric UPL with 1-of-2 retesting
NP = Nonparametric UPL with 1-of-2- retesting

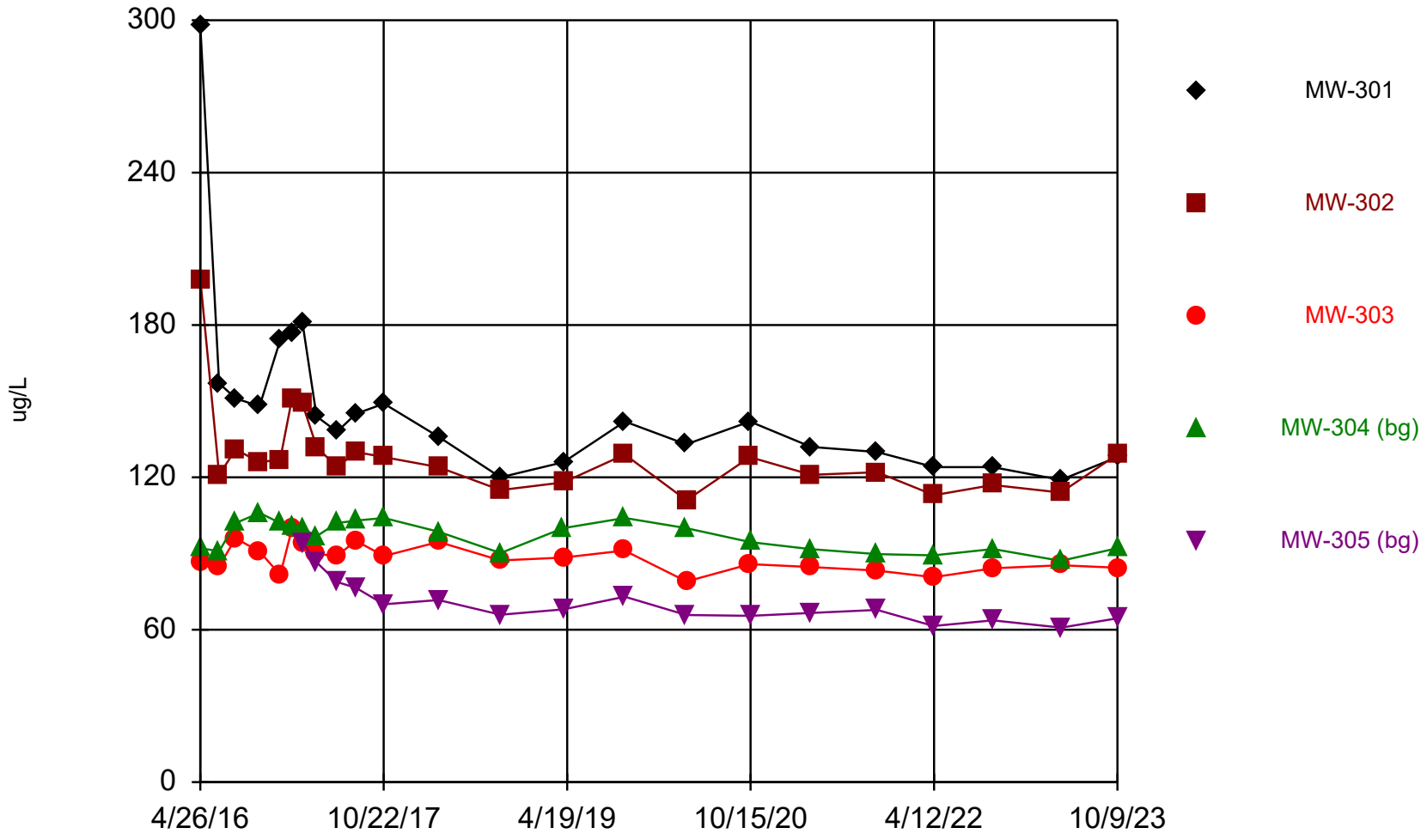
Created by: MDB 5/9/2023
Last revision by: RM Date: 5/24/2024
Checked by: NLB Date: 5/28/2024

I:\25224069.00\Data and Calculations\Sanitas\I-43 Appendix III - UPL Calcs\[Table 1 - UPL Summary_I43.xlsx]I43

Attachment 1

Times Series Graphs

Boron



Time Series Analysis Run 3/8/2024 1:41 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

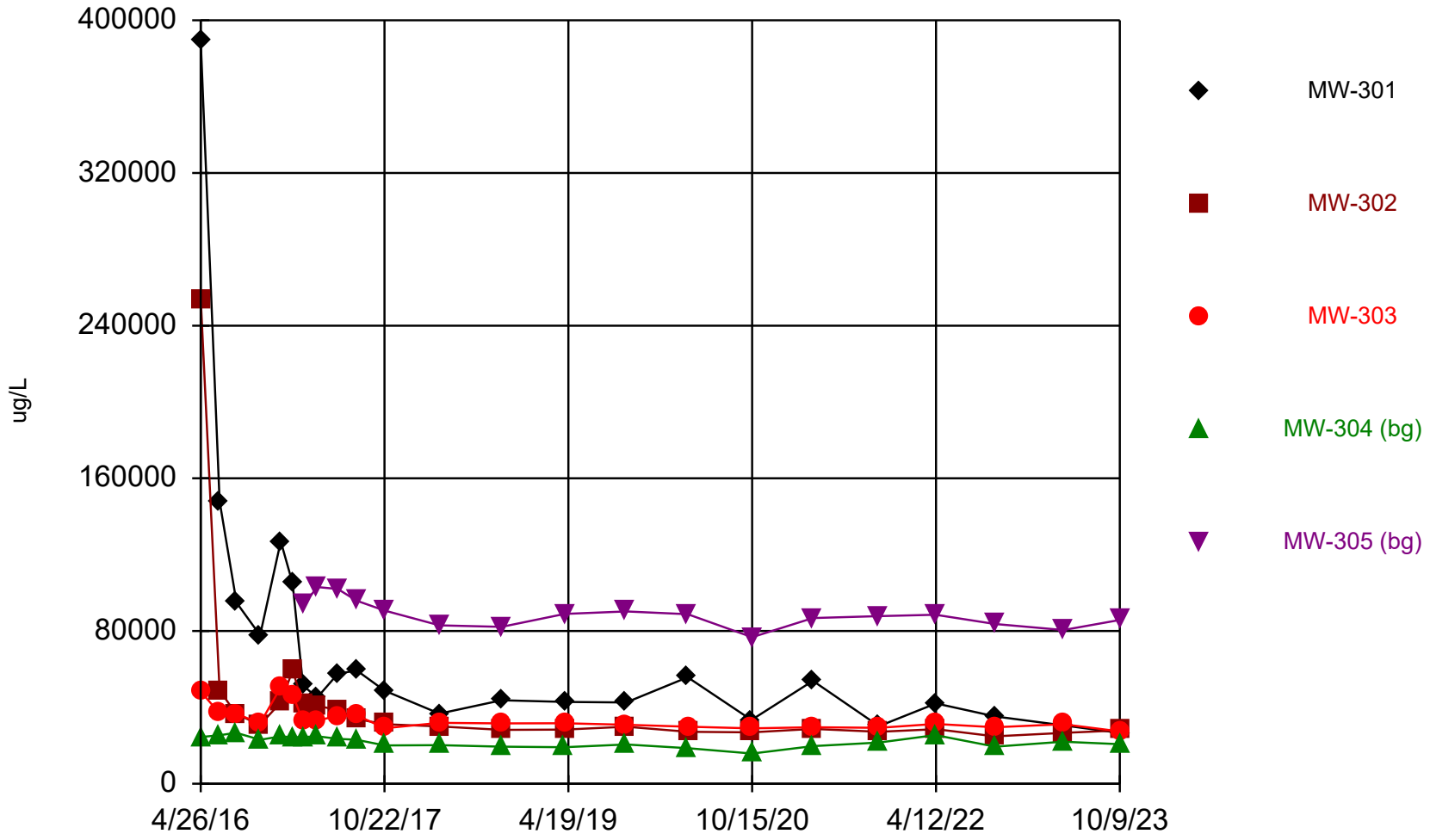
Time Series

Constituent: Boron (ug/L) Analysis Run 3/8/2024 1:57 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	298 (X)	198 (X)	86.4	92.1	
6/21/2016	157	121	85	90.9	
8/9/2016		131	96	102	
8/10/2016	151				
10/19/2016	148	126	90.8	106	
12/19/2016	174	127	81.6	102	
1/23/2017	177	151	99.8	101	
2/23/2017	181	149	93.9	99.8	94.4
4/6/2017	144	132			
4/7/2017			89.8	96.9	86.4
6/6/2017	138	124	89.1	102	78.8
8/1/2017	145	130	95	103	76.5
10/23/2017	149	128	89	104	70
4/3/2018	136	124	94.6	98.6	71.7
10/4/2018	120	115	87.3	90.2	65.9
4/8/2019				100	
4/9/2019	126	118	88.4		68
10/7/2019			91.2		
10/8/2019	142	129		104	73
4/7/2020	133			100	65.8
4/8/2020		111	79		
10/13/2020	142	128	85.8		
10/15/2020				94.5	65.5
4/13/2021	132	121	84.7	91.7	66.6
10/26/2021	130	122	83.3	89.8	67.8
4/11/2022			80.7	89.3	61.5
4/13/2022	124	113			
10/4/2022	124	117			63.7
10/5/2022			84.2	91.8	
4/24/2023	119	114	85.4	87.1	
4/25/2023					60.8
10/9/2023	128	129	84.4	92.1	64.5

Calcium



Time Series Analysis Run 3/8/2024 1:41 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

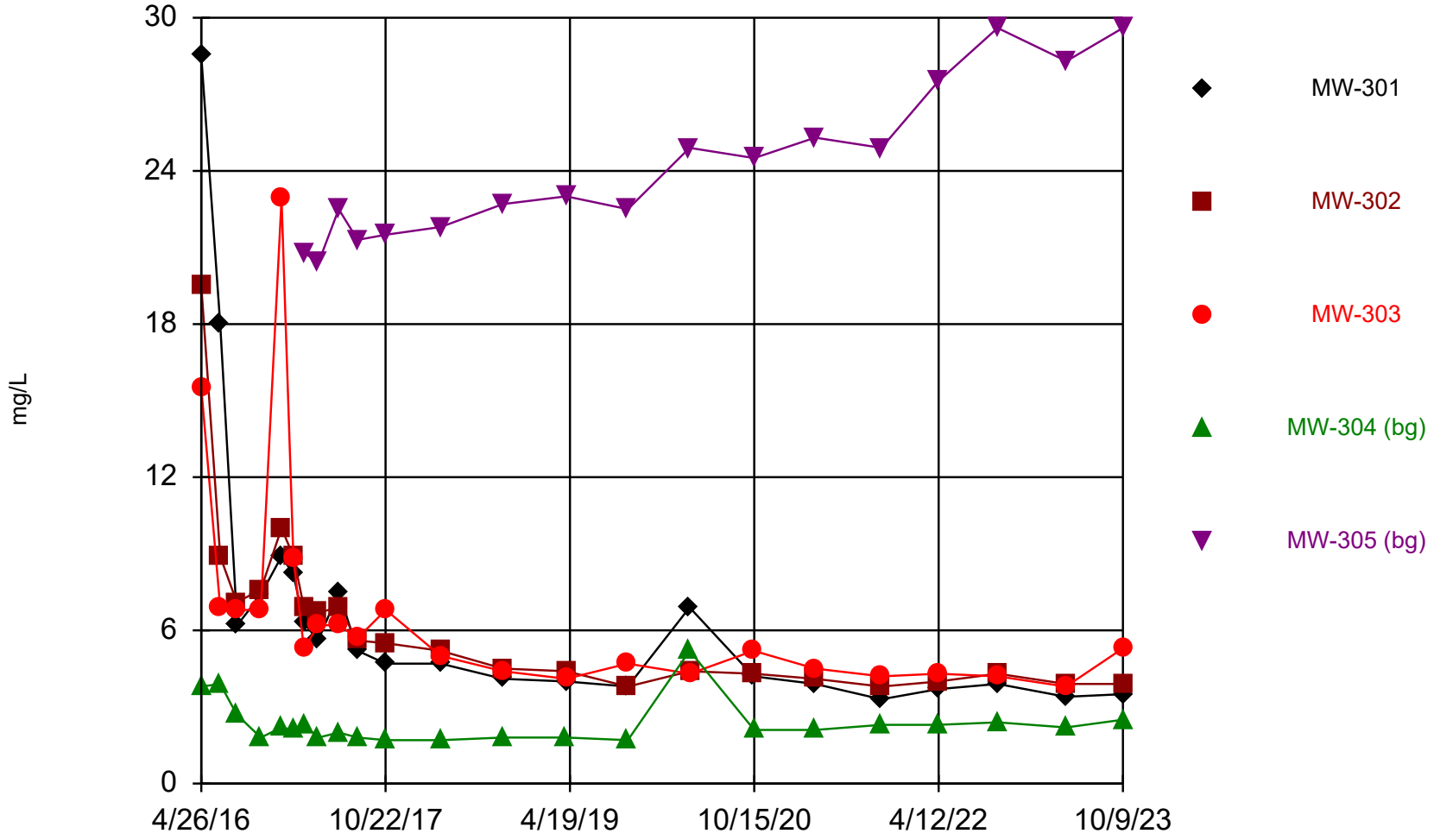
Time Series

Constituent: Calcium (ug/L) Analysis Run 3/8/2024 1:57 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	389000	254000	48300	24500	
6/21/2016	148000	49000	36900	25400	
8/9/2016		36500	36700	26700	
8/10/2016	94900				
10/19/2016	77800	30900	31600	23000	
12/19/2016	127000	42600	50500	24800	
1/23/2017	105000	59300	46700	24300	
2/23/2017	51400	41900	32600	24500	93800
4/6/2017	45200	40800			
4/7/2017			33200	24800	103000
6/6/2017	57600	38700	35500	23500	102000
8/1/2017	59400	33900	35900	23000	95900
10/23/2017	48700	31200	29100	20100	90700
4/3/2018	36700	30000	31900	20200	83000
10/4/2018	43700	28200	31600	19400	82200
4/8/2019				19100	
4/9/2019	42900	28400	31700		89000
10/7/2019			30900		
10/8/2019	42600	29900		20600	90300
4/7/2020	55800			18600	88800
4/8/2020		27200	29900		
10/13/2020	33400	26900	29000		
10/15/2020				15800	76800
4/13/2021	53900	28700	29600	19700	86800
10/26/2021	30200	27200	29300	21600	87800
4/11/2022			31300	25500	88500
4/13/2022	42100	28600			
10/4/2022	35300	24800			83700
10/5/2022			29600	19400	
4/24/2023	30600	26600	31200	22000	
4/25/2023					80500
10/9/2023	26600	27900	27400	20700	85800

Chloride



Time Series Analysis Run 3/8/2024 1:41 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

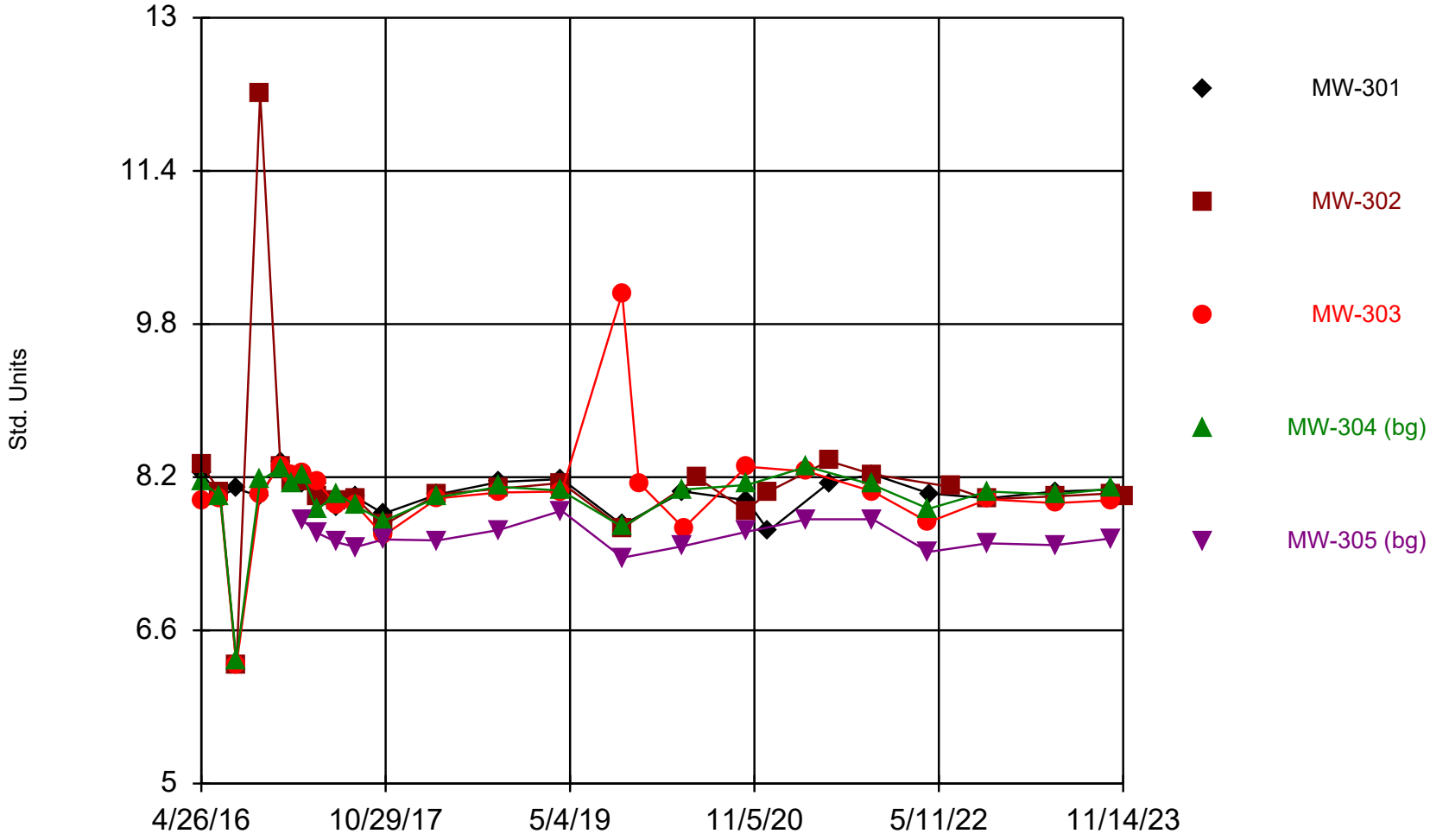
Time Series

Constituent: Chloride (mg/L) Analysis Run 3/8/2024 1:57 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	28.5 (J)	19.5 (J)	15.5	3.8 (J)	
6/21/2016	18 (J)	8.9	6.9	3.9 (J)	
8/9/2016		7.1	6.8	2.7 (J)	
8/10/2016	6.2				
10/19/2016	7.4 (J)	7.6	6.8	1.8 (J)	
12/19/2016	8.9 (J)	10	22.9	2.2	
1/23/2017	8.2 (J)	8.9 (J)	8.8 (J)	2.1	
2/23/2017	6.3	6.9	5.3	2.3	20.8
4/6/2017	5.6	6.7			
4/7/2017			6.2	1.8 (J)	20.4
6/6/2017	7.5 (J)	6.9	6.2	2	22.5
8/1/2017	5.2	5.6	5.7	1.8 (J)	21.3
10/23/2017	4.7	5.5	6.8	1.7 (J)	21.5
4/3/2018	4.7	5.2	5	1.7 (J)	21.8
10/4/2018	4.1	4.5	4.4	1.8 (J)	22.7
4/8/2019				1.8 (J)	
4/9/2019	4	4.4	4.1		23
10/7/2019			4.7		
10/8/2019	3.8	3.8		1.7 (J)	22.5
4/7/2020	6.9 (J)			5.2	24.9
4/8/2020		4.4	4.3		
10/13/2020	4.2	4.3	5.2		
10/15/2020				2.1	24.5
4/13/2021	3.9	4.1	4.5	2.1	25.3
10/26/2021	3.3	3.8	4.2	2.3	24.9
4/11/2022			4.3	2.3	27.5
4/13/2022	3.7	4			
10/4/2022	3.9	4.3			29.6
10/5/2022			4.2	2.4	
4/24/2023	3.4	3.9	3.8	2.2	
4/25/2023					28.3
10/9/2023	3.5	3.9	5.3 (J)	2.5	29.6

Field pH



Time Series Analysis Run 3/8/2024 1:41 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

Time Series

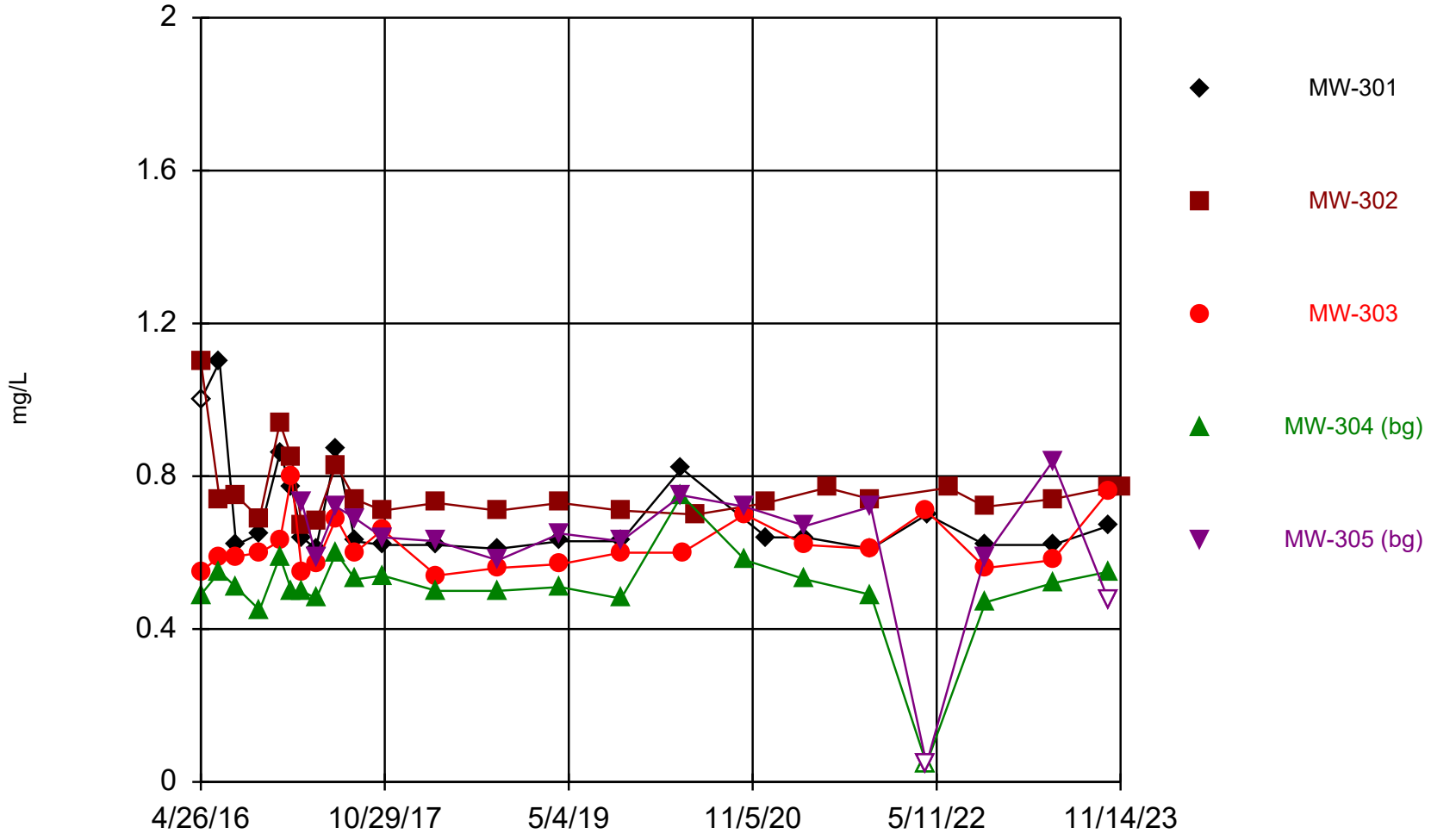
Constituent: Field pH (Std. Units) Analysis Run 3/8/2024 1:57 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	8.24	8.33	7.96	8.16	
6/21/2016	8.01	8.05	7.98	8	
8/9/2016		6.24 (X)	6.24 (O)	6.29 (X)	
8/10/2016	8.08				
10/19/2016	8	12.2 (X)	8.03	8.17	
12/19/2016	8.36	8.31	8.32	8.29	
1/23/2017	8.21	8.16	8.23	8.14	
2/23/2017	8.14	8.16	8.24	8.22	7.75
4/6/2017	8.12	8			
4/7/2017			8.15	7.86	7.62
6/6/2017	7.89	7.95	7.9	8.03	7.52
8/1/2017	7.99	7.98	7.91	7.9	7.47
10/23/2017	7.82	7.7	7.59	7.74	7.55
4/3/2018	8.02	8.02	7.98	7.99	7.54
10/4/2018	8.15	8.08	8.04	8.1	7.65
4/8/2019				8.06	
4/9/2019	8.18	8.14	8.05		7.85
10/7/2019			10.12		
10/8/2019	7.7	7.67		7.68	7.36
11/26/2019			8.14		
4/7/2020	8.05			8.07	7.48
4/8/2020			7.67		
5/20/2020		8.19 (R)			
10/13/2020	7.96	7.85	8.31		
10/15/2020				8.12	7.63
12/18/2020	7.64	8.05			
4/13/2021			8.26	8.31	7.76
6/16/2021	8.14 (R)	8.37 (R)			
10/26/2021	8.23	8.23	8.05	8.12	7.76
4/11/2022			7.73	7.87	7.42
4/13/2022	8.03				
6/16/2022		8.1 (R)			
10/4/2022	7.98	7.97			7.51
10/5/2022			7.97	8.05	
4/24/2023	8.05	8	7.93	8.02	
4/25/2023					7.49
10/9/2023	8.07	8.03	7.96	8.08	7.56
11/14/2023		8			

Hollow symbols indicate censored values.

Fluoride



Time Series Analysis Run 3/8/2024 1:42 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

Time Series

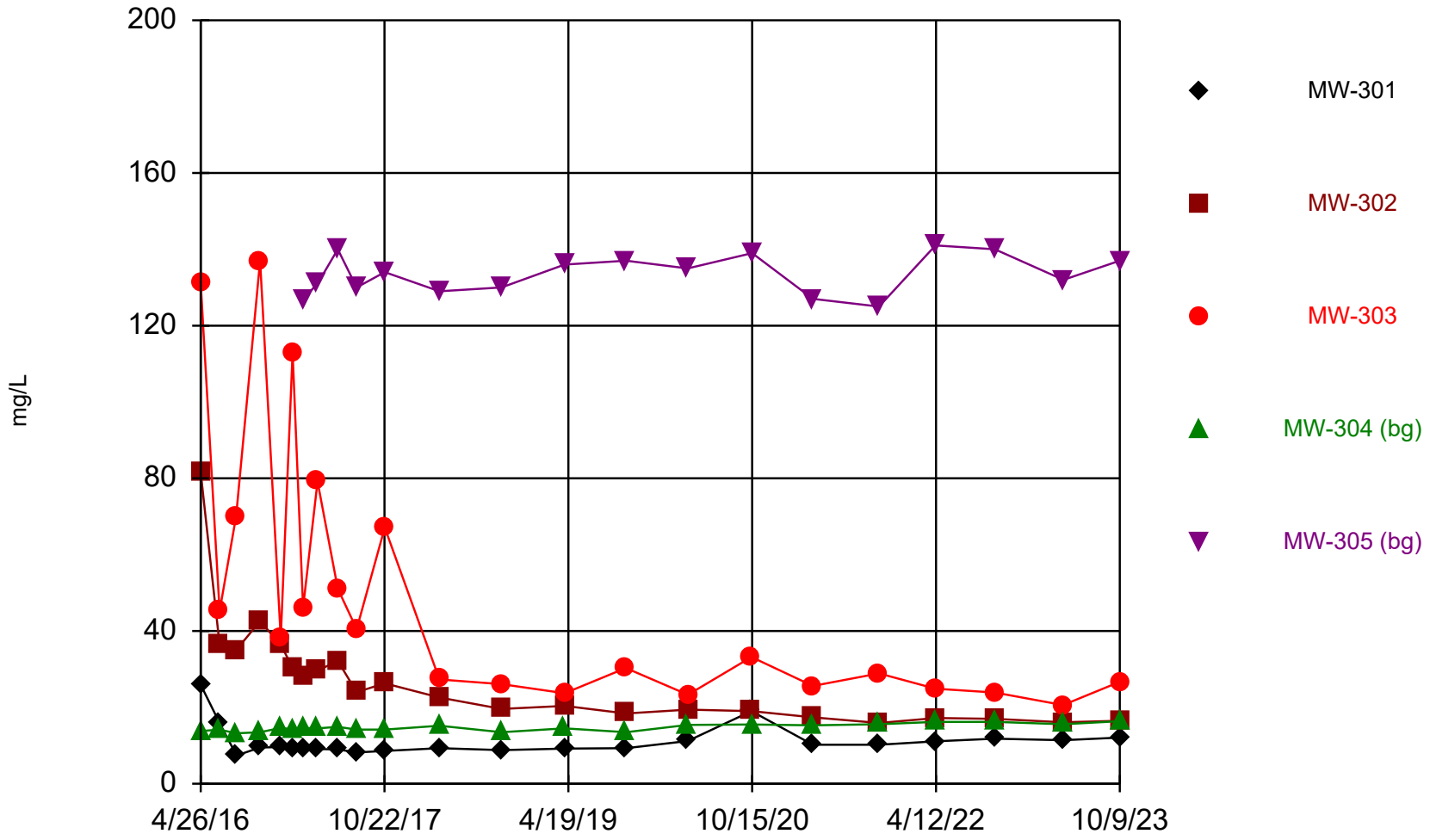
Constituent: Fluoride (mg/L) Analysis Run 3/8/2024 1:57 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	<2 (U)	1.1 (J,X)	0.55	0.49	
6/21/2016	1.1 (J)	0.74	0.59	0.55	
8/9/2016		0.75	0.59	0.51	
8/10/2016	0.62				
10/19/2016	0.65 (J)	0.69	0.6	0.45	
12/19/2016	0.86 (J)	0.94 (J)	0.63	0.59	
1/23/2017	0.77 (J)	0.85 (J)	0.8 (J)	0.5	
2/23/2017	0.64	0.67	0.55	0.5	0.73
4/6/2017	0.61	0.68			
4/7/2017			0.57	0.48	0.59
6/6/2017	0.87 (J)	0.83	0.69	0.6	0.72
8/1/2017	0.63	0.74	0.6	0.53	0.69
10/23/2017	0.62	0.71	0.66	0.54	0.64
4/3/2018	0.62	0.73	0.54	0.5	0.63
10/4/2018	0.61	0.71	0.56	0.5	0.58
4/8/2019				0.51	
4/9/2019	0.63	0.73	0.57		0.65
10/7/2019			0.6		
10/8/2019	0.63	0.71		0.48	0.63
4/7/2020	0.82 (J)			0.75	0.75
4/8/2020			0.6		
5/20/2020		0.7 (R)			
10/13/2020			0.7		
10/15/2020				0.58	0.72
12/18/2020	0.64 (R)	0.73 (R)			
4/13/2021	0.64		0.62	0.53	0.67
6/16/2021		0.77 (R)			
10/26/2021	0.61	0.74	0.61	0.49	0.72 (J)
4/11/2022			0.71	<0.095 (U)	<0.095 (U)
4/13/2022	0.7				
6/16/2022		0.77 (R)			
10/4/2022	0.62	0.72			0.59
10/5/2022			0.56	0.47	
4/24/2023	0.62	0.74	0.58	0.52	
4/25/2023					0.84 (J)
10/9/2023	0.67	0.77	0.76 (J)	0.55	<0.95 (U)
11/14/2023		0.77			

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

Sulfate



Time Series Analysis Run 3/8/2024 1:42 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

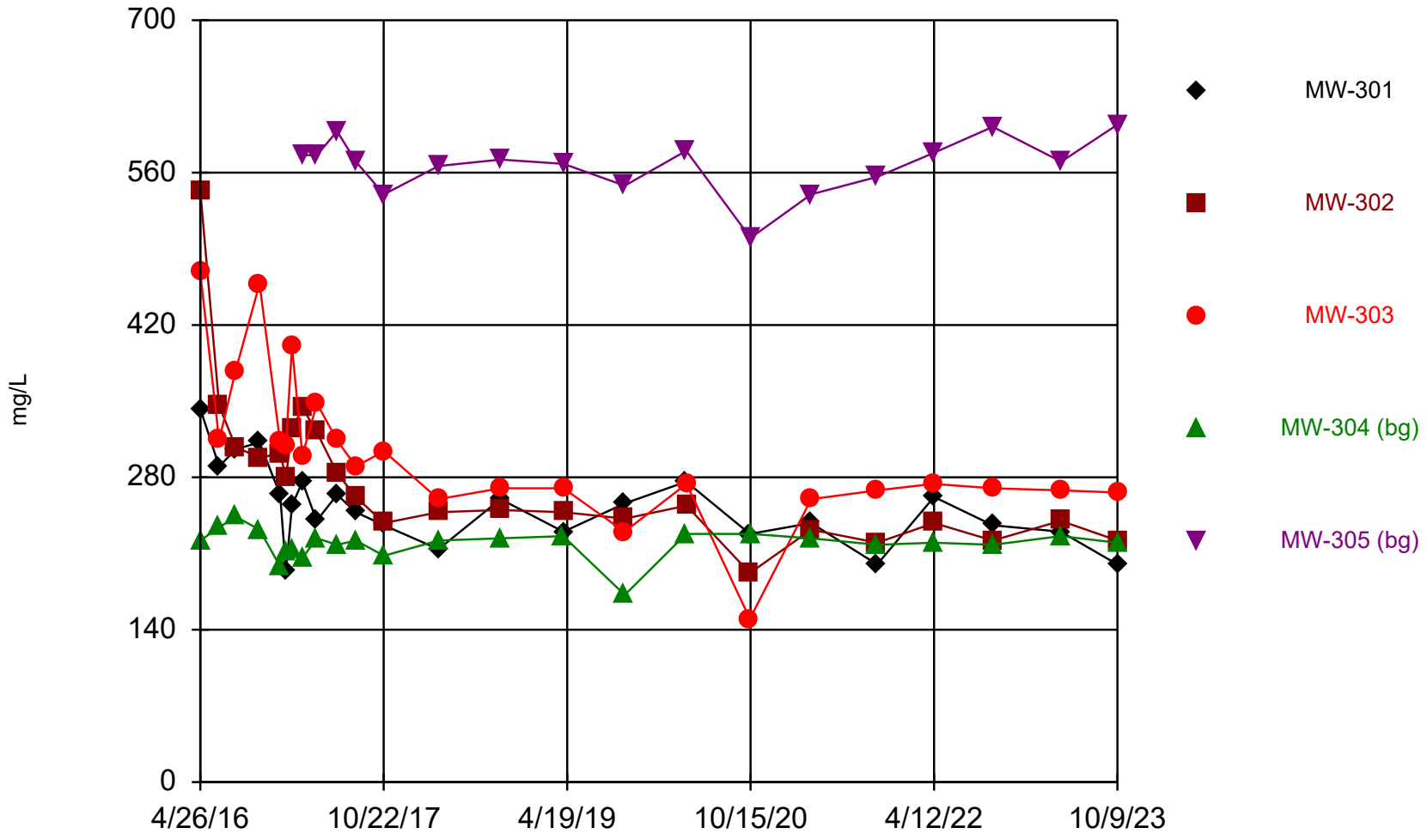
Time Series

Constituent: Sulfate (mg/L) Analysis Run 3/8/2024 1:57 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	25.9 (J)	81.5	131	13.8	
6/21/2016	15.9 (J)	36.4	45.2	14.2	
8/9/2016		35	70.1	13.2	
8/10/2016	7.4				
10/19/2016	9.5 (J)	42.6	137	13.5	
12/19/2016	9.6 (J)	36.4	38.2	14.6	
1/23/2017	9.3 (J)	30.4	113	14.3	
2/23/2017	9.1	27.9	46.1	14.6	127
4/6/2017	9.1	29.6			
4/7/2017			79.2	14.5	131
6/6/2017	9 (J)	32.2	51.1	14.9	140
8/1/2017	8.2	24	40.5	14.2	130
10/23/2017	8.6	26.3	67.1	14.2	134
4/3/2018	9.3	22.6	27.3	15.2	129
10/4/2018	8.8	19.6	26.1	13.5	130
4/8/2019				14.5	
4/9/2019	9.2	20.4	23.7		136
10/7/2019			30.3		
10/8/2019	9.3	18.4		13.5	137
4/7/2020	11.2			15.4	135
4/8/2020		19.4	23.3		
10/13/2020	19	19	33.2		
10/15/2020				15.5	139
4/13/2021	10.2	17.4	25.6	15.3	127
10/26/2021	10.2	15.9	28.9	15.6	125
4/11/2022			24.9	16.2	141
4/13/2022	11.1	17.2			
10/4/2022	11.8	17			140
10/5/2022			23.9	16.2	
4/24/2023	11.4	16.1	20.6	15.6	
4/25/2023					132
10/9/2023	12.1	16.5	26.7	16.4	137

Total Dissolved Solids



Time Series Analysis Run 3/8/2024 1:42 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 3/8/2024 1:57 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	343	543	468	222	
6/21/2016	290	346	314	234	
8/9/2016		308	378	244	
8/10/2016	306				
10/19/2016	312	298	458	232	
12/19/2016	264	302	312	198	
1/5/2017	194	280	310	212	
1/23/2017	254	324	400	214	
2/23/2017	276	344	300	206	576
4/6/2017	240	322			
4/7/2017			348	224	576
6/6/2017	264	284	314	218	598
8/1/2017	248	262	290	222	570
10/23/2017	236	238	304	208	540
4/3/2018	214	248	260	222	566
10/4/2018	260	250	270	224	572
4/8/2019				226	
4/9/2019	230	248	270		568
10/7/2019			230		
10/8/2019	256	242		172	548
4/7/2020	276			228	580
4/8/2020		254	274		
10/13/2020	228	192	150		
10/15/2020				228	500
4/13/2021	238	232	260	224	540
10/26/2021	200	220	268	218	556
4/11/2022			274	220	578
4/13/2022	262	238			
10/4/2022	236	222			602
10/5/2022			270	218	
4/24/2023	230	240	268	226	
4/25/2023					570
10/9/2023	200	222	266	220	604

Attachment 2

Outlier Analysis – Interwell

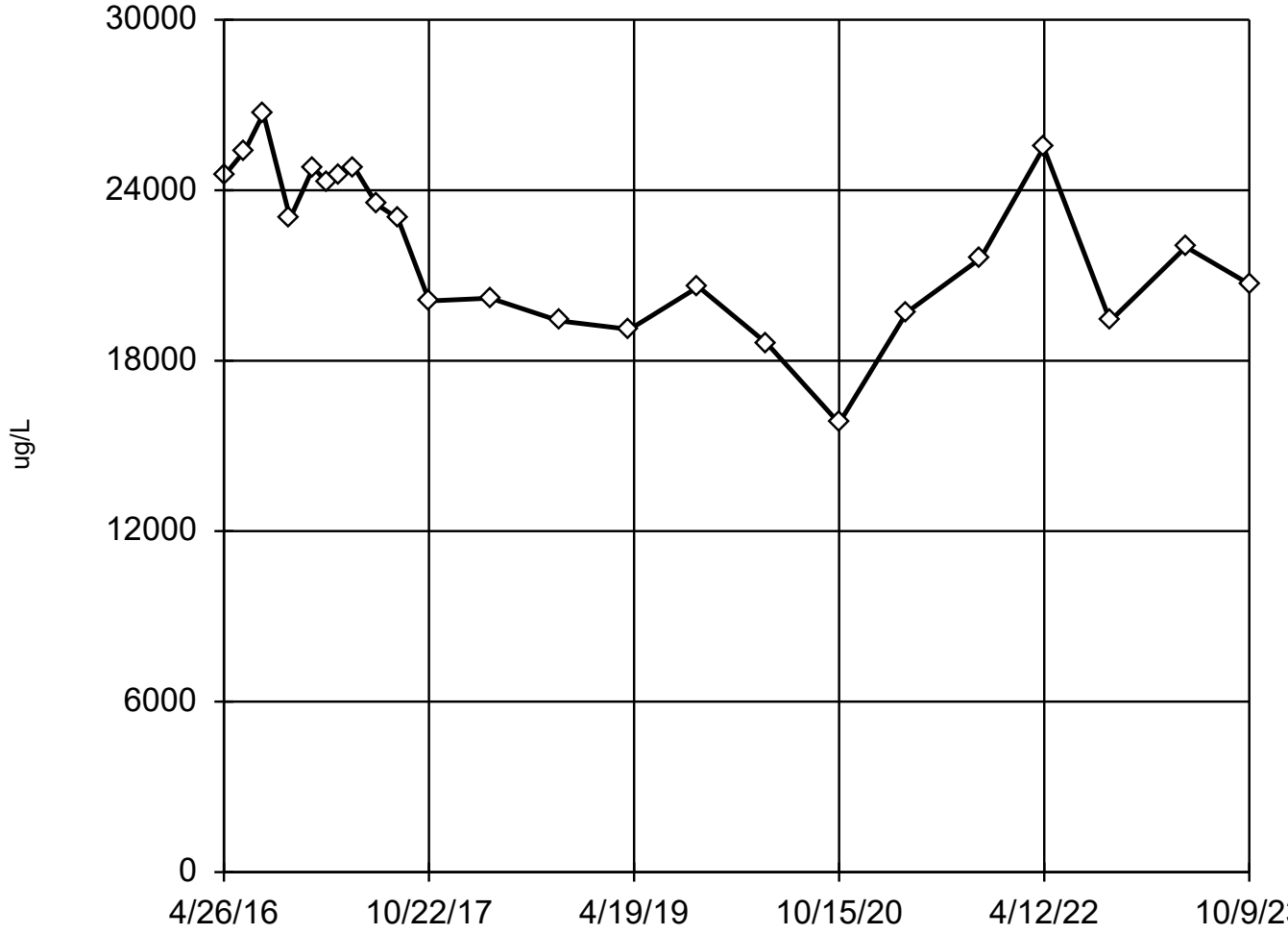
Outlier Analysis

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 3/12/2024, 1:41 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Calcium (ug/L)	MW-304 (bg)	No	n/a	n/a	EPA 1989	0.05	23	22052	2792	normal	ShapiroWilk
Calcium (ug/L)	MW-305 (bg)	No	n/a	n/a	EPA 1989	0.05	17	88741	7015	normal	ShapiroWilk
Chloride (mg/L)	MW-304 (bg)	No	n/a	n/a	NP (nrm)	NaN	23	2.357	0.8506	unknown	ShapiroWilk
Chloride (mg/L)	MW-305 (bg)	No	n/a	n/a	EPA 1989	0.05	17	24.18	3.013	ln(x)	ShapiroWilk
Field pH (Std. Units)	**MW-304 (bg)**	**Yes**	**6.29**	**8/9/2016**	**Dixon`s**	**0.05**	**23**	**7.968**	**0.3976**	**normal**	**ShapiroWilk**
Field pH (Std. Units)	MW-305 (bg)	No	n/a	n/a	EPA 1989	0.05	17	7.584	0.1349	normal	ShapiroWilk
Fluoride (mg/L)	**MW-304 (bg)**	**Yes**	**0.75,0.0475**	**4/7/2020,...**	**Dixon`s**	**0.05**	**23**	**0.5073**	**0.1175**	**normal**	**ShapiroWilk**
Fluoride (mg/L)	**MW-305 (bg)**	**Yes**	**0.0475**	**4/11/2022**	**Dixon`s**	**0.05**	**17**	**0.6278**	**0.1709**	**normal**	**ShapiroWilk**
Sulfate (mg/L)	MW-304 (bg)	No	n/a	n/a	EPA 1989	0.05	23	14.73	0.933	normal	ShapiroWilk
Sulfate (mg/L)	MW-305 (bg)	No	n/a	n/a	EPA 1989	0.05	17	133.5	5.088	normal	ShapiroWilk
Total Dissolved Solids (mg/L)	**MW-304 (bg)**	**Yes**	**172**	**10/8/2019**	**Dixon`s**	**0.05**	**24**	**219.2**	**13.83**	**normal**	**ShapiroWilk**
Total Dissolved Solids (mg/L)	MW-305 (bg)	No	n/a	n/a	Dixon`s	0.05	17	567.3	25.59	normal	ShapiroWilk

EPA Screening (suspected outliers for Dixon's Test)

MW-304 (bg)



n = 23

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 22052, std. dev. 2792, critical Tn 2.624

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9566
Critical = 0.928
The distribution was found to be normally distributed.

Constituent: Calcium Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

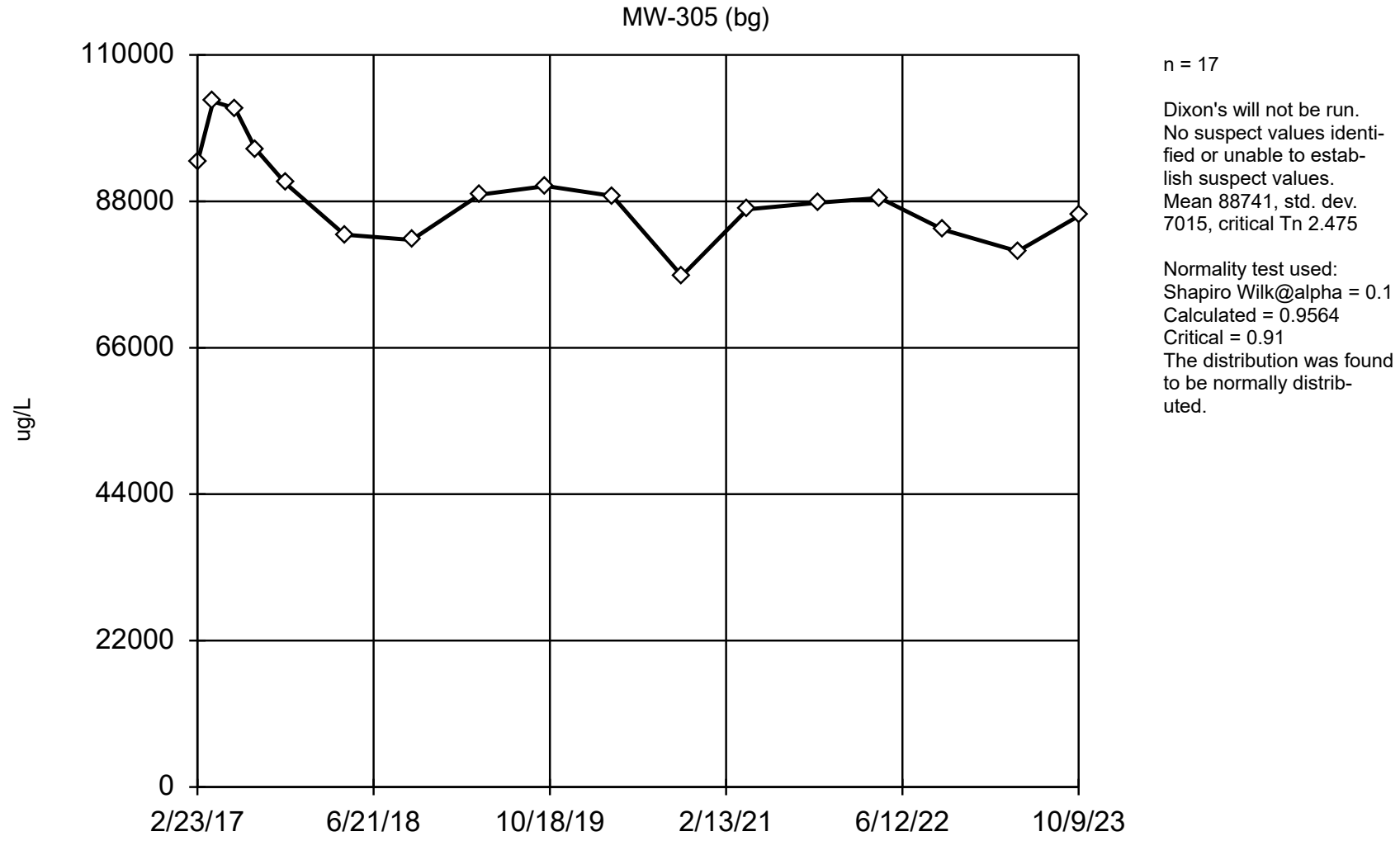
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

EPA 1989 Outlier Screening

Constituent: Calcium (ug/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304 (bg)
4/26/2016	24500
6/21/2016	25400
8/9/2016	26700
10/19/2016	23000
12/19/2016	24800
1/23/2017	24300
2/23/2017	24500
4/7/2017	24800
6/6/2017	23500
8/1/2017	23000
10/23/2017	20100
4/3/2018	20200
10/4/2018	19400
4/8/2019	19100
10/8/2019	20600
4/7/2020	18600
10/15/2020	15800
4/13/2021	19700
10/26/2021	21600
4/11/2022	25500
10/5/2022	19400
4/24/2023	22000
10/9/2023	20700

EPA Screening (suspected outliers for Dixon's Test)



n = 17

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 88741, std. dev. 7015, critical Tn 2.475

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9564
Critical = 0.91
The distribution was found to be normally distributed.

Constituent: Calcium Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

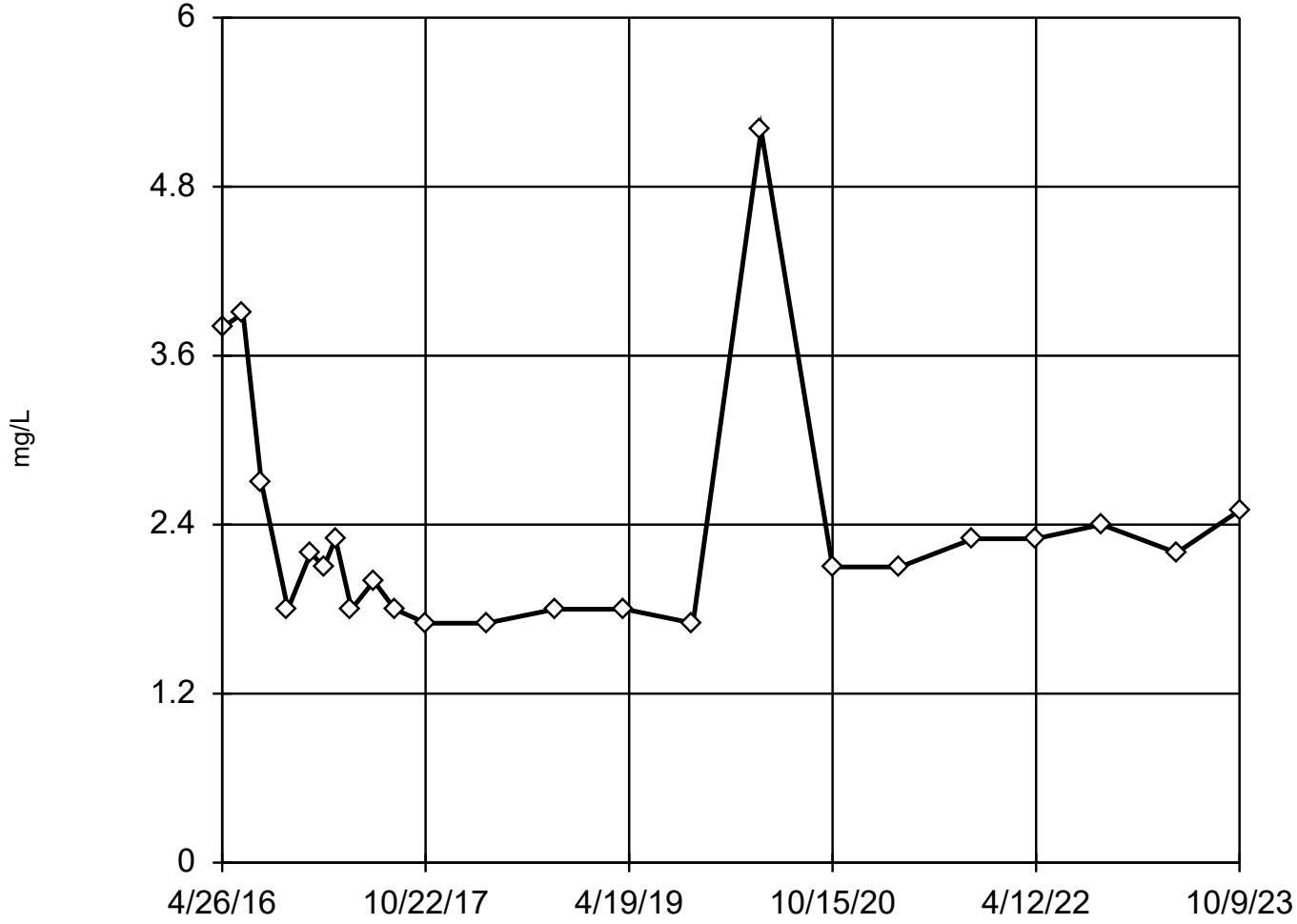
EPA 1989 Outlier Screening

Constituent: Calcium (ug/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305 (bg)
2/23/2017	93800
4/7/2017	103000
6/6/2017	102000
8/1/2017	95900
10/23/2017	90700
4/3/2018	83000
10/4/2018	82200
4/9/2019	89000
10/8/2019	90300
4/7/2020	88800
10/15/2020	76800
4/13/2021	86800
10/26/2021	87800
4/11/2022	88500
10/4/2022	83700
4/25/2023	80500
10/9/2023	85800

Tukey's Outlier Screening

MW-304 (bg)



n = 23

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 5.689, low cutoff = 0.7594, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

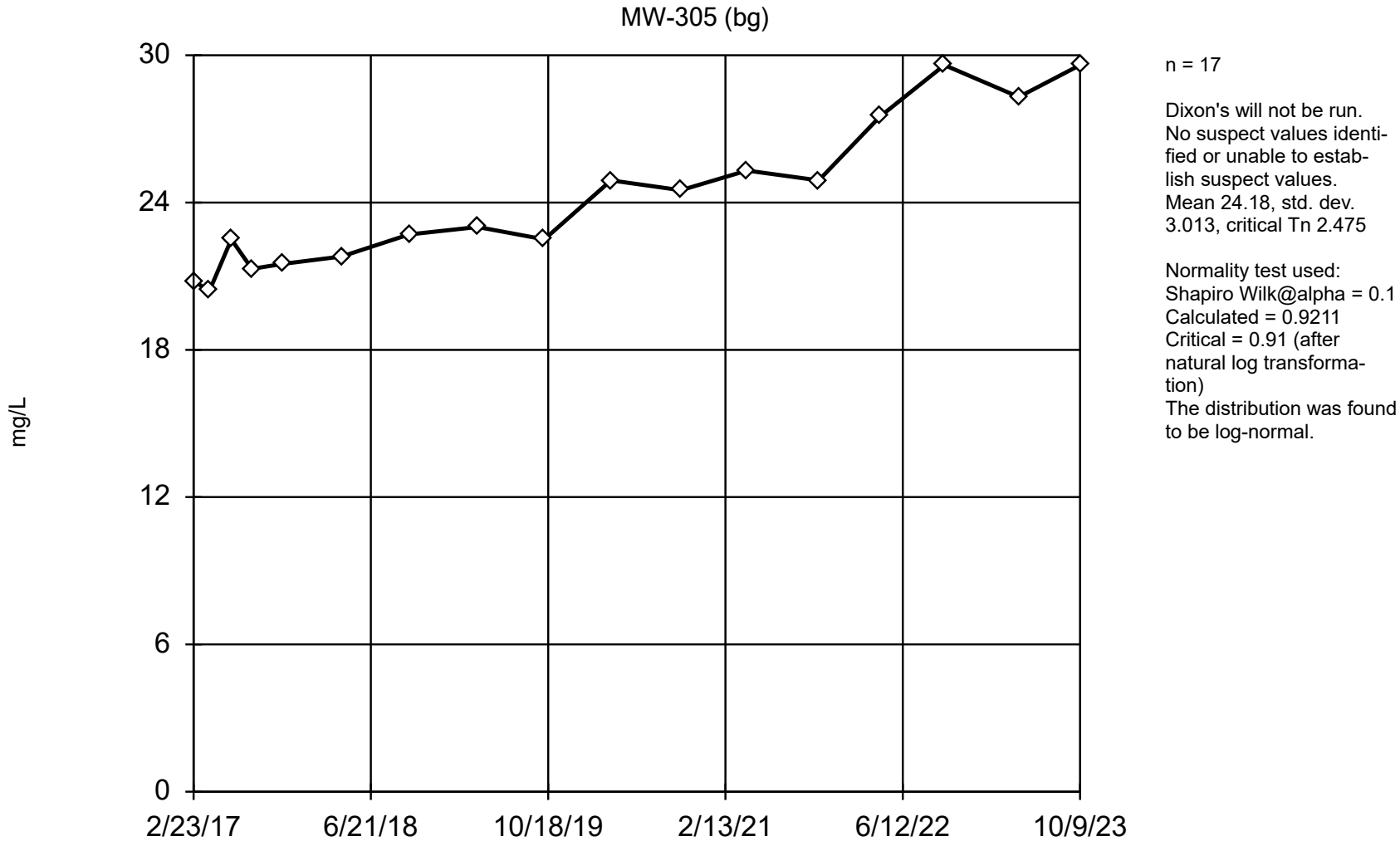
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Tukey's Outlier Screening

Constituent: Chloride (mg/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304 (bg)
4/26/2016	3.8 (J)
6/21/2016	3.9 (J)
8/9/2016	2.7 (J)
10/19/2016	1.8 (J)
12/19/2016	2.2
1/23/2017	2.1
2/23/2017	2.3
4/7/2017	1.8 (J)
6/6/2017	2
8/1/2017	1.8 (J)
10/23/2017	1.7 (J)
4/3/2018	1.7 (J)
10/4/2018	1.8 (J)
4/8/2019	1.8 (J)
10/8/2019	1.7 (J)
4/7/2020	5.2
10/15/2020	2.1
4/13/2021	2.1
10/26/2021	2.3
4/11/2022	2.3
10/5/2022	2.4
4/24/2023	2.2
10/9/2023	2.5

EPA Screening (suspected outliers for Dixon's Test)



n = 17

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 24.18, std. dev. 3.013, critical Tn 2.475

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9211
Critical = 0.91 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Chloride Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

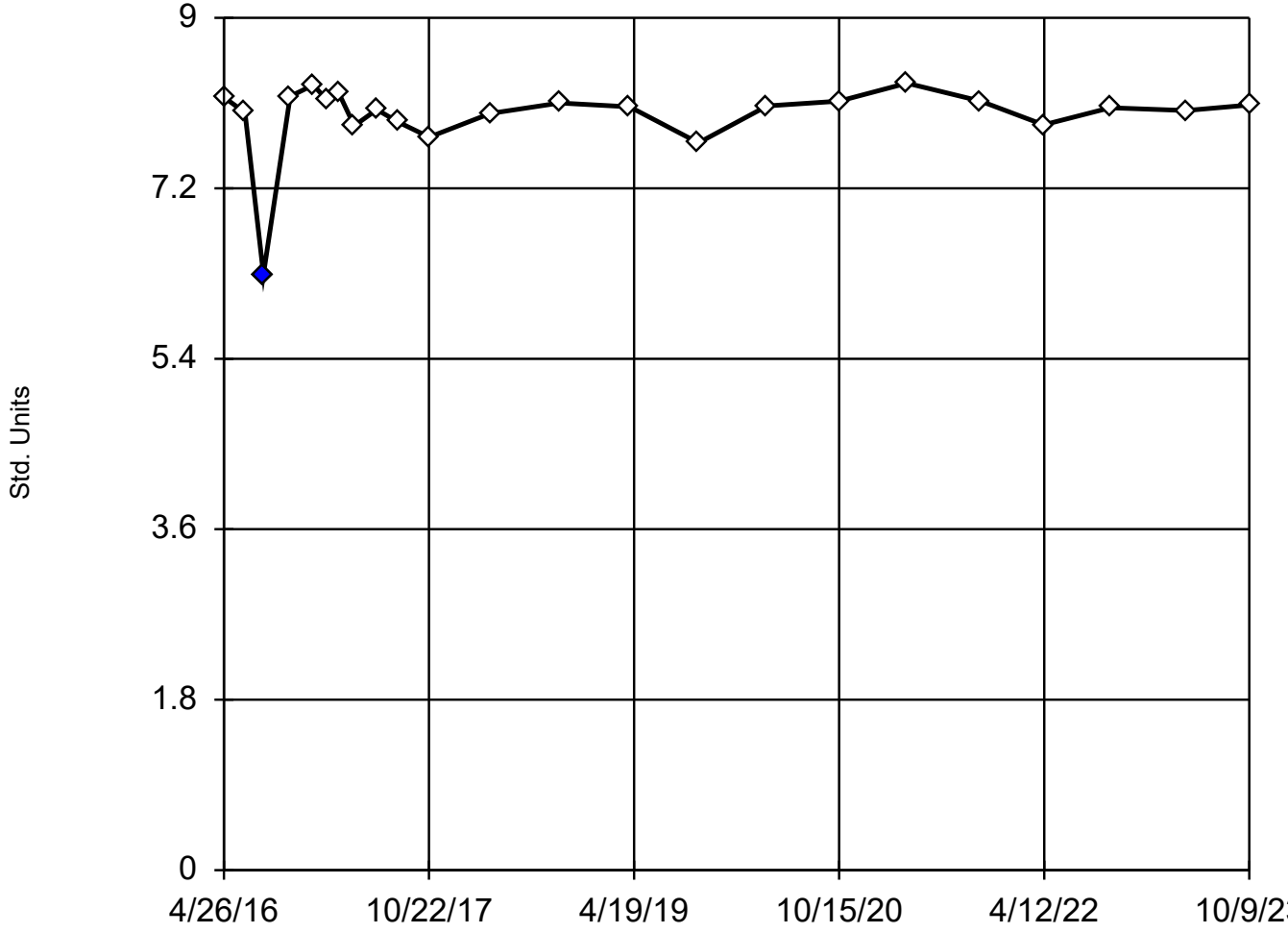
EPA 1989 Outlier Screening

Constituent: Chloride (mg/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305 (bg)
2/23/2017	20.8
4/7/2017	20.4
6/6/2017	22.5
8/1/2017	21.3
10/23/2017	21.5
4/3/2018	21.8
10/4/2018	22.7
4/9/2019	23
10/8/2019	22.5
4/7/2020	24.9
10/15/2020	24.5
4/13/2021	25.3
10/26/2021	24.9
4/11/2022	27.5
10/4/2022	29.6
4/25/2023	28.3
10/9/2023	29.6

Dixon's Outlier Test

MW-304 (bg)



n = 23

Statistical outlier is drawn as solid.
Testing for 1 low outlier.
Mean = 7.968.
Std. Dev. = 0.3976.
6.29 (X): c = 0.7513
tabl = 0.421.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9586
Critical = 0.926
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Field pH Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

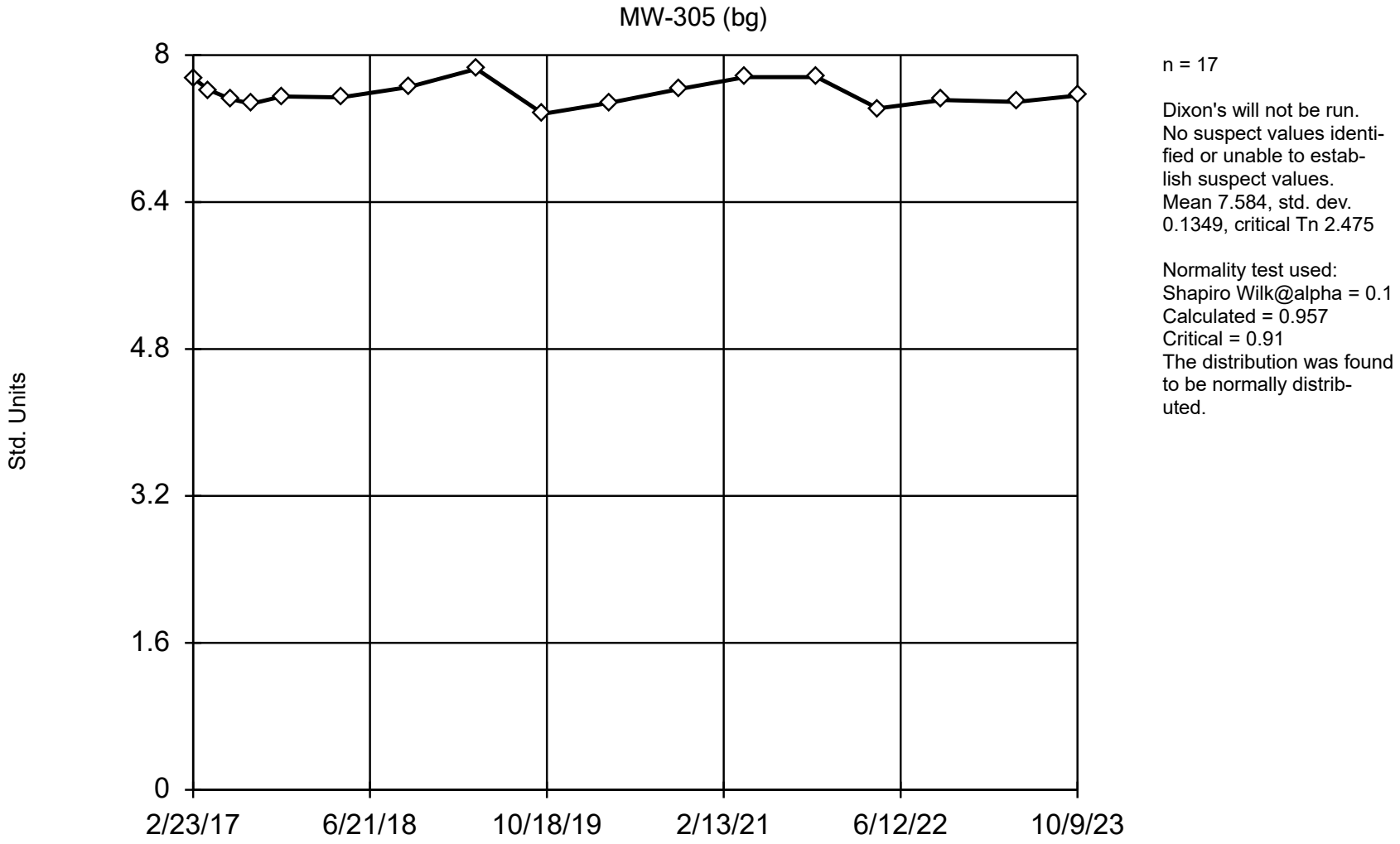
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Dixon's Outlier Test

Constituent: Field pH (Std. Units) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304 (bg)
4/26/2016	8.16
6/21/2016	8
8/9/2016	6.29 (XO)
10/19/2016	8.17
12/19/2016	8.29
1/23/2017	8.14
2/23/2017	8.22
4/7/2017	7.86
6/6/2017	8.03
8/1/2017	7.9
10/23/2017	7.74
4/3/2018	7.99
10/4/2018	8.1
4/8/2019	8.06
10/8/2019	7.68
4/7/2020	8.07
10/15/2020	8.12
4/13/2021	8.31
10/26/2021	8.12
4/11/2022	7.87
10/5/2022	8.05
4/24/2023	8.02
10/9/2023	8.08

EPA Screening (suspected outliers for Dixon's Test)



n = 17

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 7.584, std. dev. 0.1349, critical Tn 2.475

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.957
Critical = 0.91
The distribution was found to be normally distributed.

Constituent: Field pH Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

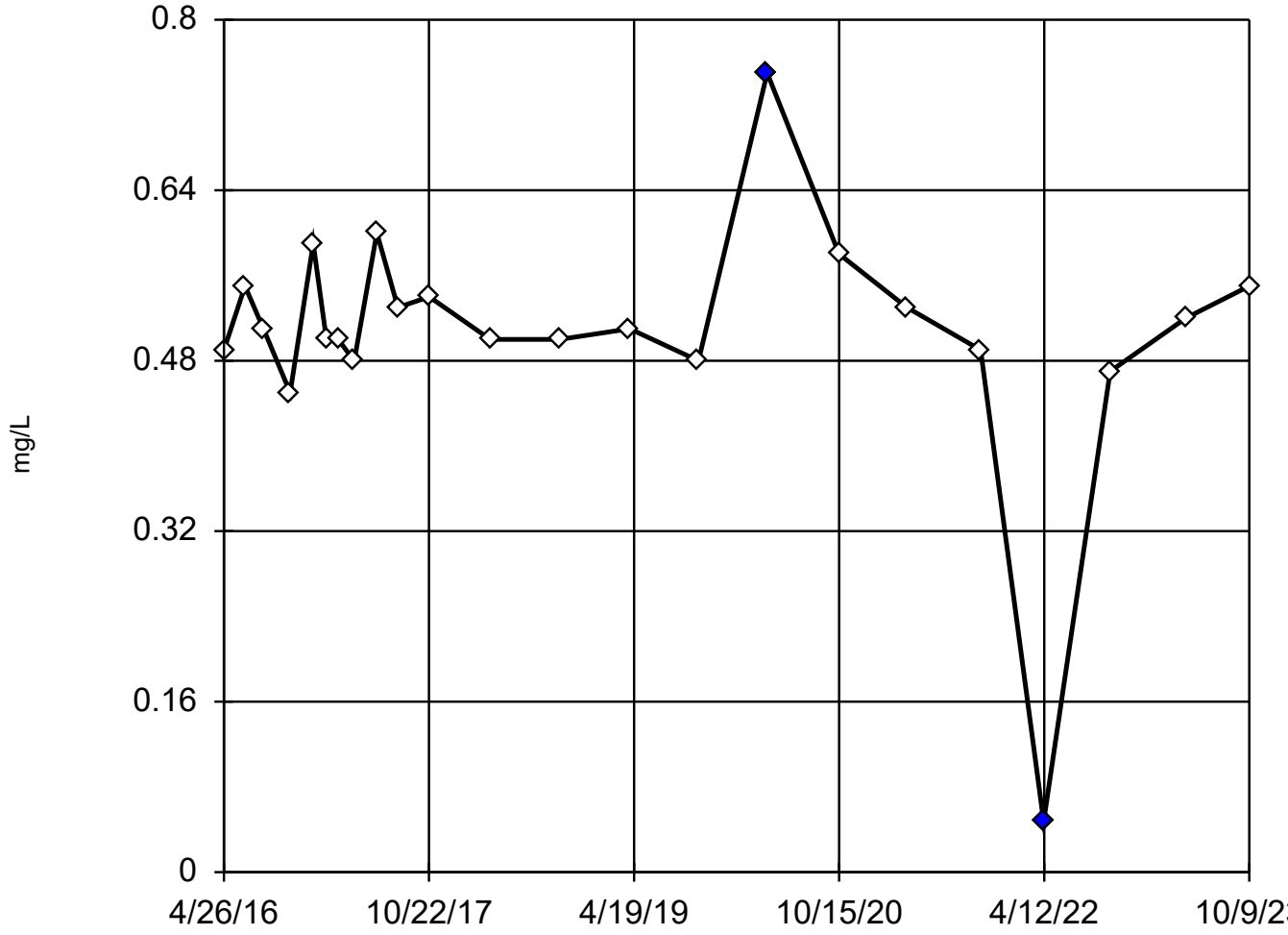
EPA 1989 Outlier Screening

Constituent: Field pH (Std. Units) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305 (bg)
2/23/2017	7.75
4/7/2017	7.62
6/6/2017	7.52
8/1/2017	7.47
10/23/2017	7.55
4/3/2018	7.54
10/4/2018	7.65
4/9/2019	7.85
10/8/2019	7.36
4/7/2020	7.48
10/15/2020	7.63
4/13/2021	7.76
10/26/2021	7.76
4/11/2022	7.42
10/4/2022	7.51
4/25/2023	7.49
10/9/2023	7.56

Dixon's Outlier Test

MW-304 (bg)



n = 23

Statistical outliers are drawn as solid.
Testing for 1 high and 1 low outliers.
Mean = 0.5073.
Std. Dev. = 0.1175.
0.75: c = 0.5714
tabl = 0.421.
<0.095 (U): c = 0.7788
tabl = 0.421.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9526
Critical = 0.923
The distribution, after removal of suspect values, was found to be normally distributed.

Constituent: Fluoride Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Dixon's Outlier Test

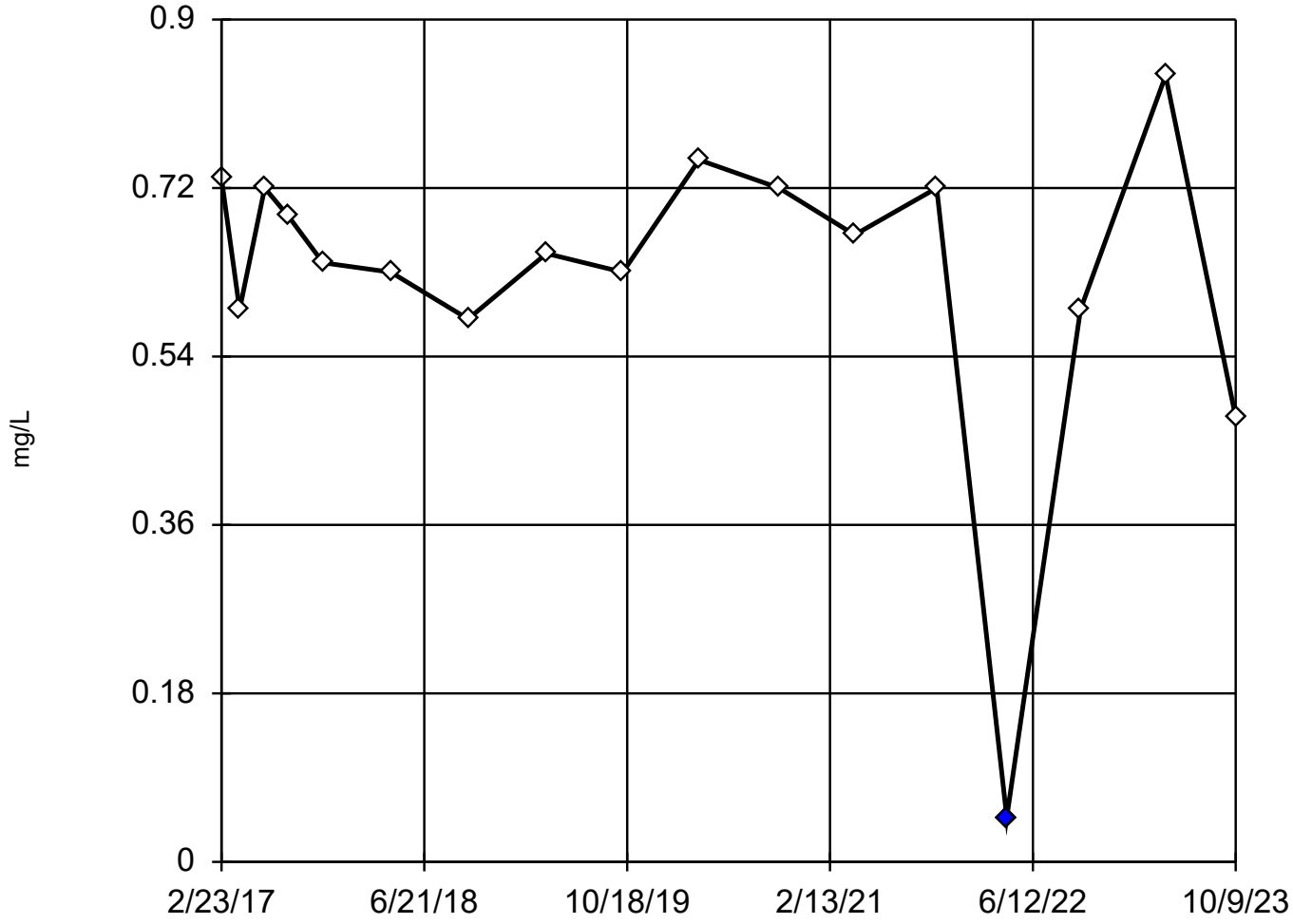
Constituent: Fluoride (mg/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304 (bg)
4/26/2016	0.49
6/21/2016	0.55
8/9/2016	0.51
10/19/2016	0.45
12/19/2016	0.59
1/23/2017	0.5
2/23/2017	0.5
4/7/2017	0.48
6/6/2017	0.6
8/1/2017	0.53
10/23/2017	0.54
4/3/2018	0.5
10/4/2018	0.5
4/8/2019	0.51
10/8/2019	0.48
4/7/2020	0.75 (O)
10/15/2020	0.58
4/13/2021	0.53
10/26/2021	0.49
4/11/2022	<0.095 (UO)
10/5/2022	0.47
4/24/2023	0.52
10/9/2023	0.55

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

Dixon's Outlier Test

MW-305 (bg)



n = 17

Statistical outlier is drawn as solid.
Testing for 2 low outliers.
Mean = 0.6278.
Std. Dev. = 0.1709.
<0.95 (U): c = 0.451
tabl = 0.49.
Alpha = 0.05.
<0.095 (U): c = 0.7802
tabl = 0.49.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9715
Critical = 0.906
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Fluoride Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

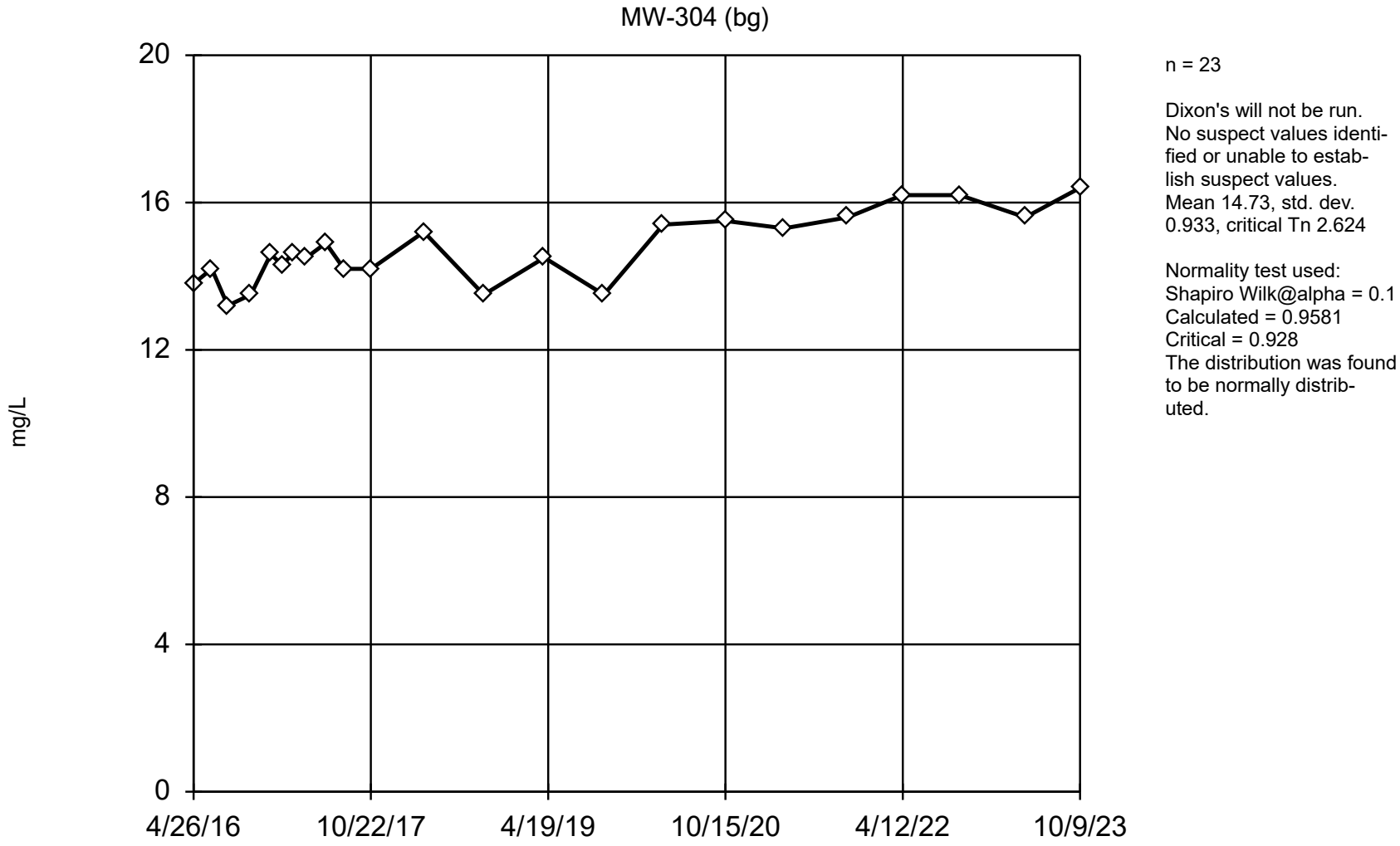
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Dixon's Outlier Test

Constituent: Fluoride (mg/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305 (bg)
2/23/2017	0.73
4/7/2017	0.59
6/6/2017	0.72
8/1/2017	0.69
10/23/2017	0.64
4/3/2018	0.63
10/4/2018	0.58
4/9/2019	0.65
10/8/2019	0.63
4/7/2020	0.75
10/15/2020	0.72
4/13/2021	0.67
10/26/2021	0.72 (J)
4/11/2022	<0.095 (UO)
10/4/2022	0.59
4/25/2023	0.84 (J)
10/9/2023	<0.95 (U)

EPA Screening (suspected outliers for Dixon's Test)



n = 23

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 14.73, std. dev. 0.933, critical Tn 2.624

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9581
Critical = 0.928
The distribution was found to be normally distributed.

Constituent: Sulfate Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

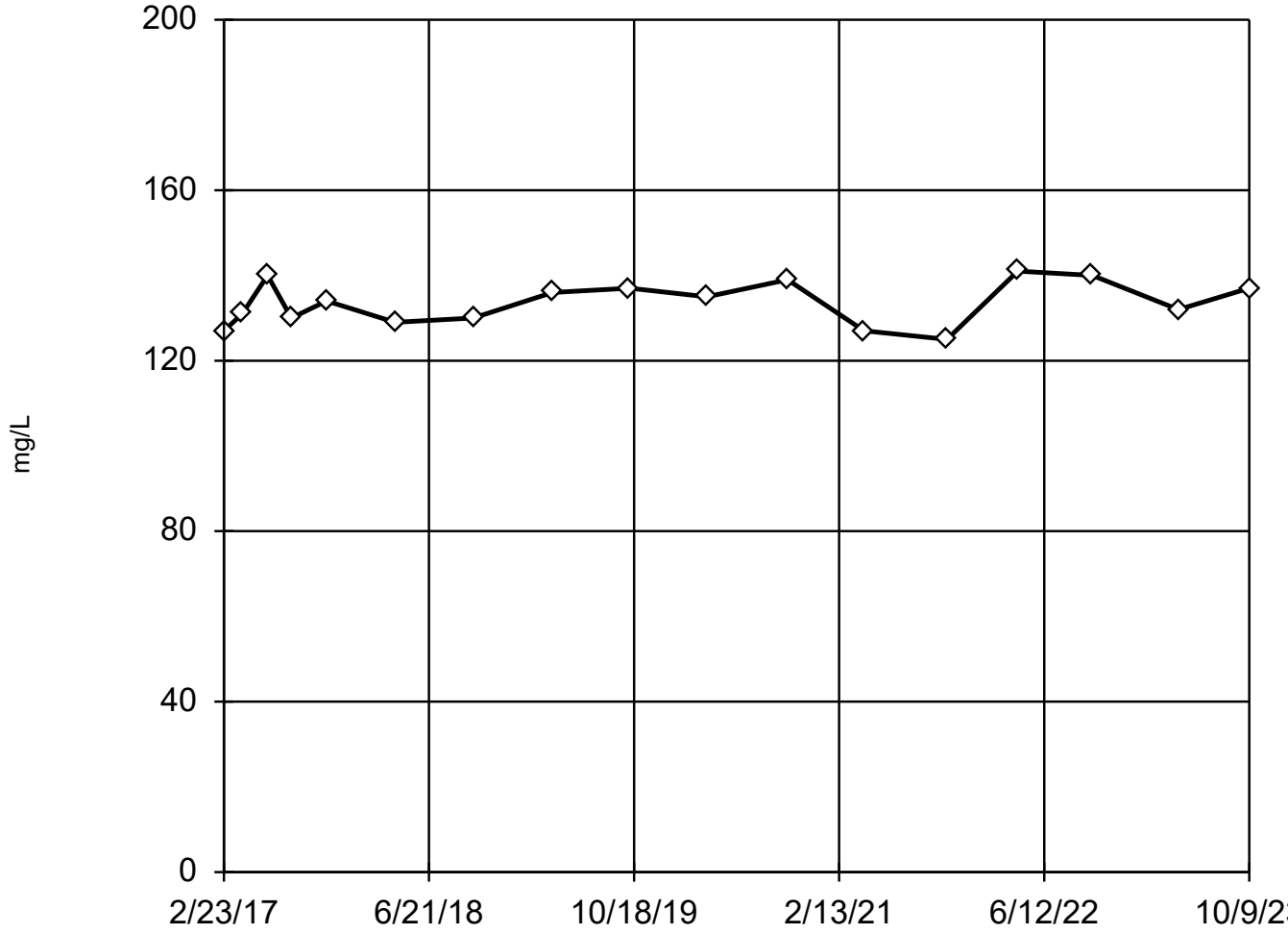
EPA 1989 Outlier Screening

Constituent: Sulfate (mg/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304 (bg)
4/26/2016	13.8
6/21/2016	14.2
8/9/2016	13.2
10/19/2016	13.5
12/19/2016	14.6
1/23/2017	14.3
2/23/2017	14.6
4/7/2017	14.5
6/6/2017	14.9
8/1/2017	14.2
10/23/2017	14.2
4/3/2018	15.2
10/4/2018	13.5
4/8/2019	14.5
10/8/2019	13.5
4/7/2020	15.4
10/15/2020	15.5
4/13/2021	15.3
10/26/2021	15.6
4/11/2022	16.2
10/5/2022	16.2
4/24/2023	15.6
10/9/2023	16.4

EPA Screening (suspected outliers for Dixon's Test)

MW-305 (bg)



n = 17

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 133.5, std. dev. 5.088, critical Tn 2.475

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9471
Critical = 0.91
The distribution was found to be normally distributed.

Constituent: Sulfate Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

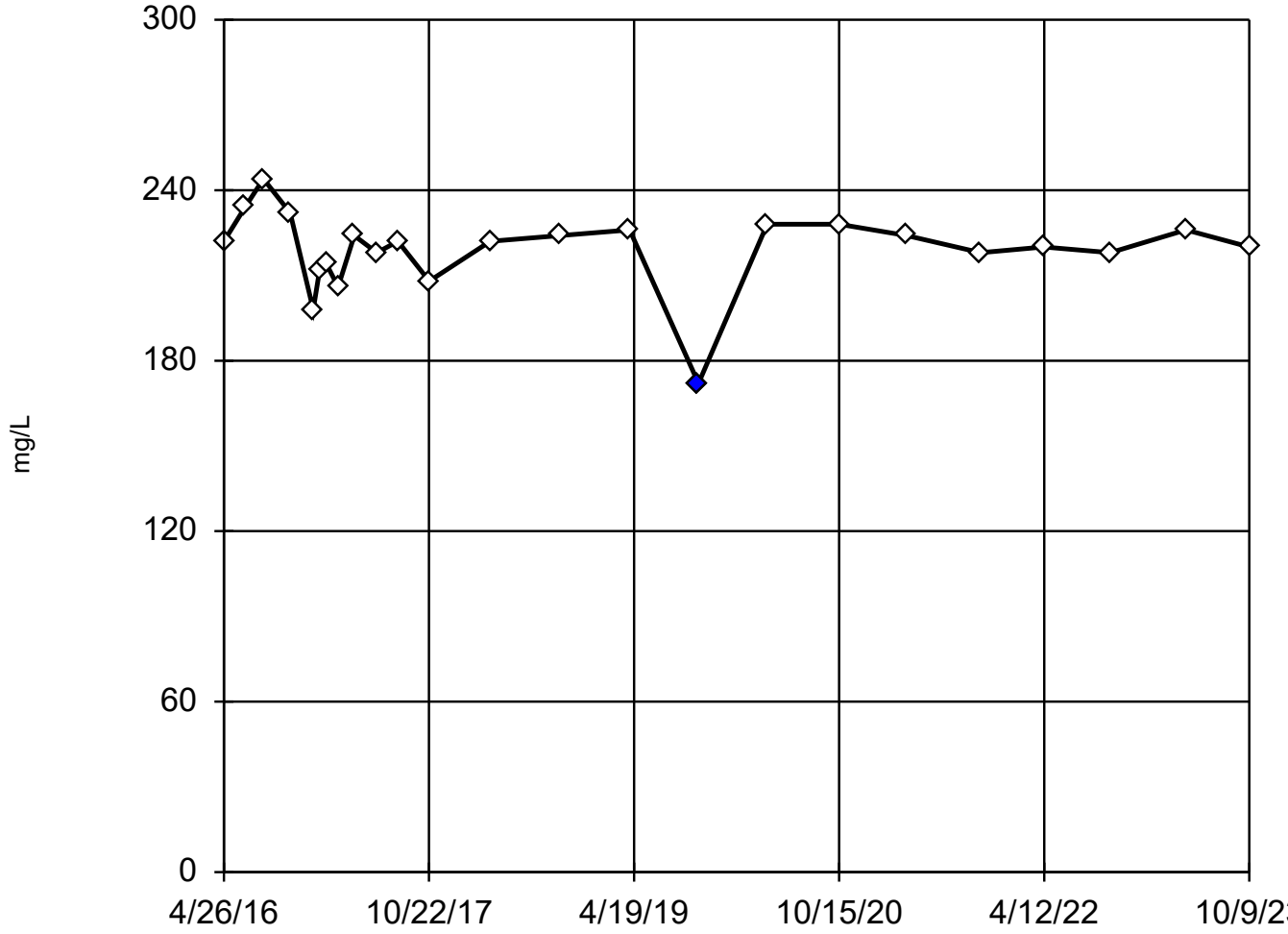
EPA 1989 Outlier Screening

Constituent: Sulfate (mg/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305 (bg)
2/23/2017	127
4/7/2017	131
6/6/2017	140
8/1/2017	130
10/23/2017	134
4/3/2018	129
10/4/2018	130
4/9/2019	136
10/8/2019	137
4/7/2020	135
10/15/2020	139
4/13/2021	127
10/26/2021	125
4/11/2022	141
10/4/2022	140
4/25/2023	132
10/9/2023	137

Dixon's Outlier Test

MW-304 (bg)



n = 24

Statistical outlier is drawn as solid.
Testing for 1 low outlier.
Mean = 219.2.
Std. Dev. = 13.83.
172: c = 0.5667
tabl = 0.413.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9699
Critical = 0.928
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Total Dissolved Solids Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

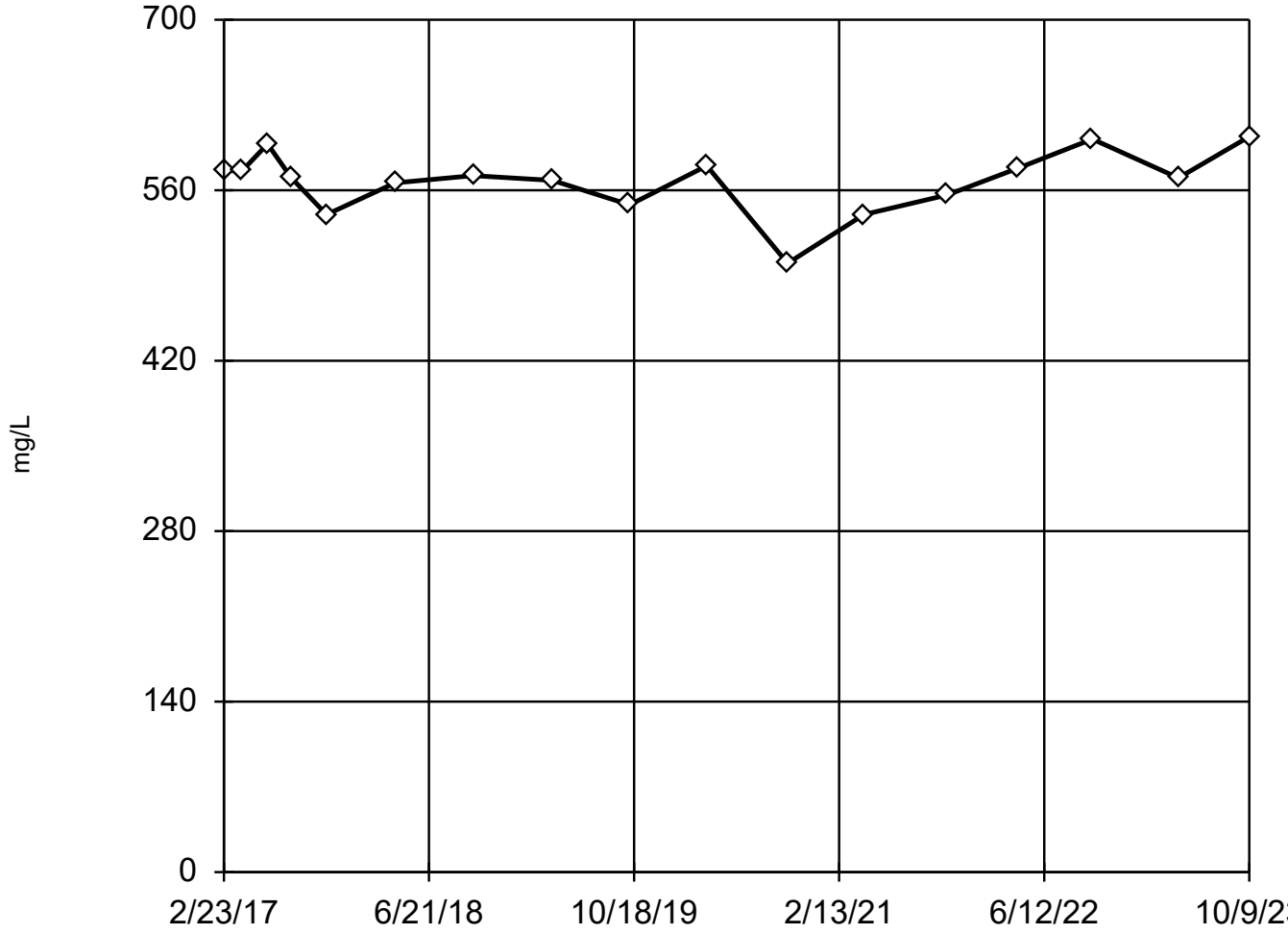
Dixon's Outlier Test

Constituent: Total Dissolved Solids (mg/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304 (bg)
4/26/2016	222
6/21/2016	234
8/9/2016	244
10/19/2016	232
12/19/2016	198
1/5/2017	212
1/23/2017	214
2/23/2017	206
4/7/2017	224
6/6/2017	218
8/1/2017	222
10/23/2017	208
4/3/2018	222
10/4/2018	224
4/8/2019	226
10/8/2019	172 (O)
4/7/2020	228
10/15/2020	228
4/13/2021	224
10/26/2021	218
4/11/2022	220
10/5/2022	218
4/24/2023	226
10/9/2023	220

Dixon's Outlier Test

MW-305 (bg)



n = 17

No statistical outliers.
Testing for 1 low outlier.
Mean = 567.3.
Std. Dev. = 25.59.
500: c = 0.4082
tabl = 0.49.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9389
Critical = 0.906
The distribution was found to be normally distrib-uted.

Constituent: Total Dissolved Solids Analysis Run 3/12/2024 1:39 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Dixon's Outlier Test

Constituent: Total Dissolved Solids (mg/L) Analysis Run 3/12/2024 1:41 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305 (bg)
2/23/2017	576
4/7/2017	576
6/6/2017	598
8/1/2017	570
10/23/2017	540
4/3/2018	566
10/4/2018	572
4/9/2019	568
10/8/2019	548
4/7/2020	580
10/15/2020	500
4/13/2021	540
10/26/2021	556
4/11/2022	578
10/4/2022	602
4/25/2023	570
10/9/2023	604

Attachment 3

Outlier Analysis – Intrawell

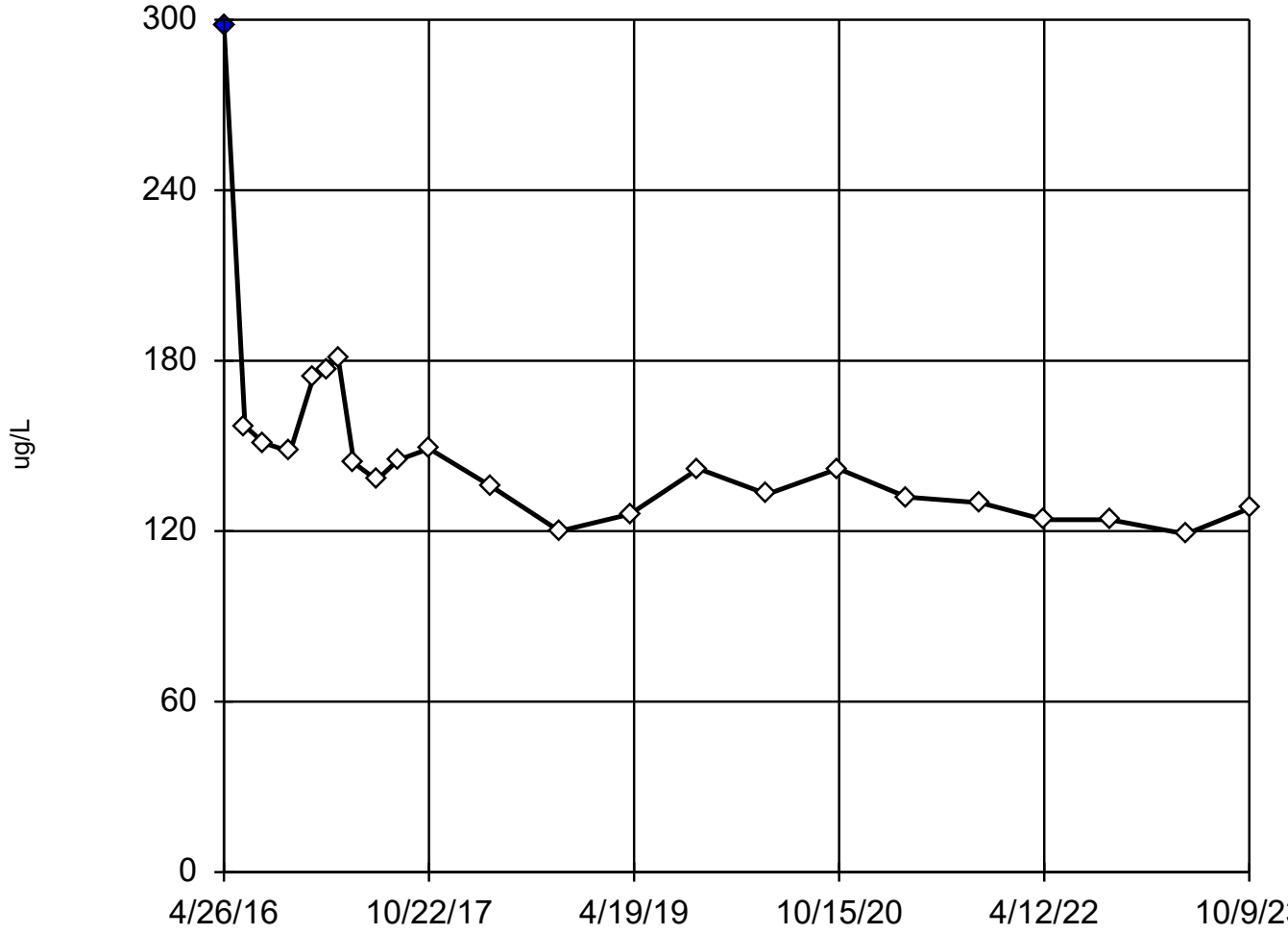
Outlier Analysis

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 3/12/2024, 1:46 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Boron (ug/L)	**MW-301**	**Yes**	**298**	**4/26/2016**	**Dixon`s**	**0.05**	**23**	**148.6**	**36.92**	**ln(x)**	**ShapiroWilk**
Boron (ug/L)	**MW-302**	**Yes**	**198**	**4/26/2016**	**NP (nrm)**	**NaN**	**23**	**128.6**	**18.04**	**unknown**	**ShapiroWilk**
Boron (ug/L)	MW-303	No	n/a	n/a	EPA 1989	0.05	23	88.06	5.281	normal	ShapiroWilk

Dixon's Outlier Test

MW-301



n = 23

Statistical outlier is drawn as solid.
Testing for 1 high outlier.
Mean = 148.6.
Std. Dev. = 36.92.
298 (X): c = 0.5941
tabl = 0.421.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9367
Critical = 0.926 (after natural log transformation)
The distribution, after removal of suspect value, was found to be log-normal.

Constituent: Boron Analysis Run 3/12/2024 1:44 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

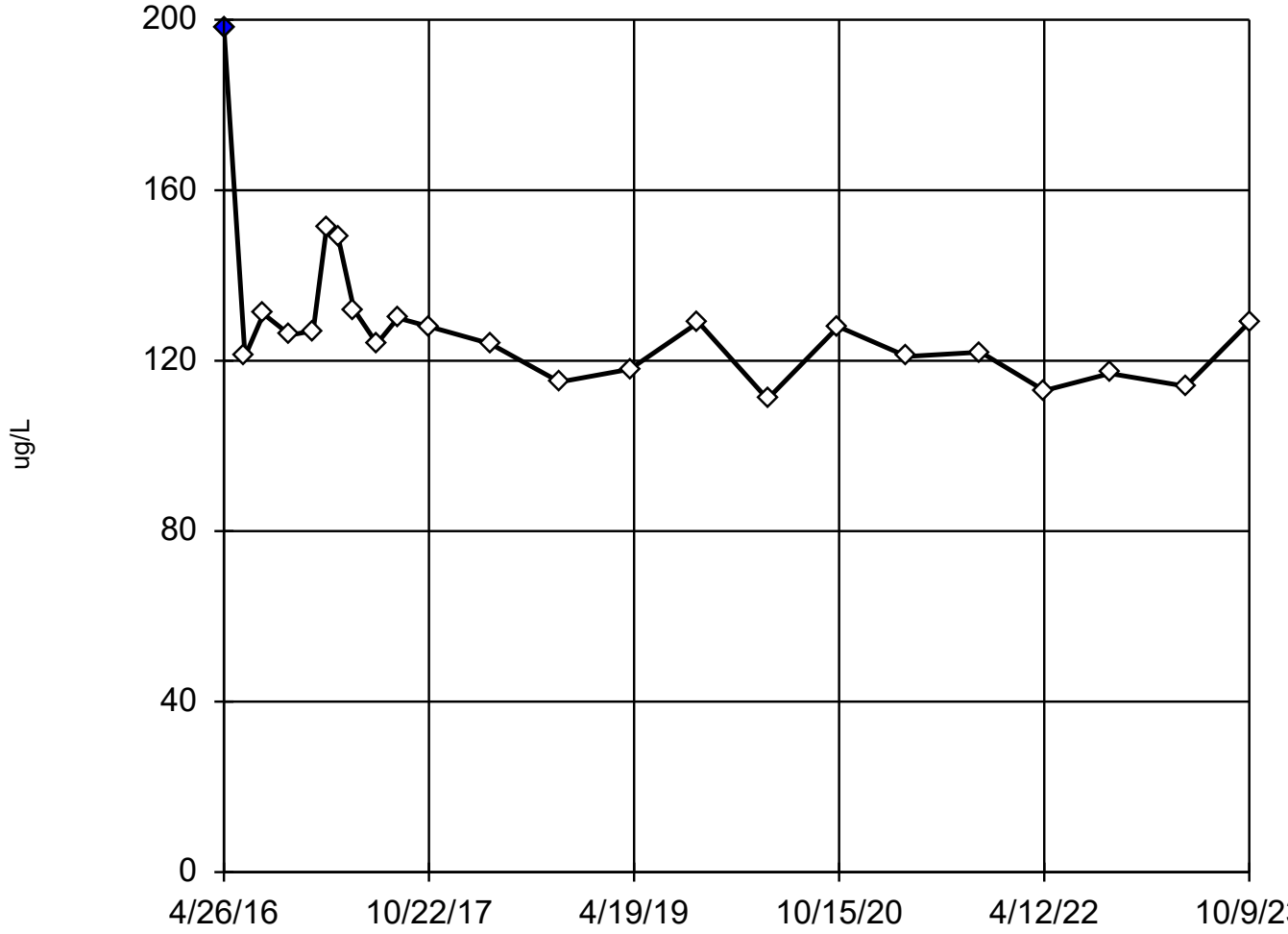
Dixon's Outlier Test

Constituent: Boron (ug/L) Analysis Run 3/12/2024 1:46 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301
4/26/2016	298 (XO)
6/21/2016	157
8/10/2016	151
10/19/2016	148
12/19/2016	174
1/23/2017	177
2/23/2017	181
4/6/2017	144
6/6/2017	138
8/1/2017	145
10/23/2017	149
4/3/2018	136
10/4/2018	120
4/9/2019	126
10/8/2019	142
4/7/2020	133
10/13/2020	142
4/13/2021	132
10/26/2021	130
4/13/2022	124
10/4/2022	124
4/24/2023	119
10/9/2023	128

Tukey's Outlier Screening

MW-302



n = 23

Outlier is drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 173.8, low cutoff = 88.25, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 3/12/2024 1:44 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

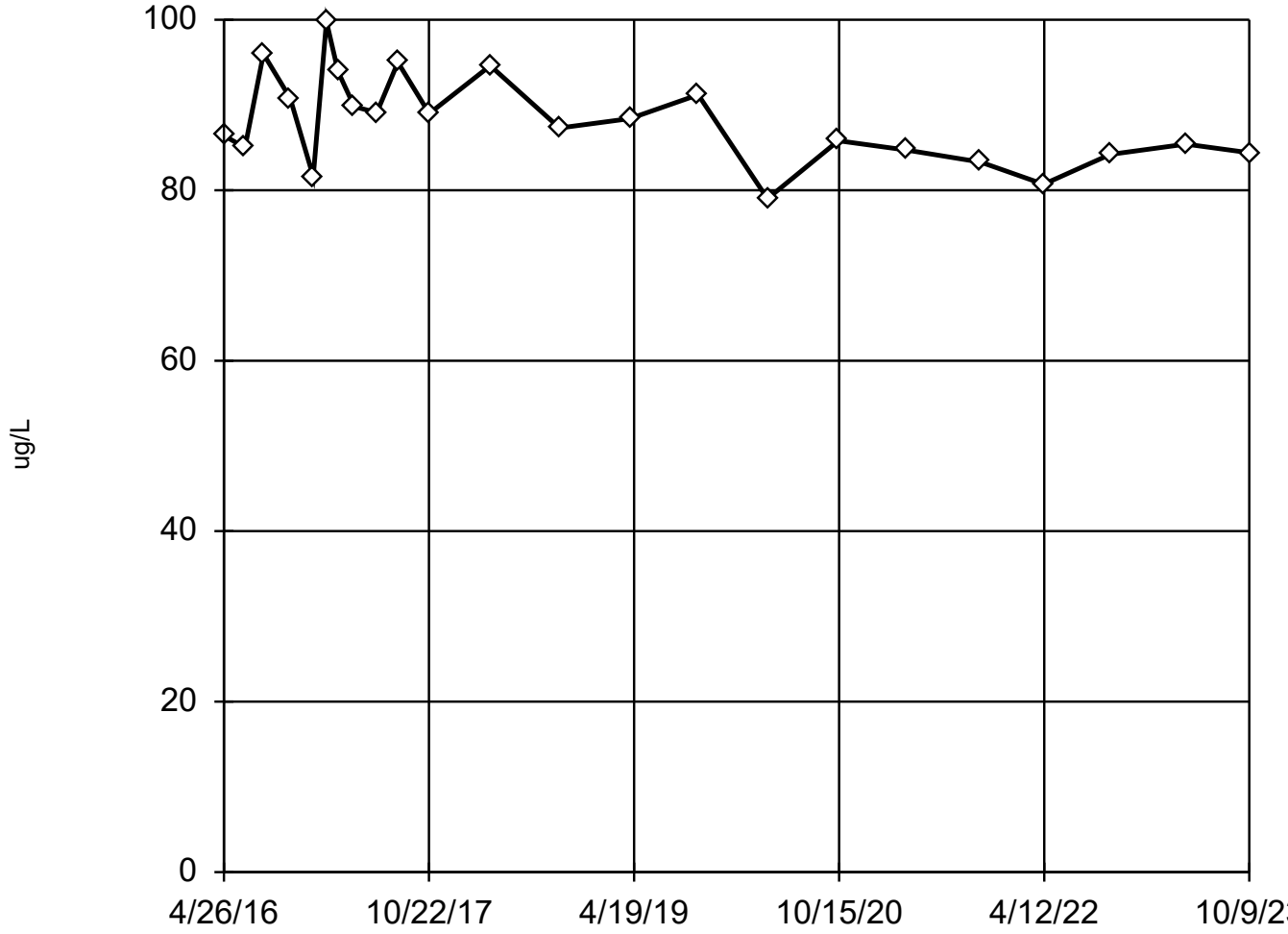
Tukey's Outlier Screening

Constituent: Boron (ug/L) Analysis Run 3/12/2024 1:46 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-302
4/26/2016	198 (XO)
6/21/2016	121
8/9/2016	131
10/19/2016	126
12/19/2016	127
1/23/2017	151
2/23/2017	149
4/6/2017	132
6/6/2017	124
8/1/2017	130
10/23/2017	128
4/3/2018	124
10/4/2018	115
4/9/2019	118
10/8/2019	129
4/8/2020	111
10/13/2020	128
4/13/2021	121
10/26/2021	122
4/13/2022	113
10/4/2022	117
4/24/2023	114
10/9/2023	129

EPA Screening (suspected outliers for Dixon's Test)

MW-303



n = 23

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 88.06, std. dev. 5.281, critical Tn 2.624

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9749
Critical = 0.928
The distribution was found to be normally distributed.

Constituent: Boron Analysis Run 3/12/2024 1:44 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

EPA 1989 Outlier Screening

Constituent: Boron (ug/L) Analysis Run 3/12/2024 1:46 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-303
4/26/2016	86.4
6/21/2016	85
8/9/2016	96
10/19/2016	90.8
12/19/2016	81.6
1/23/2017	99.8
2/23/2017	93.9
4/7/2017	89.8
6/6/2017	89.1
8/1/2017	95
10/23/2017	89
4/3/2018	94.6
10/4/2018	87.3
4/9/2019	88.4
10/7/2019	91.2
4/8/2020	79
10/13/2020	85.8
4/13/2021	84.7
10/26/2021	83.3
4/11/2022	80.7
10/5/2022	84.2
4/24/2023	85.4
10/9/2023	84.4

Attachment 4A

Welch’s/Mann-Whitney Comparison - Interwell

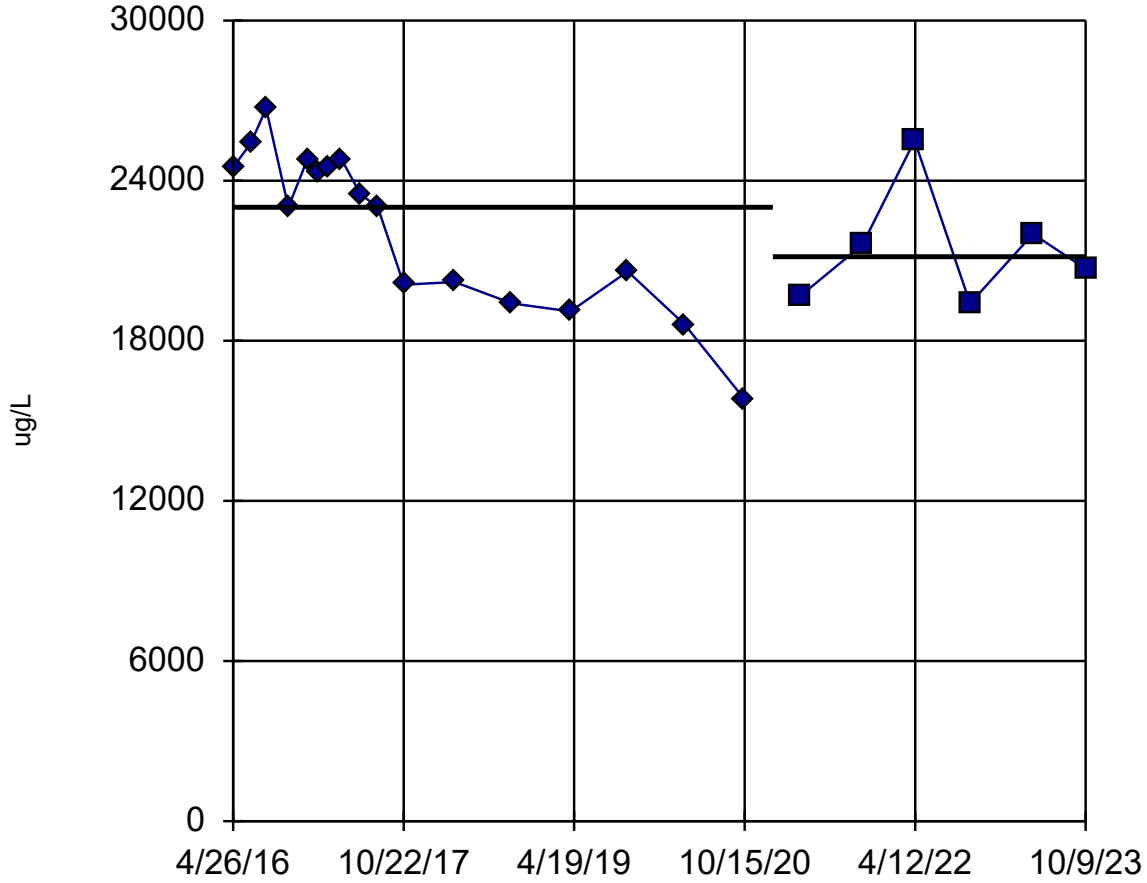
Welch's t-test/Mann-Whitney

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 5/24/2024, 3:28 PM

Constituent	Well	Calc.	0.1	0.05	0.025	0.01	Method
Calcium (ug/L)	MW-304 (bg)	-0....	No	No	No	No	Welch`s
Calcium (ug/L)	MW-305 (bg)	-1.837	No	No	No	No	Welch`s
Chloride (mg/L)	MW-304 (bg)	1.482	Yes	No	No	No	Mann-W (normality)
Chloride (mg/L)	**MW-305 (bg)**	**5.508**	**Yes**	**Yes**	**Yes**	**Yes**	**Welch`s**
Field pH (Std. Units)	MW-304 (bg)	0.5811	No	No	No	No	Welch`s
Field pH (Std. Units)	MW-305 (bg)	-0....	No	No	No	No	Welch`s
Fluoride (mg/L)	MW-304 (bg)	-0....	No	No	No	No	Mann-W (normality)
Fluoride (mg/L)	MW-305 (bg)	-0....	No	No	No	No	Welch`s
Sulfate (mg/L)	**MW-304 (bg)**	**6.357**	**Yes**	**Yes**	**Yes**	**Yes**	**Welch`s**
Sulfate (mg/L)	MW-305 (bg)	0.0...	No	No	No	No	Welch`s
Total Dissolved Solids (mg/L)	MW-304 (bg)	-0....	No	No	No	No	Mann-W (normality)
Total Dissolved Solids (mg/L)	MW-305 (bg)	0.9199	No	No	No	No	Welch`s

Welch's t-test

MW-304 (bg)



◆ MW-304 background

■ MW-304 compliance

background median = 23000

compliance median = 21150

t = -0.6627

Alpha	Table	Sig.
0.1	1.356	No
0.05	1.782	No
0.025	2.179	No
0.01	2.681	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9321, critical = 0.892.

Constituent: Calcium Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

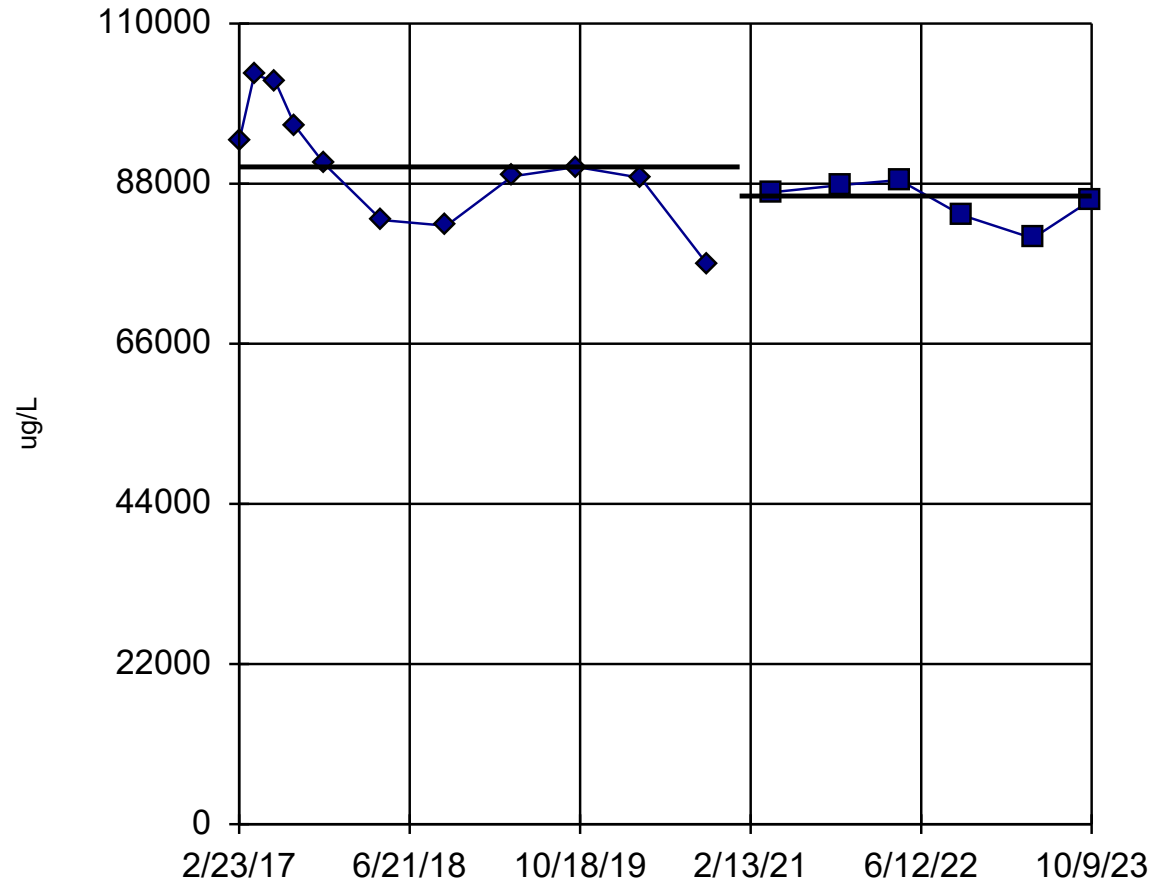
Welch's t-test

Constituent: Calcium (ug/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304	MW-304
4/26/2016	24500	
6/21/2016	25400	
8/9/2016	26700	
10/19/2016	23000	
12/19/2016	24800	
1/23/2017	24300	
2/23/2017	24500	
4/7/2017	24800	
6/6/2017	23500	
8/1/2017	23000	
10/23/2017	20100	
4/3/2018	20200	
10/4/2018	19400	
4/8/2019	19100	
10/8/2019	20600	
4/7/2020	18600	
10/15/2020	15800	
4/13/2021		19700
10/26/2021		21600
4/11/2022		25500
10/5/2022		19400
4/24/2023		22000
10/9/2023		20700

Welch's t-test

MW-305 (bg)



background median = 90300

compliance median = 86300

t = -1.837

Alpha	Table	Sig.
0.1	1.345	No
0.05	1.761	No
0.025	2.145	No
0.01	2.624	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9655, critical = 0.85.

Constituent: Calcium Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

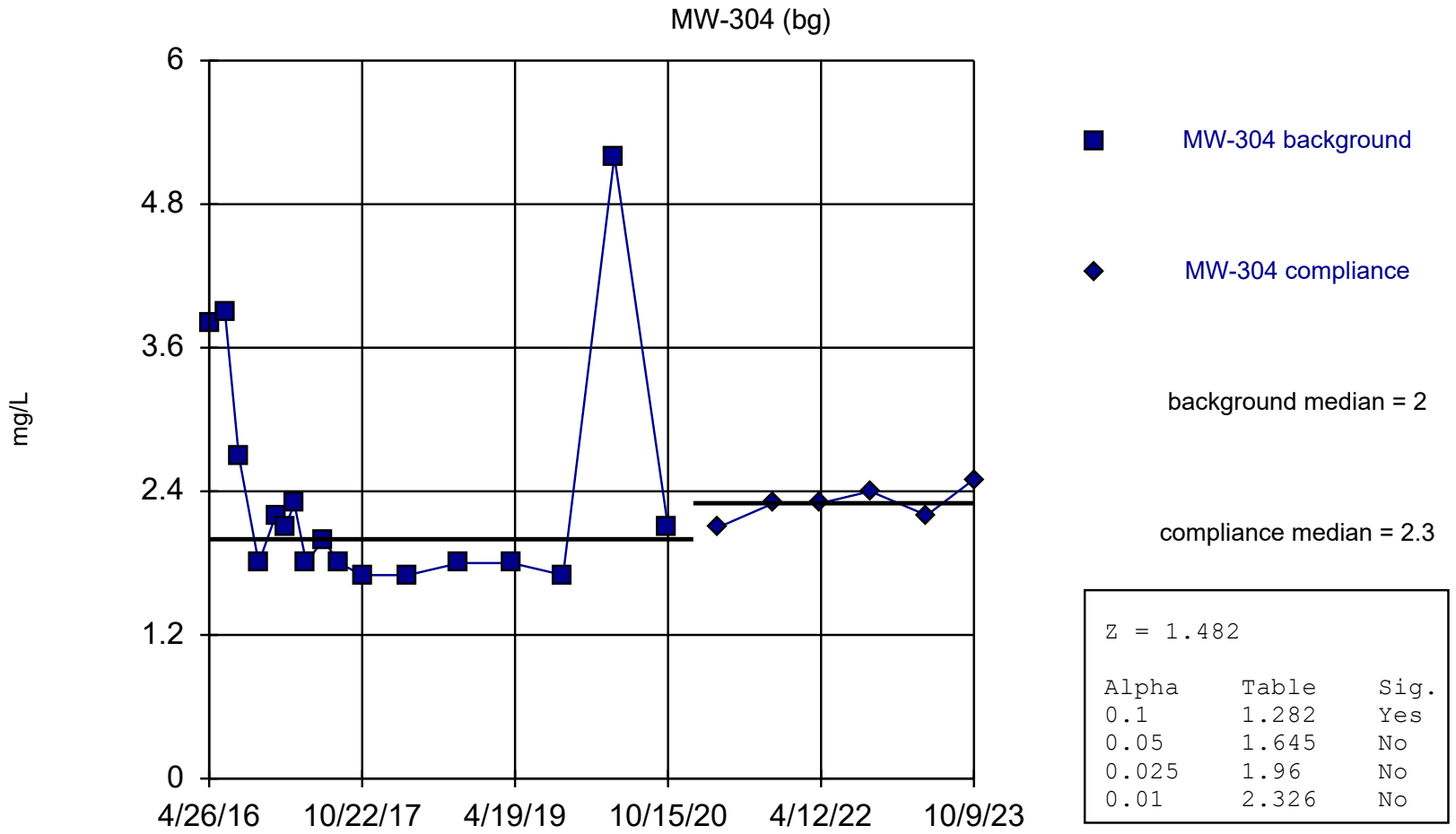
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Welch's t-test

Constituent: Calcium (ug/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305	MW-305
2/23/2017	93800	
4/7/2017	103000	
6/6/2017	102000	
8/1/2017	95900	
10/23/2017	90700	
4/3/2018	83000	
10/4/2018	82200	
4/9/2019	89000	
10/8/2019	90300	
4/7/2020	88800	
10/15/2020	76800	
4/13/2021		86800
10/26/2021		87800
4/11/2022		88500
10/4/2022		83700
4/25/2023		80500
10/9/2023		85800

Mann-Whitney (Wilcoxon Rank Sum)



Mann-Whitney (Wilcoxon Rank Sum) used in lieu of Welch's t-test because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level.

Constituent: Chloride Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

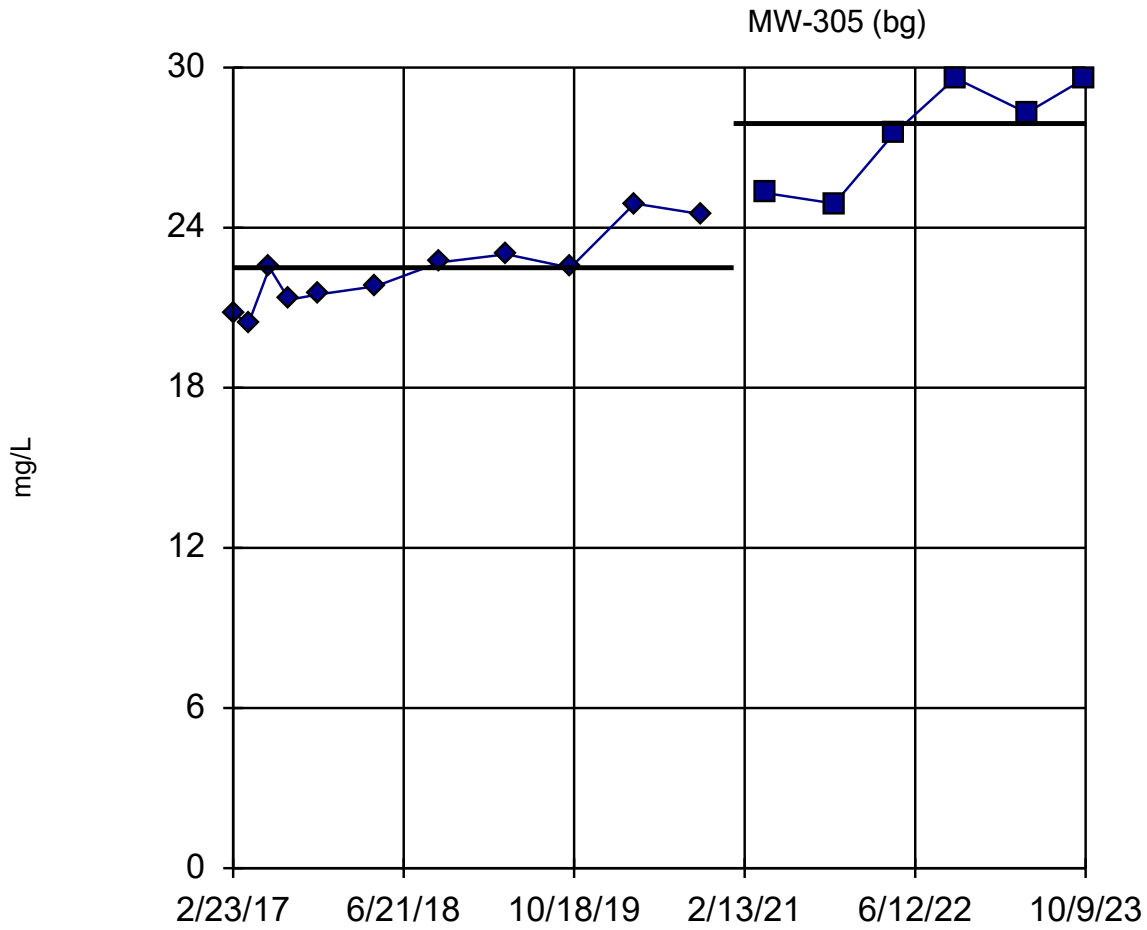
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Chloride (mg/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304	MW-304
4/26/2016	3.8 (J)	
6/21/2016	3.9 (J)	
8/9/2016	2.7 (J)	
10/19/2016	1.8 (J)	
12/19/2016	2.2	
1/23/2017	2.1	
2/23/2017	2.3	
4/7/2017	1.8 (J)	
6/6/2017	2	
8/1/2017	1.8 (J)	
10/23/2017	1.7 (J)	
4/3/2018	1.7 (J)	
10/4/2018	1.8 (J)	
4/8/2019	1.8 (J)	
10/8/2019	1.7 (J)	
4/7/2020	5.2	
10/15/2020	2.1	
4/13/2021		2.1
10/26/2021		2.3
4/11/2022		2.3
10/5/2022		2.4
4/24/2023		2.2
10/9/2023		2.5

Welch's t-test



background median = 22.5

compliance median = 27.9

t = 5.508

Alpha	Table	Sig.
0.1	1.397	Yes
0.05	1.86	Yes
0.025	2.306	Yes
0.01	2.896	Yes

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9445, critical = 0.85.

Constituent: Chloride Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

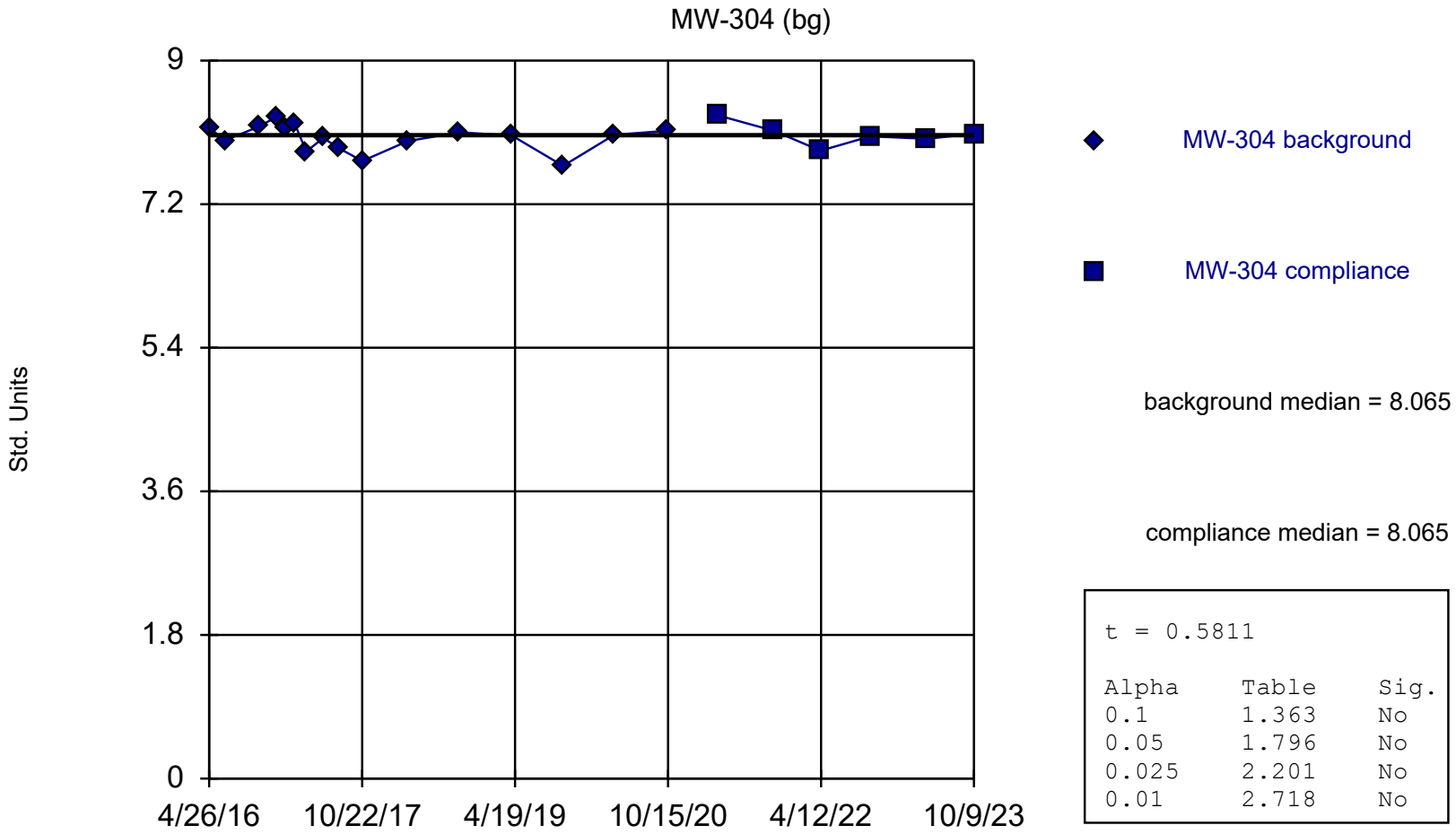
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Welch's t-test

Constituent: Chloride (mg/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305	MW-305
2/23/2017	20.8	
4/7/2017	20.4	
6/6/2017	22.5	
8/1/2017	21.3	
10/23/2017	21.5	
4/3/2018	21.8	
10/4/2018	22.7	
4/9/2019	23	
10/8/2019	22.5	
4/7/2020	24.9	
10/15/2020	24.5	
4/13/2021		25.3
10/26/2021		24.9
4/11/2022		27.5
10/4/2022		29.6
4/25/2023		28.3
10/9/2023		29.6

Welch's t-test



Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9483, critical = 0.887.

Constituent: Field pH Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

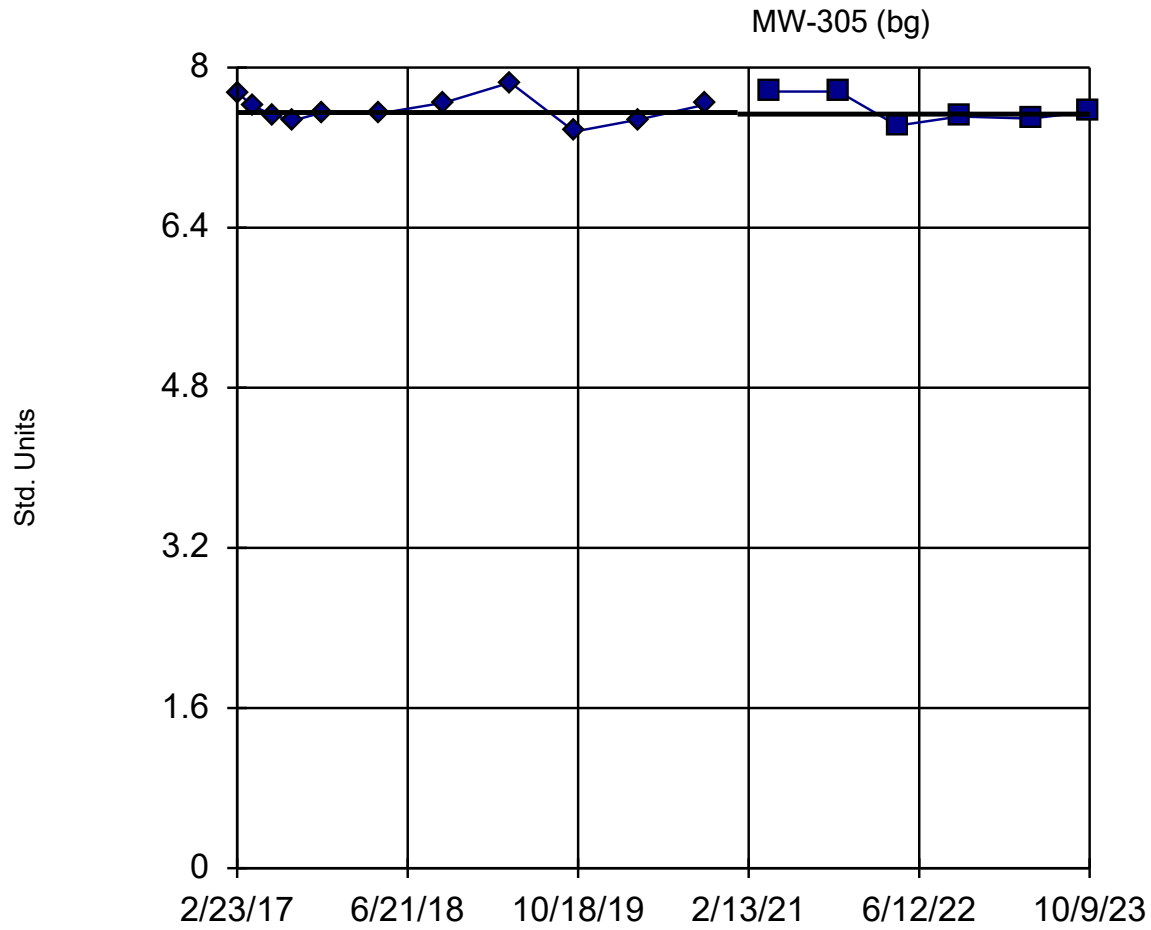
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Welch's t-test

Constituent: Field pH (Std. Units) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304	MW-304
4/26/2016	8.16	
6/21/2016	8	
8/9/2016	6.29 (X)	
10/19/2016	8.17	
12/19/2016	8.29	
1/23/2017	8.14	
2/23/2017	8.22	
4/7/2017	7.86	
6/6/2017	8.03	
8/1/2017	7.9	
10/23/2017	7.74	
4/3/2018	7.99	
10/4/2018	8.1	
4/8/2019	8.06	
10/8/2019	7.68	
4/7/2020	8.07	
10/15/2020	8.12	
4/13/2021		8.31
10/26/2021		8.12
4/11/2022		7.87
10/5/2022		8.05
4/24/2023		8.02
10/9/2023		8.08

Welch's t-test



background median = 7.55

compliance median = 7.535

t = -0.004218

Alpha	Table	Sig.
0.1	1.372	No
0.05	1.812	No
0.025	2.228	No
0.01	2.764	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9736, critical = 0.85.

Constituent: Field pH Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

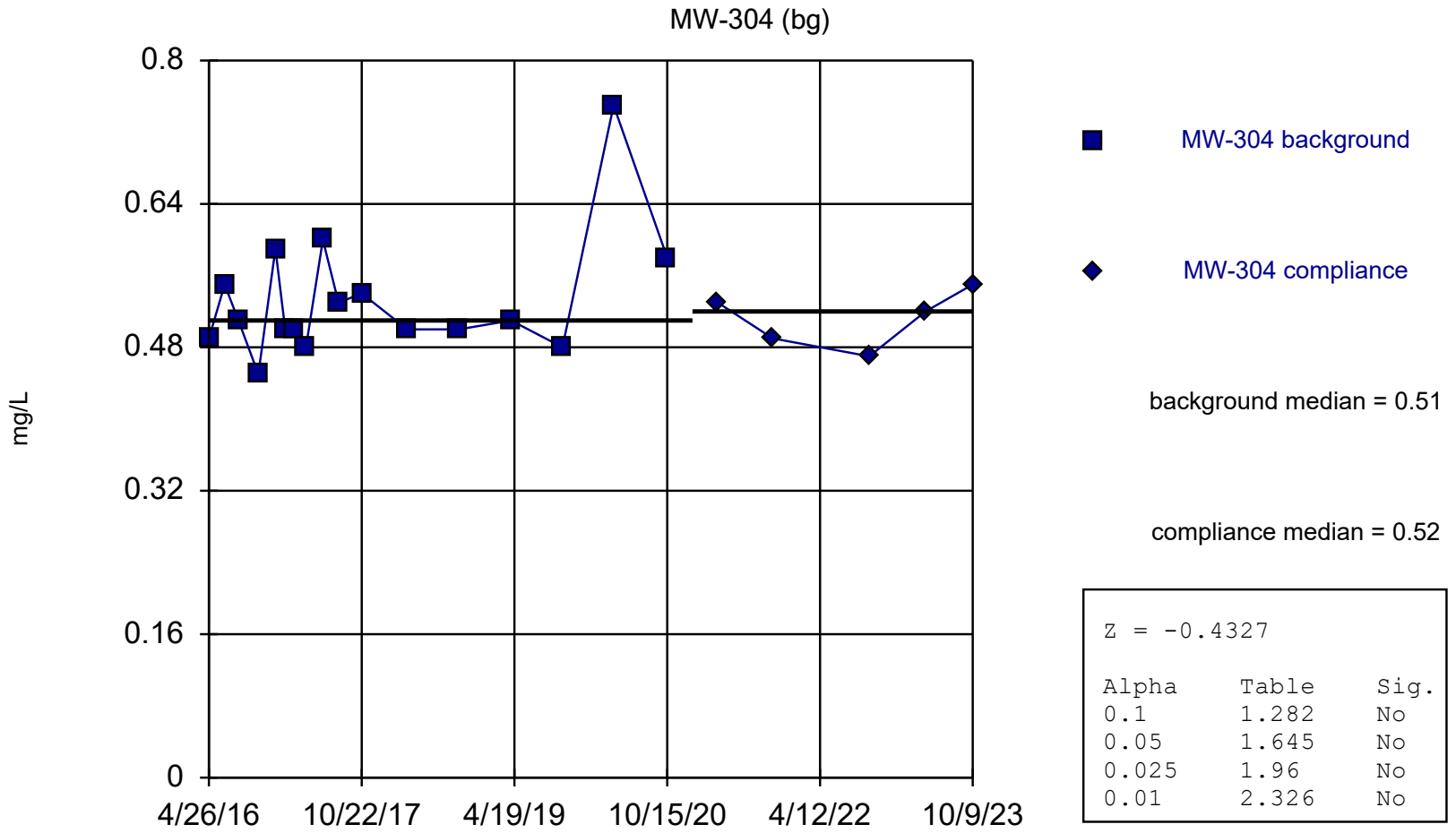
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Welch's t-test

Constituent: Field pH (Std. Units) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305	MW-305
2/23/2017	7.75	
4/7/2017	7.62	
6/6/2017	7.52	
8/1/2017	7.47	
10/23/2017	7.55	
4/3/2018	7.54	
10/4/2018	7.65	
4/9/2019	7.85	
10/8/2019	7.36	
4/7/2020	7.48	
10/15/2020	7.63	
4/13/2021		7.76
10/26/2021		7.76
4/11/2022		7.42
10/4/2022		7.51
4/25/2023		7.49
10/9/2023		7.56

Mann-Whitney (Wilcoxon Rank Sum)



Z = -0.4327

Alpha	Table	Sig.
0.1	1.282	No
0.05	1.645	No
0.025	1.96	No
0.01	2.326	No

Mann-Whitney (Wilcoxon Rank Sum) used in lieu of Welch's t-test because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level.

Constituent: Fluoride Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Mann-Whitney (Wilcoxon Rank Sum)

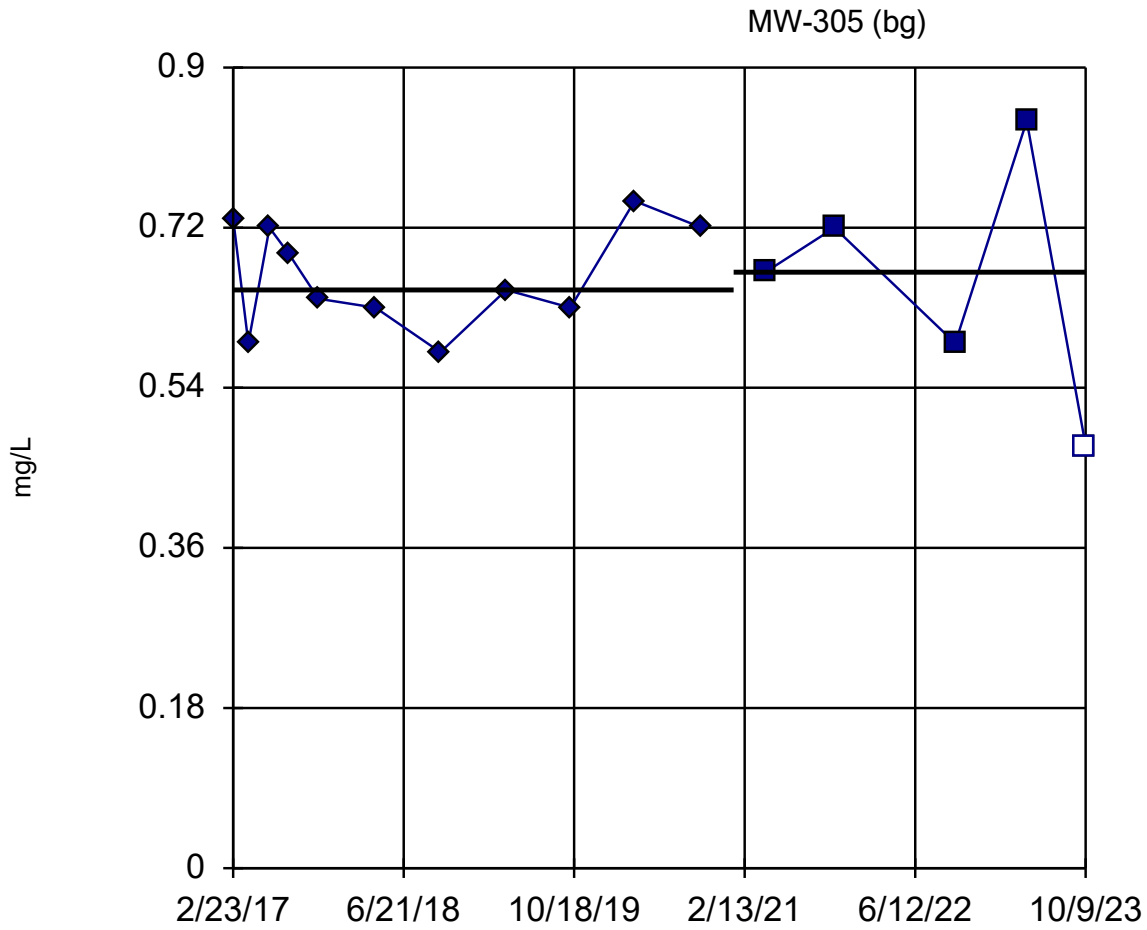
Constituent: Fluoride (mg/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304	MW-304
4/26/2016	0.49	
6/21/2016	0.55	
8/9/2016	0.51	
10/19/2016	0.45	
12/19/2016	0.59	
1/23/2017	0.5	
2/23/2017	0.5	
4/7/2017	0.48	
6/6/2017	0.6	
8/1/2017	0.53	
10/23/2017	0.54	
4/3/2018	0.5	
10/4/2018	0.5	
4/8/2019	0.51	
10/8/2019	0.48	
4/7/2020	0.75	
10/15/2020	0.58	
4/13/2021		0.53
10/26/2021		0.49
4/11/2022	<0.095 (XU)	
10/5/2022		0.47
4/24/2023		0.52
10/9/2023		0.55

Hollow symbols indicate censored values.

Welch's t-test



MW-305 background

MW-305 compliance

background median = 0.65

compliance median = 0.67

t = -0.1154

Alpha	Table	Sig.
0.1	1.476	No
0.05	2.015	No
0.025	2.571	No
0.01	3.365	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9281, critical = 0.85.

Constituent: Fluoride Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Welch's t-test

Constituent: Fluoride (mg/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring

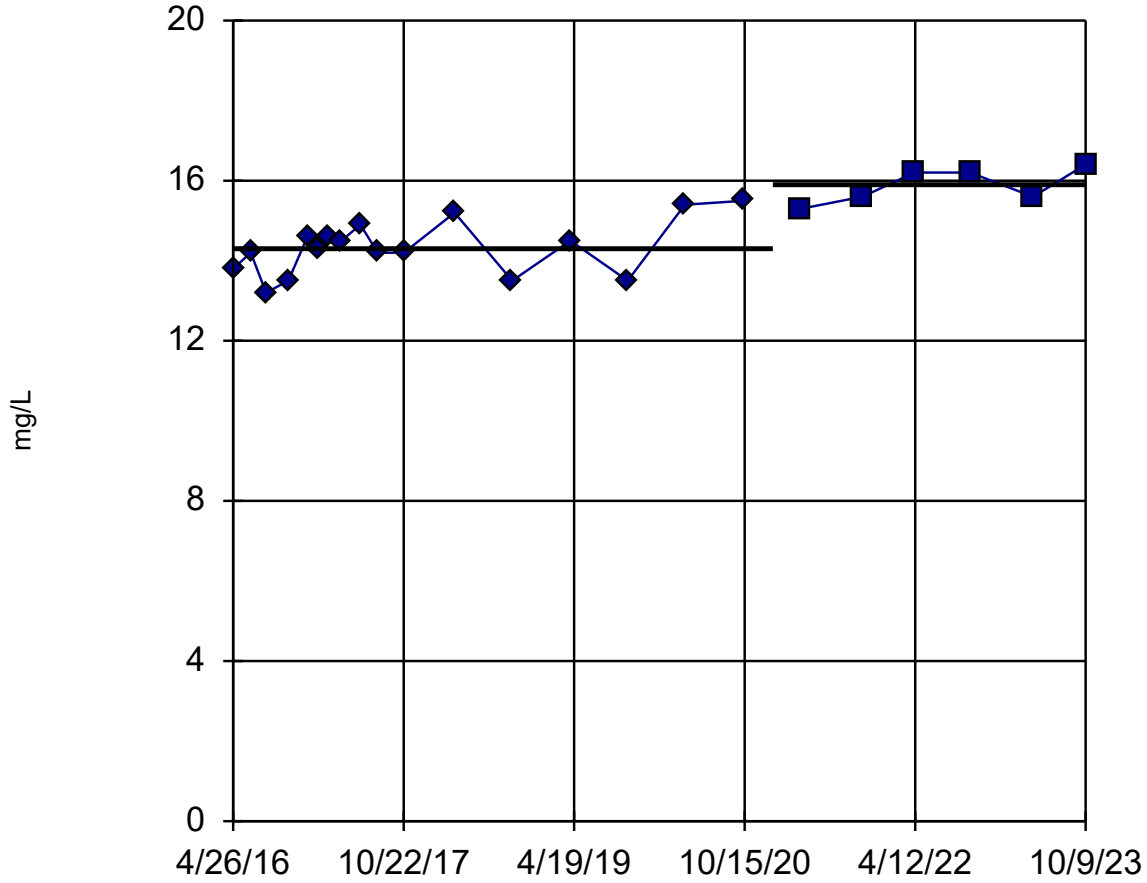
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305	MW-305
2/23/2017	0.73	
4/7/2017	0.59	
6/6/2017	0.72	
8/1/2017	0.69	
10/23/2017	0.64	
4/3/2018	0.63	
10/4/2018	0.58	
4/9/2019	0.65	
10/8/2019	0.63	
4/7/2020	0.75	
10/15/2020	0.72	
4/13/2021		0.67
10/26/2021		0.72 (J)
4/11/2022	<0.095 (XU)	
10/4/2022		0.59
4/25/2023		0.84 (J)
10/9/2023		<0.95 (U)

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

Welch's t-test

MW-304 (bg)



◆ MW-304 background

■ MW-304 compliance

background median = 14.3

compliance median = 15.9

t = 6.357

Alpha	Table	Sig.
0.1	1.345	Yes
0.05	1.761	Yes
0.025	2.145	Yes
0.01	2.624	Yes

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9561, critical = 0.892.

Constituent: Sulfate Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

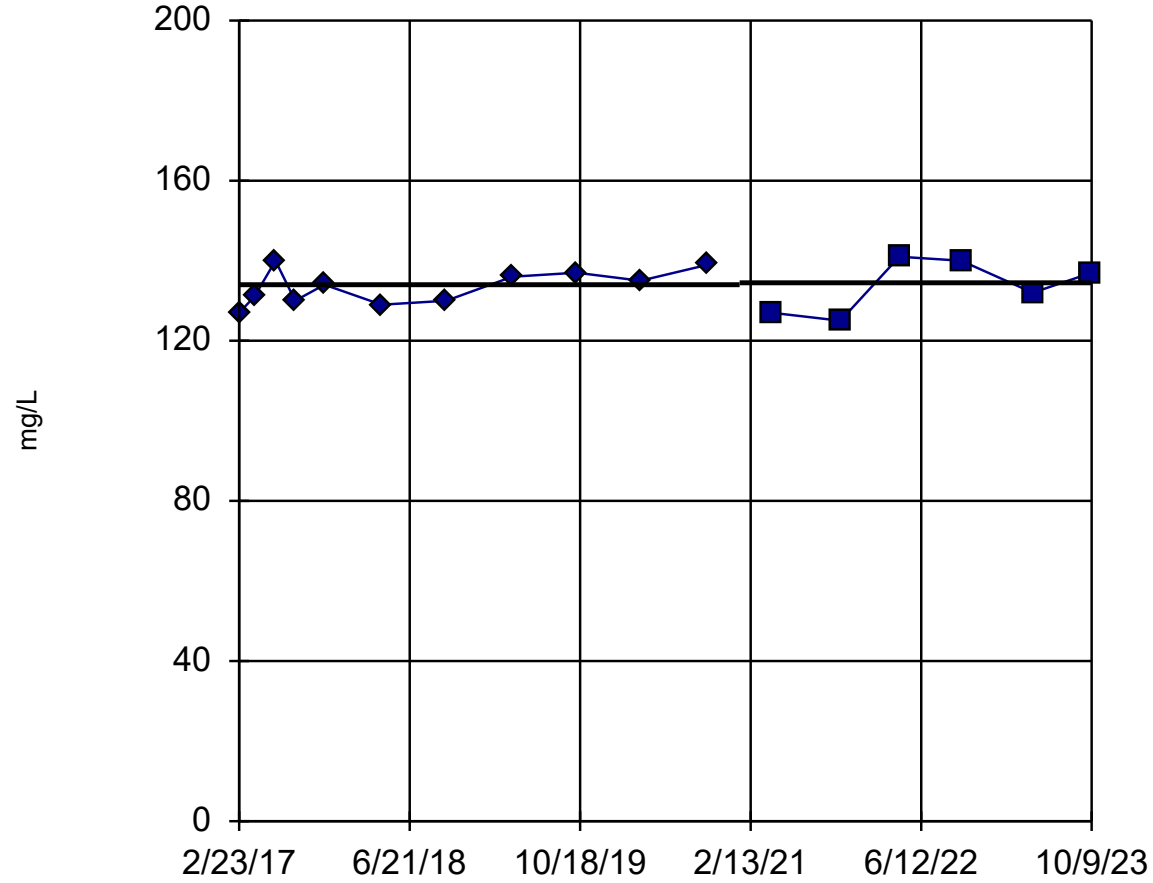
Welch's t-test

Constituent: Sulfate (mg/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304	MW-304
4/26/2016	13.8	
6/21/2016	14.2	
8/9/2016	13.2	
10/19/2016	13.5	
12/19/2016	14.6	
1/23/2017	14.3	
2/23/2017	14.6	
4/7/2017	14.5	
6/6/2017	14.9	
8/1/2017	14.2	
10/23/2017	14.2	
4/3/2018	15.2	
10/4/2018	13.5	
4/8/2019	14.5	
10/8/2019	13.5	
4/7/2020	15.4	
10/15/2020	15.5	
4/13/2021		15.3
10/26/2021		15.6
4/11/2022		16.2
10/5/2022		16.2
4/24/2023		15.6
10/9/2023		16.4

Welch's t-test

MW-305 (bg)



background median = 134

compliance median = 134.5

t = 0.06965

Alpha	Table	Sig.
0.1	1.415	No
0.05	1.895	No
0.025	2.365	No
0.01	2.998	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9493, critical = 0.85.

Constituent: Sulfate Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

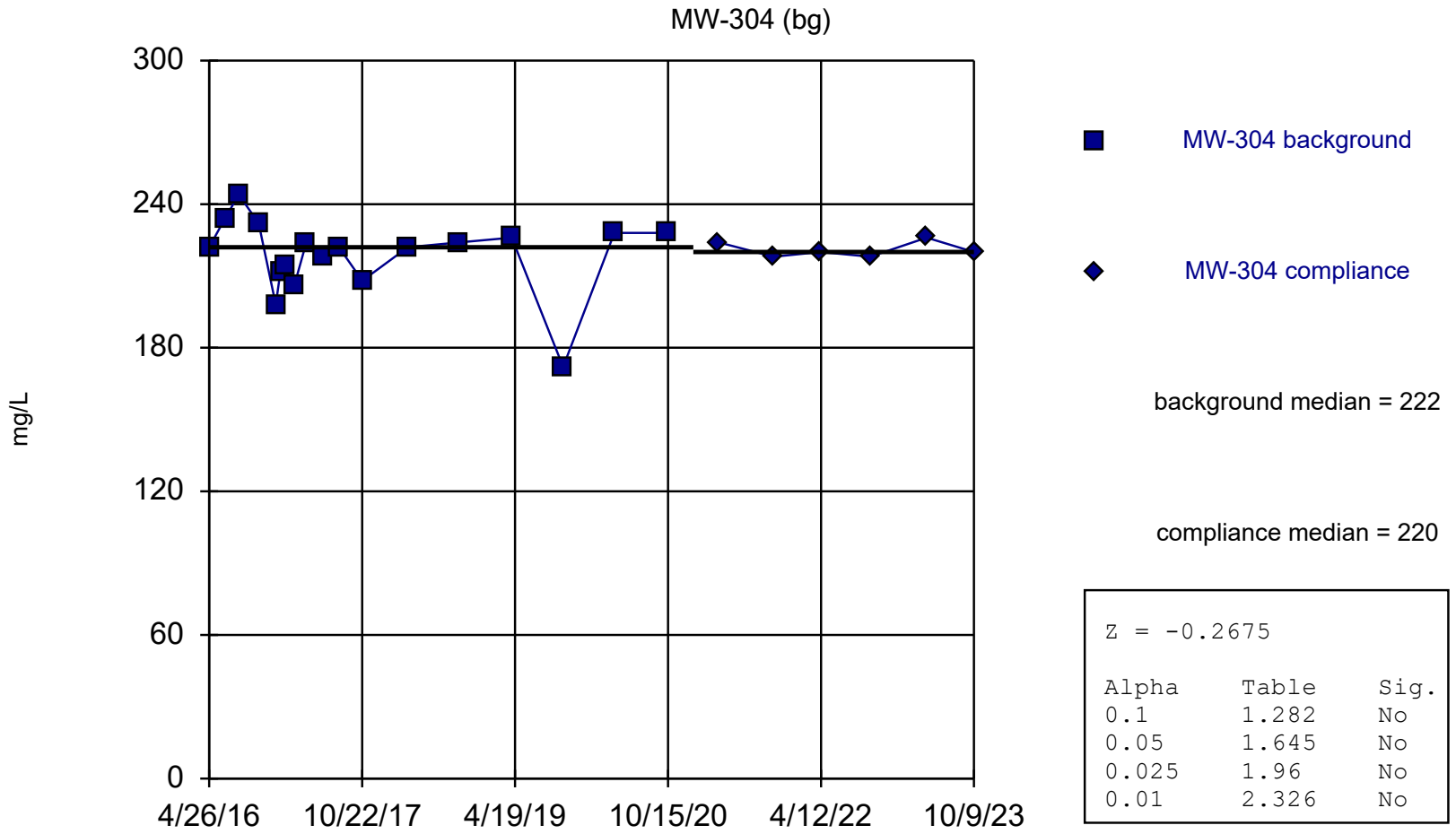
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Welch's t-test

Constituent: Sulfate (mg/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305	MW-305
2/23/2017	127	
4/7/2017	131	
6/6/2017	140	
8/1/2017	130	
10/23/2017	134	
4/3/2018	129	
10/4/2018	130	
4/9/2019	136	
10/8/2019	137	
4/7/2020	135	
10/15/2020	139	
4/13/2021		127
10/26/2021		125
4/11/2022		141
10/4/2022		140
4/25/2023		132
10/9/2023		137

Mann-Whitney (Wilcoxon Rank Sum)



Z = -0.2675

Alpha	Table	Sig.
0.1	1.282	No
0.05	1.645	No
0.025	1.96	No
0.01	2.326	No

Mann-Whitney (Wilcoxon Rank Sum) used in lieu of Welch's t-test because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level.

Constituent: Total Dissolved Solids Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Mann-Whitney (Wilcoxon Rank Sum)

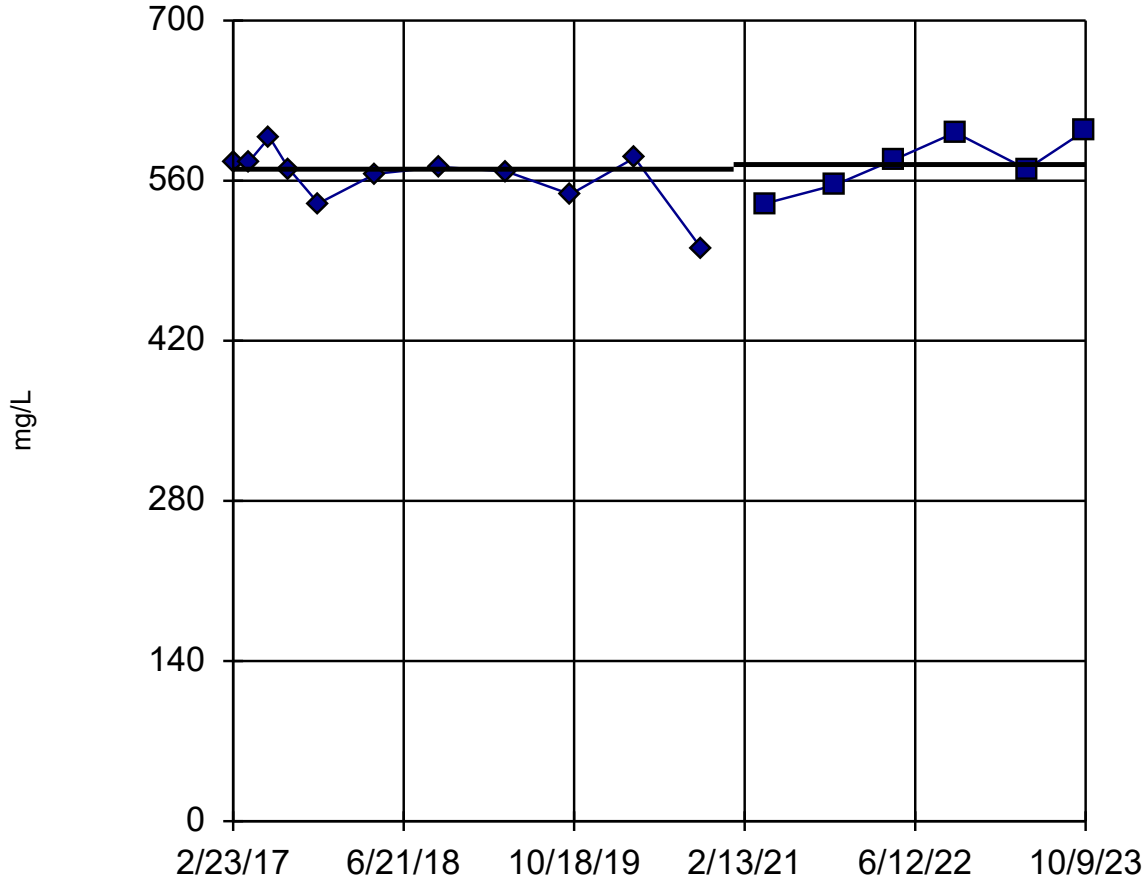
Constituent: Total Dissolved Solids (mg/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-304	MW-304
4/26/2016	222	
6/21/2016	234	
8/9/2016	244	
10/19/2016	232	
12/19/2016	198	
1/5/2017	212	
1/23/2017	214	
2/23/2017	206	
4/7/2017	224	
6/6/2017	218	
8/1/2017	222	
10/23/2017	208	
4/3/2018	222	
10/4/2018	224	
4/8/2019	226	
10/8/2019	172	
4/7/2020	228	
10/15/2020	228	
4/13/2021		224
10/26/2021		218
4/11/2022		220
10/5/2022		218
4/24/2023		226
10/9/2023		220

Welch's t-test

MW-305 (bg)



◆ MW-305 background

■ MW-305 compliance

background median = 570

compliance median = 574

t = 0.9199

Alpha	Table	Sig.
0.1	1.363	No
0.05	1.796	No
0.025	2.201	No
0.01	2.718	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8613, critical = 0.85.

Constituent: Total Dissolved Solids Analysis Run 5/24/2024 3:27 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Welch's t-test

Constituent: Total Dissolved Solids (mg/L) Analysis Run 5/24/2024 3:28 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-305	MW-305
2/23/2017	576	
4/7/2017	576	
6/6/2017	598	
8/1/2017	570	
10/23/2017	540	
4/3/2018	566	
10/4/2018	572	
4/9/2019	568	
10/8/2019	548	
4/7/2020	580	
10/15/2020	500	
4/13/2021		540
10/26/2021		556
4/11/2022		578
10/4/2022		602
4/25/2023		570
10/9/2023		604

Attachment 4B

Welch’s/Mann-Whitney Comparison - Intrawell

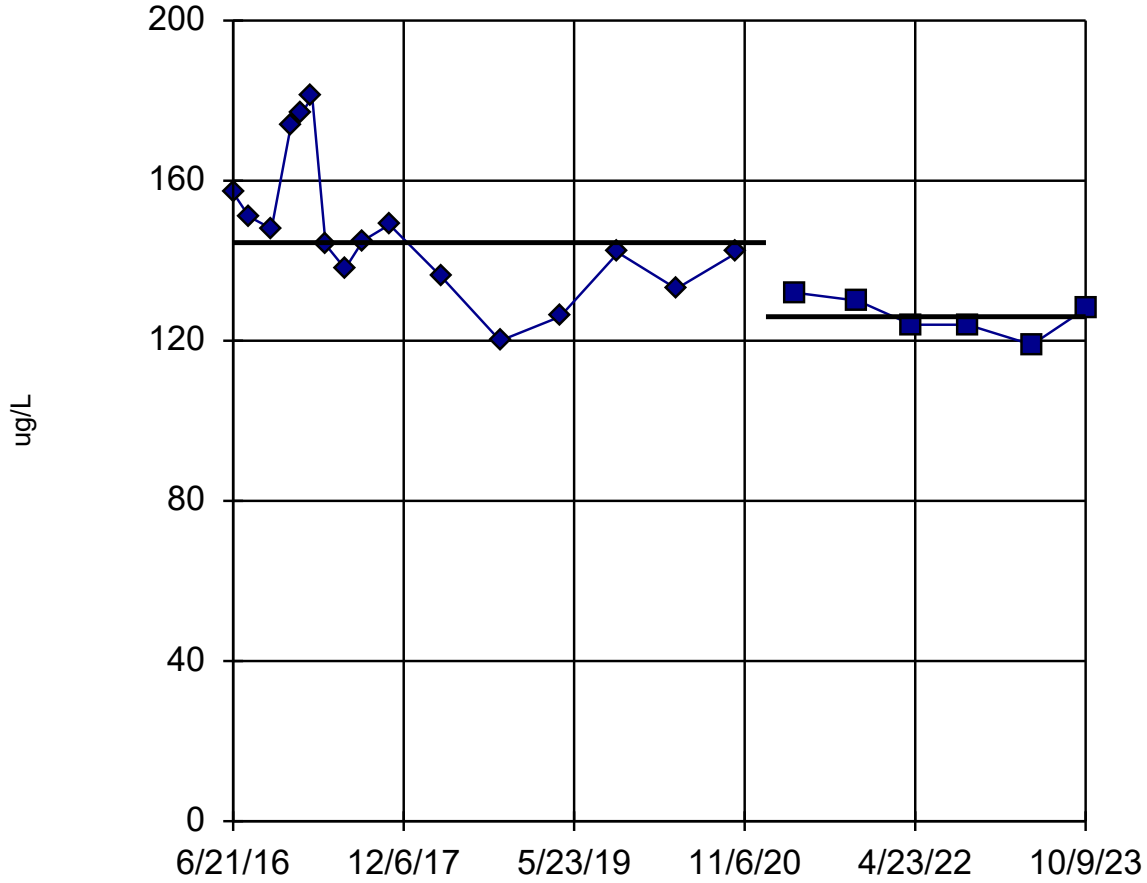
Welch's t-test/Mann-Whitney

I-43 Ash Disposal Facility Data: I43_2020_Oct_All Printed 3/8/2024, 2:27 PM

Constituent	Well	Calc.	0.1	0.05	0.025	0.01	Alpha	Sig.	Bg. Wells	Method
Boron (ug/L)	MW-301	-4.524	No	No	No	No	0.01	No	(intrawell)	Welch`s
Boron (ug/L)	MW-302	-2.356	No	No	No	No	0.01	No	(intrawell)	Welch`s
Boron (ug/L)	MW-303	-3.977	No	No	No	No	0.01	No	(intrawell)	Welch`s

Boron

MW-301



MW-301 background

MW-301 compliance

background median = 144.5

compliance median = 126

t = -4.524

Alpha	Table	Sig.
0.1	1.328	No
0.05	1.729	No
0.025	2.093	No
0.01	2.539	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9325, critical = 0.887.

Welch's t-test Analysis Run 3/8/2024 2:26 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

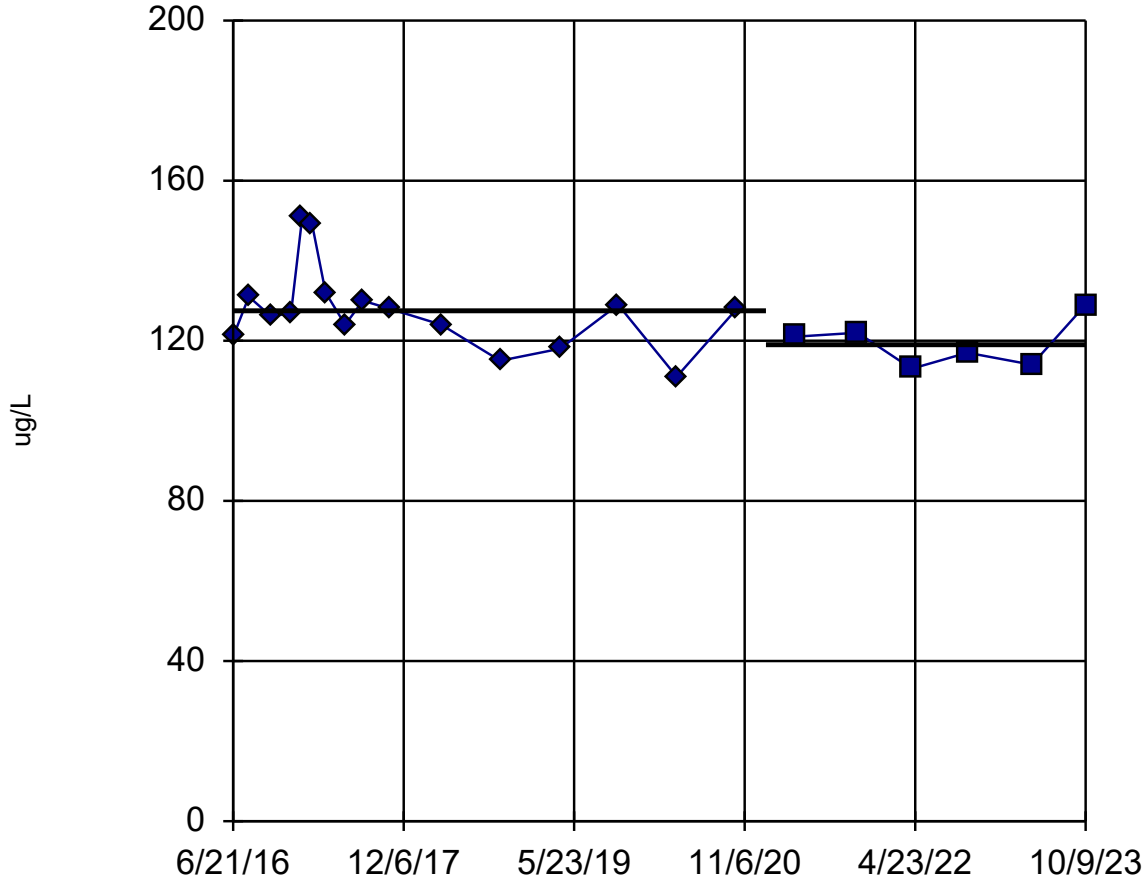
Welch's t-test

Constituent: Boron (ug/L) Analysis Run 3/8/2024 2:27 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-301	MW-301
4/26/2016	298 (X)	
6/21/2016	157	
8/10/2016	151	
10/19/2016	148	
12/19/2016	174	
1/23/2017	177	
2/23/2017	181	
4/6/2017	144	
6/6/2017	138	
8/1/2017	145	
10/23/2017	149	
4/3/2018	136	
10/4/2018	120	
4/9/2019	126	
10/8/2019	142	
4/7/2020	133	
10/13/2020	142	
4/13/2021		132
10/26/2021		130
4/13/2022		124
10/4/2022		124
4/24/2023		119
10/9/2023		128

Boron

MW-302



background median = 127.5

compliance median = 119

t = -2.356

Alpha	Table	Sig.
0.1	1.337	No
0.05	1.746	No
0.025	2.12	No
0.01	2.583	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8969, critical = 0.887.

Welch's t-test Analysis Run 3/8/2024 2:26 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

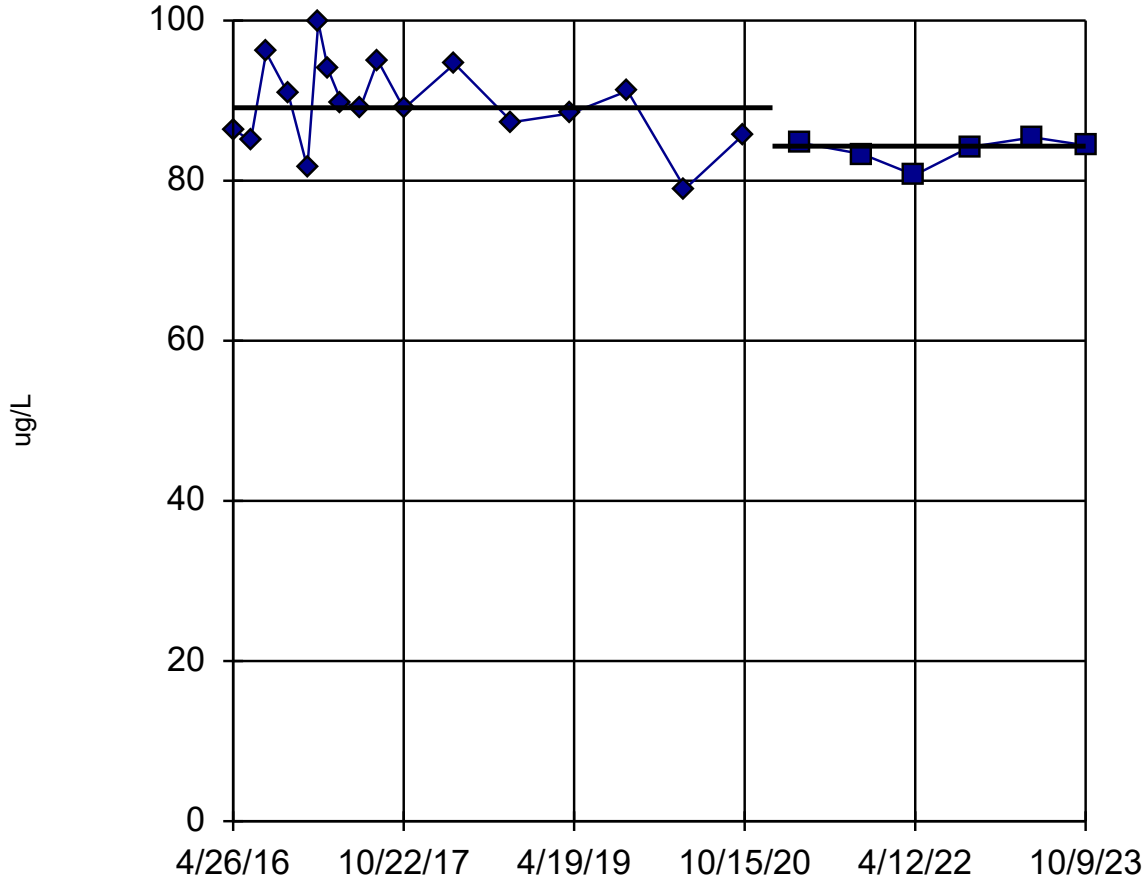
Welch's t-test

Constituent: Boron (ug/L) Analysis Run 3/8/2024 2:27 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-302	MW-302
4/26/2016	198 (X)	
6/21/2016	121	
8/9/2016	131	
10/19/2016	126	
12/19/2016	127	
1/23/2017	151	
2/23/2017	149	
4/6/2017	132	
6/6/2017	124	
8/1/2017	130	
10/23/2017	128	
4/3/2018	124	
10/4/2018	115	
4/9/2019	118	
10/8/2019	129	
4/8/2020	111	
10/13/2020	128	
4/13/2021		121
10/26/2021		122
4/13/2022		113
10/4/2022		117
4/24/2023		114
10/9/2023		129

Boron

MW-303



◆ MW-303 background

■ MW-303 compliance

background median = 89.1

compliance median = 84.3

t = -3.977

Alpha	Table	Sig.
0.1	1.323	No
0.05	1.721	No
0.025	2.08	No
0.01	2.518	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.988, critical = 0.892.

Welch's t-test Analysis Run 3/8/2024 2:26 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

Welch's t-test

Constituent: Boron (ug/L) Analysis Run 3/8/2024 2:27 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Data: I43_2020_Oct_All

	MW-303	MW-303
4/26/2016	86.4	
6/21/2016	85	
8/9/2016	96	
10/19/2016	90.8	
12/19/2016	81.6	
1/23/2017	99.8	
2/23/2017	93.9	
4/7/2017	89.8	
6/6/2017	89.1	
8/1/2017	95	
10/23/2017	89	
4/3/2018	94.6	
10/4/2018	87.3	
4/9/2019	88.4	
10/7/2019	91.2	
4/8/2020	79	
10/13/2020	85.8	
4/13/2021		84.7
10/26/2021		83.3
4/11/2022		80.7
10/5/2022		84.2
4/24/2023		85.4
10/9/2023		84.4

Attachment 5

Interwell Prediction Limit Analysis

Prediction Limit

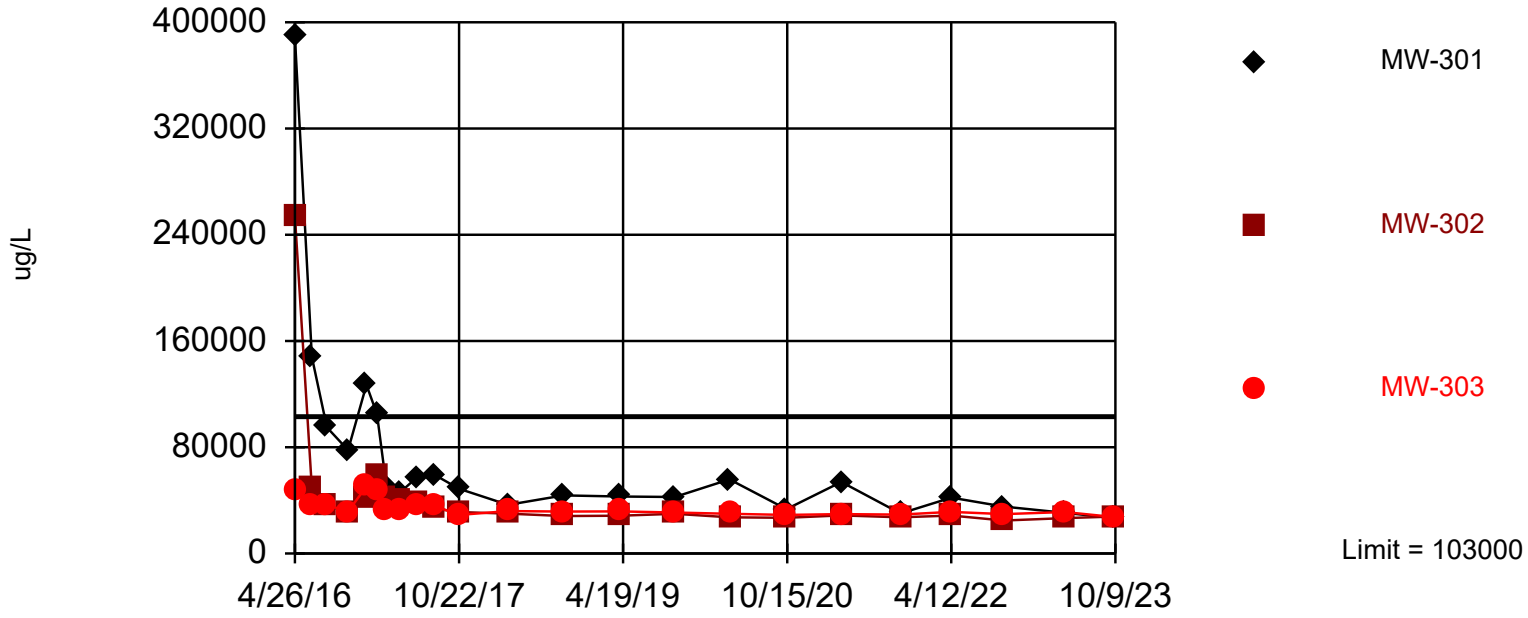
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 5/24/2024, 3:46 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Calcium (ug/L)	MW-301	103000	n/a	10/9/2023	26600	No	40	0	n/a	0.001146	NP Inter (normality) ...
Calcium (ug/L)	MW-302	103000	n/a	10/9/2023	27900	No	40	0	n/a	0.001146	NP Inter (normality) ...
Calcium (ug/L)	MW-303	103000	n/a	10/9/2023	27400	No	40	0	n/a	0.001146	NP Inter (normality) ...
Field pH (Std. Units)	MW-301	8.32	n/a	10/9/2023	8.07	No	39	0	No	0.002505	Param Inter 1 of 2
Field pH (Std. Units)	MW-302	8.32	n/a	11/14/2023	8	No	39	0	No	0.002505	Param Inter 1 of 2
Field pH (Std. Units)	MW-303	8.32	n/a	10/9/2023	7.96	No	39	0	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-301	0.76	n/a	10/9/2023	0.67	No	38	2.632	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	**MW-302**	**0.76**	**n/a**	**11/14/2023**	**0.77**	**Yes**	**38**	**2.632**	**No**	**0.002505**	**Param Inter 1 of 2**
Fluoride (mg/L)	MW-303	0.76	n/a	10/9/2023	0.76J	No	38	2.632	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-301	604	n/a	10/9/2023	200	No	41	0	n/a	0.001106	NP Inter (normality) ...
Total Dissolved Solids (mg/L)	MW-302	604	n/a	10/9/2023	222	No	41	0	n/a	0.001106	NP Inter (normality) ...
Total Dissolved Solids (mg/L)	MW-303	604	n/a	10/9/2023	266	No	41	0	n/a	0.001106	NP Inter (normality) ...

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 40 background values. Annual per-constituent alpha = 0.006854. Individual comparison alpha = 0.001146 (1 of 2). Comparing 3 points to limit.

Constituent: Calcium Analysis Run 5/24/2024 3:45 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Prediction Limit

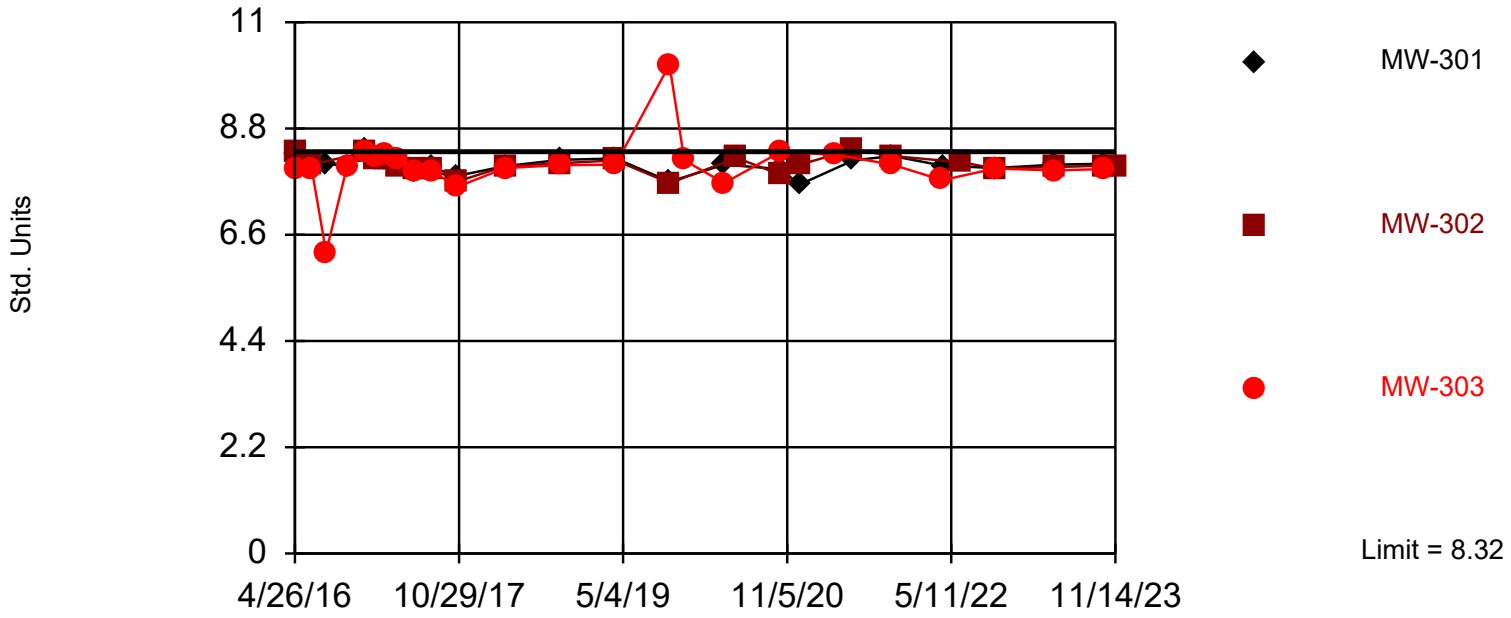
Constituent: Calcium (ug/L) Analysis Run 5/24/2024 3:46 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301	MW-302	MW-304 (bg)	MW-303	MW-305 (bg)
4/26/2016	389000	254000	24500	48300	
6/21/2016	148000	49000	25400	36900	
8/9/2016		36500	26700	36700	
8/10/2016	94900				
10/19/2016	77800	30900	23000	31600	
12/19/2016	127000	42600	24800	50500	
1/23/2017	105000	59300	24300	46700	
2/23/2017	51400	41900	24500	32600	93800
4/6/2017	45200	40800			
4/7/2017			24800	33200	103000
6/6/2017	57600	38700	23500	35500	102000
8/1/2017	59400	33900	23000	35900	95900
10/23/2017	48700	31200	20100	29100	90700
4/3/2018	36700	30000	20200	31900	83000
10/4/2018	43700	28200	19400	31600	82200
4/8/2019			19100		
4/9/2019	42900	28400		31700	89000
10/7/2019				30900	
10/8/2019	42600	29900	20600		90300
4/7/2020	55800		18600		88800
4/8/2020		27200		29900	
10/13/2020	33400	26900		29000	
10/15/2020			15800		76800
4/13/2021	53900	28700	19700	29600	86800
10/26/2021	30200	27200	21600	29300	87800
4/11/2022			25500	31300	88500
4/13/2022	42100	28600			
10/4/2022	35300	24800			83700
10/5/2022			19400	29600	
4/24/2023	30600	26600	22000	31200	
4/25/2023					80500
10/9/2023	26600	27900	20700	27400	85800

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=7.844, Std. Dev.=0.2745, n=39. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.934, critical = 0.917. Kappa = 1.754 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Field pH Analysis Run 5/24/2024 3:45 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Prediction Limit

Constituent: Field pH (Std. Units) Analysis Run 5/24/2024 3:46 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

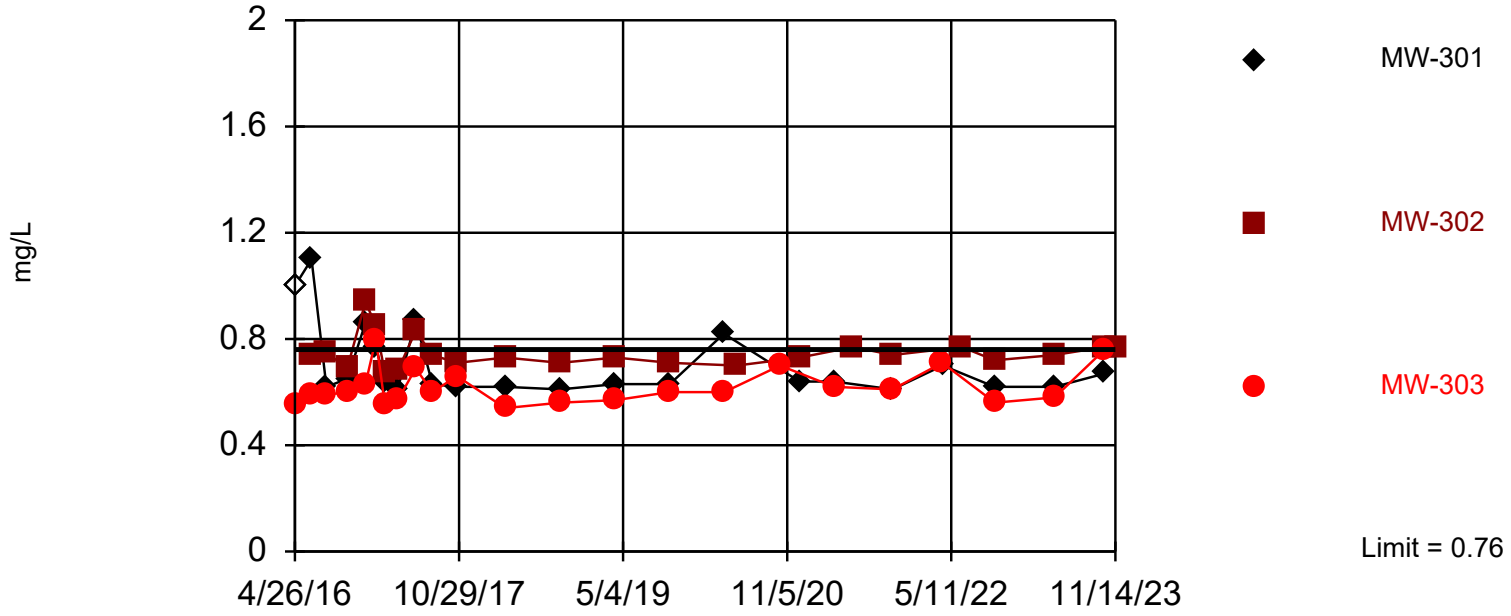
	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	8.24	8.33	7.96	8.16	
6/21/2016	8.01	8.05	7.98	8	
8/9/2016		6.24 (X)	6.24 (O)	6.29 (X)	
8/10/2016	8.08				
10/19/2016	8	12.2 (X)	8.03	8.17	
12/19/2016	8.36	8.31	8.32	8.29	
1/23/2017	8.21	8.16	8.23	8.14	
2/23/2017	8.14	8.16	8.24	8.22	7.75
4/6/2017	8.12	8			
4/7/2017			8.15	7.86	7.62
6/6/2017	7.89	7.95	7.9	8.03	7.52
8/1/2017	7.99	7.98	7.91	7.9	7.47
10/23/2017	7.82	7.7	7.59	7.74	7.55
4/3/2018	8.02	8.02	7.98	7.99	7.54
10/4/2018	8.15	8.08	8.04	8.1	7.65
4/8/2019				8.06	
4/9/2019	8.18	8.14	8.05		7.85
10/7/2019			10.12		
10/8/2019	7.7	7.67		7.68	7.36
11/26/2019			8.14		
4/7/2020	8.05			8.07	7.48
4/8/2020			7.67		
5/20/2020		8.19 (R)			
10/13/2020	7.96	7.85	8.31		
10/15/2020				8.12	7.63
12/18/2020	7.64	8.05			
4/13/2021			8.26	8.31	7.76
6/16/2021	8.14 (R)	8.37 (R)			
10/26/2021	8.23	8.23	8.05	8.12	7.76
4/11/2022			7.73	7.87	7.42
4/13/2022	8.03				
6/16/2022		8.1 (R)			
10/4/2022	7.98	7.97			7.51
10/5/2022			7.97	8.05	
4/24/2023	8.05	8	7.93	8.02	
4/25/2023					7.49
10/9/2023	8.07	8.03	7.96	8.08	7.56
11/14/2023		8			

Hollow symbols indicate censored values.

Exceeds Limit: MW-302

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.5854, Std. Dev.=0.09913, n=38, 2.632% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9168, critical = 0.916. Kappa = 1.758 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Fluoride Analysis Run 5/24/2024 3:45 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 5/24/2024 3:46 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

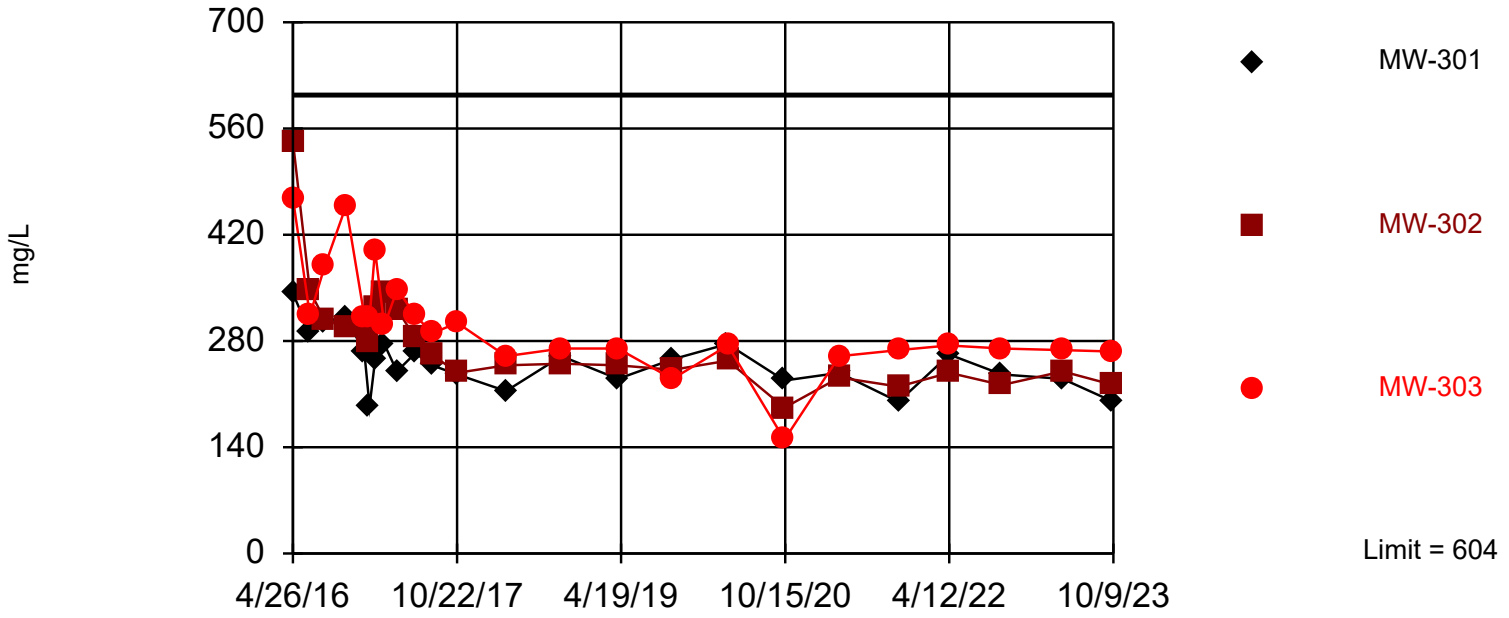
	MW-301	MW-304 (bg)	MW-303	MW-302	MW-305 (bg)
4/26/2016	<2 (U)	0.49	0.55	1.1 (J,X)	
6/21/2016	1.1 (J)	0.55	0.59	0.74	
8/9/2016		0.51	0.59	0.75	
8/10/2016	0.62				
10/19/2016	0.65 (J)	0.45	0.6	0.69	
12/19/2016	0.86 (J)	0.59	0.63	0.94 (J)	
1/23/2017	0.77 (J)	0.5	0.8 (J)	0.85 (J)	
2/23/2017	0.64	0.5	0.55	0.67	0.73
4/6/2017	0.61			0.68	
4/7/2017		0.48	0.57		0.59
6/6/2017	0.87 (J)	0.6	0.69	0.83	0.72
8/1/2017	0.63	0.53	0.6	0.74	0.69
10/23/2017	0.62	0.54	0.66	0.71	0.64
4/3/2018	0.62	0.5	0.54	0.73	0.63
10/4/2018	0.61	0.5	0.56	0.71	0.58
4/8/2019		0.51			
4/9/2019	0.63		0.57	0.73	0.65
10/7/2019			0.6		
10/8/2019	0.63	0.48		0.71	0.63
4/7/2020	0.82 (J)	0.75			0.75
4/8/2020			0.6		
5/20/2020				0.7 (R)	
10/13/2020			0.7		
10/15/2020		0.58			0.72
12/18/2020	0.64 (R)			0.73 (R)	
4/13/2021	0.64	0.53	0.62		0.67
6/16/2021				0.77 (R)	
10/26/2021	0.61	0.49	0.61	0.74	0.72 (J)
4/11/2022		<0.095 (XU)	0.71		<0.095 (XU)
4/13/2022	0.7				
6/16/2022				0.77 (R)	
10/4/2022	0.62			0.72	0.59
10/5/2022		0.47	0.56		
4/24/2023	0.62	0.52	0.58	0.74	
4/25/2023					0.84 (J)
10/9/2023	0.67	0.55	0.76 (J)	0.77	<0.95 (U)
11/14/2023				0.77	

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

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 41 background values. Annual per-constituent alpha = 0.006616. Individual comparison alpha = 0.001106 (1 of 2). Comparing 3 points to limit.

Constituent: Total Dissolved Solids Analysis Run 5/24/2024 3:45 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 5/24/2024 3:46 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301	MW-302	MW-304 (bg)	MW-303	MW-305 (bg)
4/26/2016	343	543	222	468	
6/21/2016	290	346	234	314	
8/9/2016		308	244	378	
8/10/2016	306				
10/19/2016	312	298	232	458	
12/19/2016	264	302	198	312	
1/5/2017	194	280	212	310	
1/23/2017	254	324	214	400	
2/23/2017	276	344	206	300	576
4/6/2017	240	322			
4/7/2017			224	348	576
6/6/2017	264	284	218	314	598
8/1/2017	248	262	222	290	570
10/23/2017	236	238	208	304	540
4/3/2018	214	248	222	260	566
10/4/2018	260	250	224	270	572
4/8/2019			226		
4/9/2019	230	248		270	568
10/7/2019				230	
10/8/2019	256	242	172		548
4/7/2020	276		228		580
4/8/2020		254		274	
10/13/2020	228	192		150	
10/15/2020			228		500
4/13/2021	238	232	224	260	540
10/26/2021	200	220	218	268	556
4/11/2022			220	274	578
4/13/2022	262	238			
10/4/2022	236	222			602
10/5/2022			218	270	
4/24/2023	230	240	226	268	
4/25/2023					570
10/9/2023	200	222	220	266	604

Attachment 6

Intrawell Prediction Limit Analysis

Prediction Limit

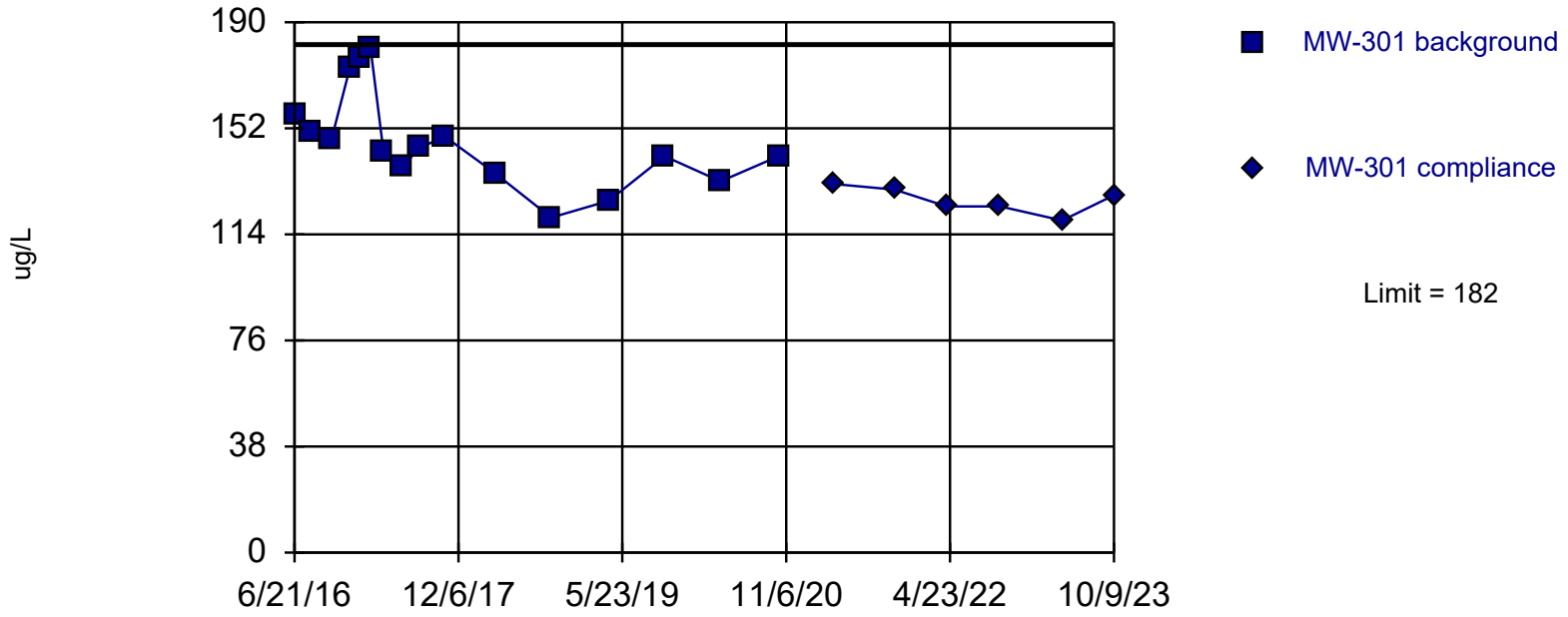
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 5/24/2024, 3:48 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (ug/L)	MW-301	182	n/a	10/9/2023	128	No	16	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-302	148	n/a	10/9/2023	129	No	16	0	No	0.002505	Param Intra 1 of 2
Boron (ug/L)	MW-303	99.9	n/a	10/9/2023	84.4	No	17	0	No	0.002505	Param Intra 1 of 2

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=147.7, Std. Dev.=17.38, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9325, critical = 0.844. Kappa = 1.97 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Constituent: Boron Analysis Run 5/24/2024 3:47 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Prediction Limit

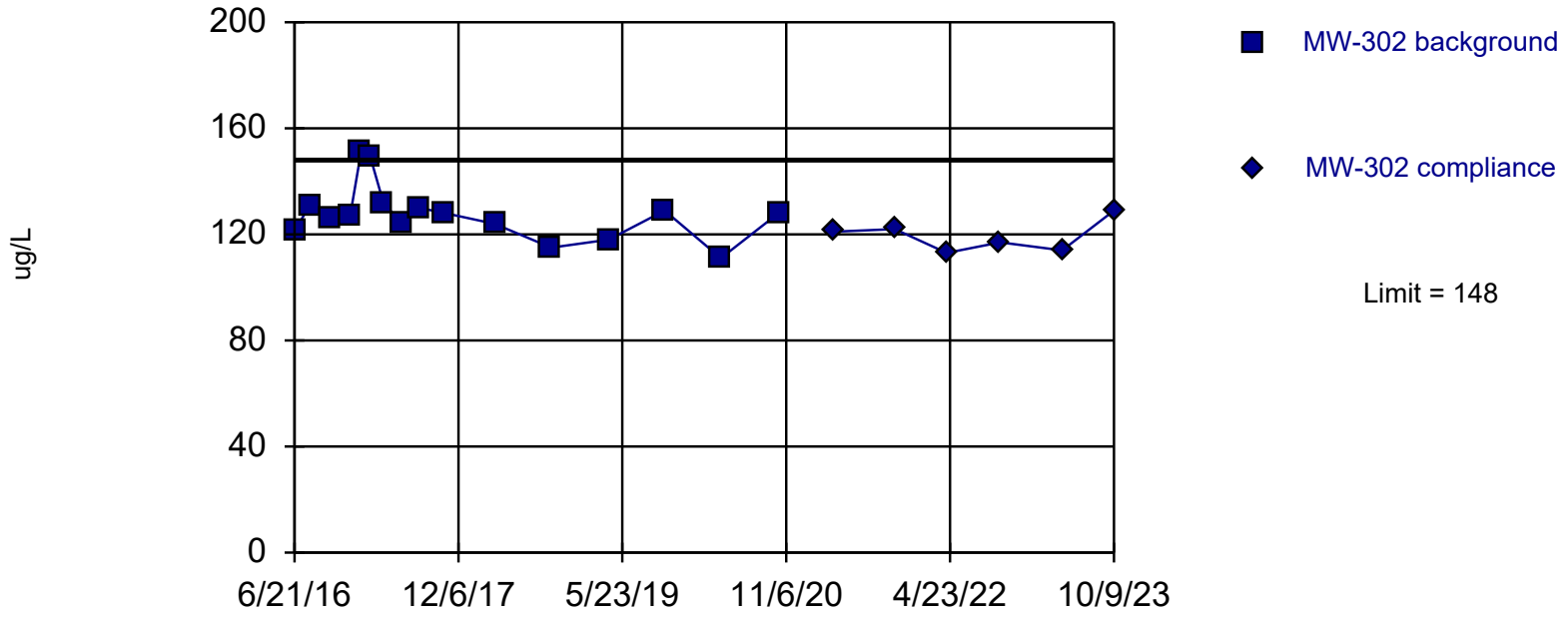
Constituent: Boron (ug/L) Analysis Run 5/24/2024 3:48 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301	MW-301
4/26/2016	298 (X)	
6/21/2016	157	
8/10/2016	151	
10/19/2016	148	
12/19/2016	174	
1/23/2017	177	
2/23/2017	181	
4/6/2017	144	
6/6/2017	138	
8/1/2017	145	
10/23/2017	149	
4/3/2018	136	
10/4/2018	120	
4/9/2019	126	
10/8/2019	142	
4/7/2020	133	
10/13/2020	142	
4/13/2021		132
10/26/2021		130
4/13/2022		124
10/4/2022		124
4/24/2023		119
10/9/2023		128

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=127.8, Std. Dev.=10.47, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8969, critical = 0.844. Kappa = 1.97 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Constituent: Boron Analysis Run 5/24/2024 3:48 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Prediction Limit

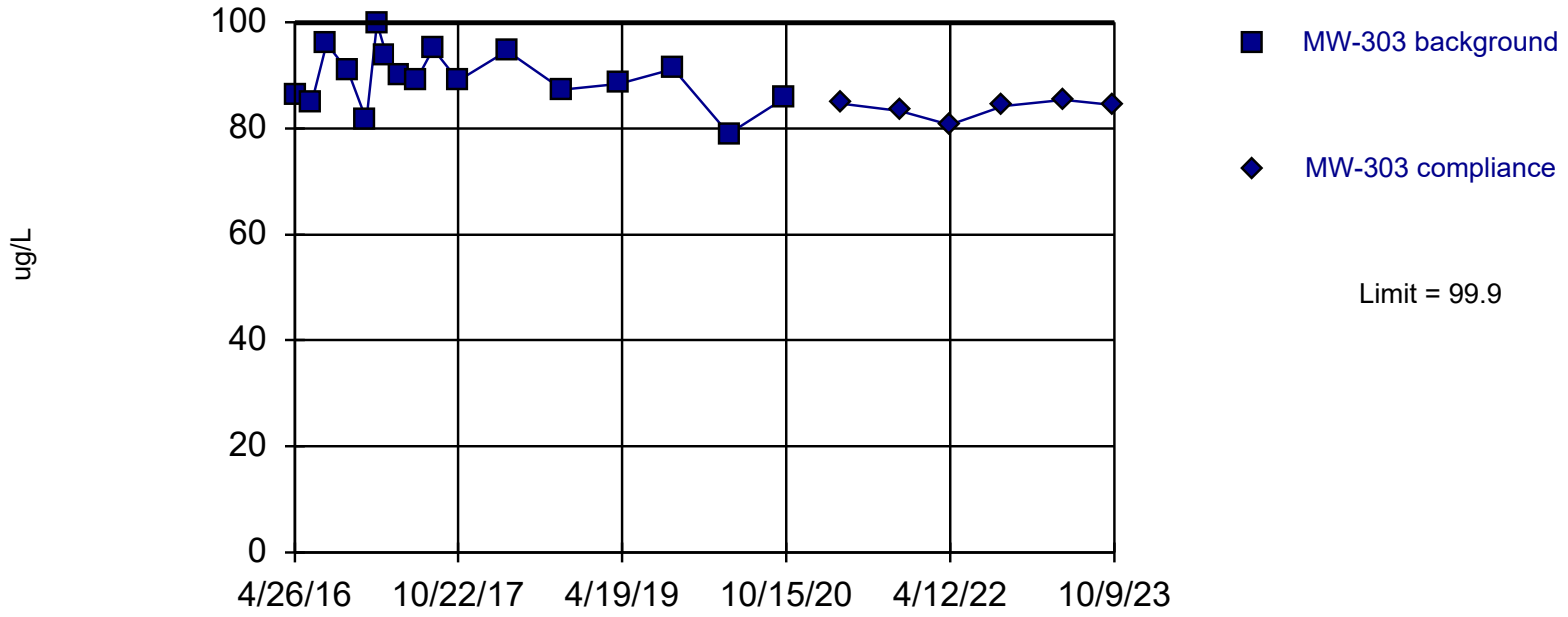
Constituent: Boron (ug/L) Analysis Run 5/24/2024 3:48 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-302	MW-302
4/26/2016	198 (X)	
6/21/2016	121	
8/9/2016	131	
10/19/2016	126	
12/19/2016	127	
1/23/2017	151	
2/23/2017	149	
4/6/2017	132	
6/6/2017	124	
8/1/2017	130	
10/23/2017	128	
4/3/2018	124	
10/4/2018	115	
4/9/2019	118	
10/8/2019	129	
4/8/2020	111	
10/13/2020	128	
4/13/2021		121
10/26/2021		122
4/13/2022		113
10/4/2022		117
4/24/2023		114
10/9/2023		129

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=89.57, Std. Dev.=5.31, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.988, critical = 0.851. Kappa = 1.951 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Constituent: Boron Analysis Run 5/24/2024 3:48 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Prediction Limit

Constituent: Boron (ug/L) Analysis Run 5/24/2024 3:48 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-303	MW-303
4/26/2016	86.4	
6/21/2016	85	
8/9/2016	96	
10/19/2016	90.8	
12/19/2016	81.6	
1/23/2017	99.8	
2/23/2017	93.9	
4/7/2017	89.8	
6/6/2017	89.1	
8/1/2017	95	
10/23/2017	89	
4/3/2018	94.6	
10/4/2018	87.3	
4/9/2019	88.4	
10/7/2019	91.2	
4/8/2020	79	
10/13/2020	85.8	
4/13/2021		84.7
10/26/2021		83.3
4/11/2022		80.7
10/5/2022		84.2
4/24/2023		85.4
10/9/2023		84.4

Leachate Pipe Cleaning and Inspection Report

BUTEYN-PETERSON Construction Co., Inc.

N7337 Dairyland Drive - Sheboygan, WI 53083 - PHONE (920) 565-6200 - FAX (920) 565-6203

December 4, 2024

Buteyn-Peterson Construction Inc. certifies that the leachate lines 1, 2, and 3 from Phase 3 Module 2 at the Alliant Energy I-43 Ash Disposal Facility in Sheboygan are clean and free from obstructions for 2024.

- Aqualis formerly Northern Pipe, Inc. flushed the lines on 10/17/24.

Mark Brashaw
Project Manager
Buteyn-Peterson Construction Co., Inc.
(920) 565-6200 office
(920) 565-6203 fax
(920) 377-0673 cell
mark.brashaw@jpsbp.com

LEACHATE JETTING COMPLETION REPORT

PREPARED FOR:

Buteyn Peterson Construction

Leachate Line Cleaning

Ash Disposal Site - Sheboygan, WI

AQUALIS®
Formerly Northern Pipe, Inc.

aqualisco.com | 920.754.3216

AQUALIS
Formerly Northern Pipe, Inc.
2094 COUNTY ROAD QQ
GREEN BAY, WISCONSIN 54311
920.754.3216

Alliant Energy - Ash Disposal Site
Phase 3 Module 2 Leachate Jetting
W/O 2466

Freightliner | 6 hole 3/4'' standard bullet tip | 3/4'' Piranha HP12 80 GPM 2500 PSI

Line	Cleanout	Total Length	Jetted Length	Date	Comments
1	1 3	715.0	715.0 -	10.17.2024	Line is in good condition.
2	2 4	900.0	900.0 -	10.17.2024	Line is in good condition.
3	A B	500.0	500.0 -	10.17.2024	Line is in good condition.
		2,115.0	**2,115.0**		

Line 1 - 10/17/2024 Length @ 715 feet

Line 2 - 10/17/2024 Length @ 900 feet

Line 3 - 10/17/2024 Length @ 500 feet

LEACHATE LINE JETTING
ALLIANT ENERGY - ASH DISPOSAL SITE