2020 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

25220069.00 | January 29, 2021

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OVERVIEW OF CURRENT STATUS

Edgewater Generating Station, I-43 Ash Disposal Facility
2020 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 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 a statistically significant increase 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	April/May 2020 None October/December 2020 None
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	Assessment monitoring not required.

Category	Rule Requirement	Site Status
Statistically Significant Levels (SSL) Above Groundwater Protection Standard	(iv) If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g) include all of the following:	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

Overview of Current Status i
1.0 Introduction 1
2.0 Background 1
2.1 Geologic and Hydrogeologic Setting 1
2.1.1 Regional Information 1
2.1.2 Site Information 2
2.2 CCR Rule Monitoring System 2
3.0 §257.90(e) Annual Report Requirements 2
3.1 §257.90(e)(1) Site Map 3
3.2 §257.90(e)(2) Monitoring System Changes 3
3.3 §257.90(e)(3) Summary of Sampling Events 3
3.4 §257.90(e)(4) Monitoring Transition Narrative 3
3.5 §257.90(e)(5) Other Requirements 4
3.5.1 §257.90(e) General Requirements 4
3.5.2 §257.94(d) Alternative Detection Monitoring Frequency 5
3.5.3 §257.94(e)(2) Alternative Source Demonstration for Detection Monitoring 5
3.5.4 §257.95(c) Alternative Assessment Monitoring Frequency 5
3.5.5 §257.95(d)(3) Assessment Monitoring Results and Standards 5
3.5.6 §257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring 6
3.5.7 §257.96(a) Extension of Time for Corrective Measures Assessment 6
3.6 §257.90(e)(6) Overview 6
3.7 References 6

Tables

Table 1 Groundwater Monitoring Well Network
Table 2 Groundwater Samples Summary
Table 3 Groundwater Elevation Summary
Table 4 Horizontal Gradients and Flow Velocity
Table 5A 2020 Groundwater Analytical Results Summary – January to September 2020
Table 5B 2020 Groundwater Analytical Results Summary – October 2020
Table 6 2020 Groundwater Field Data Summary

Figures

Figure 1 Site Location Map
Figure 2 Site Plan and Monitoring Well Locations
Figure 3 April Bedrock Potentiometric Surface Map
Figure 4 October Bedrock Potentiometric Surface Map

Appendices

Appendix A Regional Hydrogeologic Information
Appendix B Boring Logs and Well Construction Documentation
Appendix C Laboratory Reports
- C1 April 2020 Detection Monitoring
- C2 May Resample
- C3 October 2020 Detection Monitoring
- C4 December Resample

Appendix D Historical Monitoring Results
Appendix E Statistical Evaluation

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1.0 INTRODUCTION

This 2020 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the Coal Combustion Residuals (CCR) Rule [40 CFR 257.50-107]. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e). The applicable sections of the Rule are provided below in italics, followed by applicable information relative to the 2020 Annual Groundwater Monitoring and Corrective Action Report for the CCR Unit.

This report covers the period of groundwater monitoring from January 1, 2020, through December 31, 2020.

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**).

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 boring logs, well construction, and well development forms for the I-43 CCR monitoring wells are provided in **Appendix B**. All CCR monitoring wells are screened within the dolomite bedrock unit.

Shallow groundwater at the site generally flows east to west towards Weedens Creek, a tributary of the Sheboygan River. The April 2020 flow direction to the west at the water table is consistent with previous water table maps developed 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 2020 bedrock potentiometric surface maps based on groundwater elevations from monitoring wells MW-301 through MW-305 (**Figures 3** and **4**). The groundwater elevation data for the CCR monitoring wells are provided in **Table 3.** Calculated horizontal gradients and flow velocities for each of the flow paths are provided in **Table 4.**

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 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.

3.0 §257.90(e) ANNUAL REPORT REQUIREMENTS

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

3.1 §257.90(e)(1) SITE MAP

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

A map of the site location is provided on **Figure 1.** A map with an aerial image showing the I-43 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;

No new monitoring wells were installed and no wells were decommissioned as part of the groundwater monitoring program for the I-43 CCR unit in 2020.

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 and two resampling events were completed in 2020 at the I-43 Landfill. 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 2020, were analyzed for the Appendix III constituents. A resample event occurred in May 2020 at well MW-302 for fluoride and in December 2020 at wells MW-301 and MW-302 for fluoride. The resamples were done to further evaluate GPS exceedances at those wells and were performed in accordance with the Sampling and Analysis Plan for the site, which allows for 1-of-2 testing.

The sampling results for Appendix III parameters in 2020 are summarized in **Tables 5A** and **5B.** Field parameter results for the 2020 sampling events are provided in **Table 6.** The analytical laboratory reports are provided in **Appendix C**. Historical results for each monitoring well 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 2020. The I-43 Landfill remained in the detection monitoring program.

In 2020, the monitoring results for the October 2019 and April 2020 monitoring events were evaluated for statistically significant increases (SSIs) in detection monitoring parameters relative to background. As described in the technical memorandum in **Appendix E**, interwell UPLs were initially used for all Appendix III parameters, but the site transitioned to intrawell evaluation for boron beginning with the October 2018 monitoring event. The change in approach was implemented after determining that natural spatial variability was the most likely cause of boron concentrations slightly above the UPL in two compliance wells in the October 2017 and April 2018 monitoring events. 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, as described in more detail in the Alternative Source Demonstrations prepared for these events.

As part of the evaluation of the October 2020 monitoring results, the interwell and intrawell upper prediction limits (UPLs) were updated in January 2021 based on additional background monitoring results. The Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (USEPA, 2009) recommends periodic updating of background. The UPL update calculations are included in **Appendix E**. No SSIs were observed at any compliance monitoring wells for the October 2019, April 2020, or October 2020 monitoring events. As shown in **Tables 5A** and **5B**, some individual fluoride results exceeded the UPL and the laboratory's limit of quantitation, but retesting results were below the UPL; therefore, there is no SSI under the 1-of-2 retesting approach established for statistical evaluation at I-43.

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 2020 Annual Groundwater Monitoring and Corrective Action Report for the I-43 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 2019 and April 2020 monitoring events.
- Two semiannual groundwater sampling and analysis events (April and October 2020).
- Two resample groundwater sampling and analysis events (May and December 2020).

Description of Any Problems Encountered. No problems were encountered in 2020.

Discussion of Actions to Resolve the Problems. Not applicable.

Projection of Key Activities for the Upcoming Year (2021):

- Statistical evaluation and determination of any SSIs for the October/December 2020 and April 2021 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 2021).

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.

Not applicable. No SSIs were identified for the October 2019 or April 2020 monitoring events; therefore, no alternative source demonstrations were completed in 2020.

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.

3.7 REFERENCES

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.

Tables

1 Groundwater Monitoring Well Network
2 Groundwater Samples Summary
3 Groundwater Elevation Summary
4 Horizontal Gradients and Flow Velocity
5A Groundwater Analytical Results Summary – January to September 2020
5B Groundwater Analytical Results Summary – October 2020
6 2020 Groundwater Field Data Summary

Table 1. Groundwater Monitoring Well Network
Edgewater I-43 Landfill / SCS Engineers Project #25220069.00

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

Created by: RM Date: 12/14/2020
Last revision by: RM Date: 1/7/2021
Checked by: NDK Date: 1/7/2021

Table 2. CCR Rule Groundwater Samples Summary
Edgewater Generating Station I-43 Landfill
SCS Engineers Project #25220069.00

Sample Dates	Compliance Wells			Background Wells	
	MW-301	MW-302	MW-303	MW-304	MW-305
4/7-8/2020	D	D	D	D	D
5/20/2020	--	D-R	--	--	--
10/13-15/2020	D	D	D	D	D
12/18/2020	D-R	D-R	--	--	--
Total Samples	3	4	2	2	2

Abbreviations:
D = Required by Detection Monitoring Program
D-R = Detection Monitoring Retest Sample
-- = Not Sampled

Created by: NDK Date: 1/4/2018
Last revision by: RM Date: 1/13/2021
Checked by: NDK Date: 1/13/2021

Table 3. Groundwater Elevation Summary - CCR Monitoring Wells
WPL - I43 / SCS Engineers Project #25220069.00

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	--	--	--
Bottom of Well Elevation (ft)	562.40	558.24	574.60	572.48	594.70

Notes:
-- = not measured

Created by: NDK Date: 1/10/2020
Last rev. by: RM Date: 12/18/2020
Checked by: NDK Date: 12/18/2020

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Table 4. Horizontal Gradients and Flow Velocity Table
Edgewater I-43 Landfill
SCS Engineers Project #25220069.00
January - December 2020

	North				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
4/7/2020	658.0	657.0	488	0.002	0.09
4/7/2020	660.0	658.0	880	0.002	
10/12-15/2020	654.0	653.0	413	0.002	0.11
10/12-15/2020	656.0	654.0	761	0.003	

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
Geometric Mean	3.8E-03	11

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

Created by: RM Date: 12/29/2020
Last revision by: RM Date: 1/15/2021
Checked by: SCC Date: 1/15/2021

Table 5A. Groundwater Analytical Results Summary - January - September 2020
Edgewater I-43 Ash Disposal Facility, Sheboygan, WI / SCS Engineers Project #25220069.00

		Background Wells		Compliance Wells						
Parameter Name		**MW-304**	**MW-305**	**MW-301**		**MW-302**			**MW-303**	
	Interwell UPL	4/7/2020	4/7/2020	**Intrawell UPL**	4/7/2020	**Intrawell UPL**	4/8/2020	5/20/2020	**Intrawell UPL**	4/8/2020
Boron, ug/L		100	65.8	181.3	133	149.7	111	NA	99.2	79.0
Calcium, ug/L	112,600	18,600	88,800 P6		55,800		27,200	NA		29,900
Chloride, mg/L	27.28	5.2 J, D3	24.9		6.9 J, D3		4.4	NA		4.3
Fluoride, mg/L	0.716	0.75 J, D3	0.75		0.82 J, D3		0.75	0.70		0.60
Field pH, Std. Units	8.31	8.07	7.48		8.05		7.79	8.19		7.67
Sulfate, mg/L	140	15.4	135		11.2		19.4	NA		23.3
Total Dissolved Solids, mg/L	647.52	228	580		276		254	NA		274

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
NA = Not Analyzed
ug/L = micrograms per liter
mg/L = milligrams per liter
LOQ = Limit of Quantitation
LOD = Limit of Detection

Notes:
1. An individual result above the UPL does not constitute an SSI above background. Interwell UPLs based on 1-of-2 retesting approach; therefore, if either the original sample or a retest is below the UPL and/or the LOQ, there is no SSI.
2. Interwell UPLs calculated based on results from background wells MW-304 and MW-305.
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.

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Last revision by: SCC Date: 1/15/2021
Checked by: NDK Date: 1/15/2021
Proj Mgr QA/QC: TK Date: 1/16/2021

I:\25220069.00\Deliverables\2020 Fed CCR Annual Report\Tables\[Table 5A - Groundwater Analytical Summary - Jan-Sept 2020.xlsx]Table 5A

Table 5B. Groundwater Analytical Results Summary - October 2020
Edgewater I-43 Ash Disposal Facility, Sheboygan, WI / SCS Engineers Project #25220069.00

Parameter Name	Interwell UPL	Background Wells		Compliance Wells							
		MW-304	MW-305	MW-301			MW-302			MW-303	
		10/15/2020	10/15/2020	Intrawell UPL	10/13/2020	12/18/2020	Intrawell UPL	10/13/2020	12/18/2020	Intrawell UPL	10/13/2020
Boron, ug/L		94.5	65.5	184	142	NA	149	128	NA	100	85.8
Calcium, ug/L	103,000	15,800	76,800		33,400	NA		26,900	NA		29,000
Chloride, mg/L	24.9	2.1	24.5		4.2	NA		4.3	NA		5.2
Fluoride, mg/L	0.753	0.58	0.72		0.83	0.64		0.82	0.73		0.70
Field pH, Std. Units	8.34	8.12	7.63		7.96	NA		7.85	NA		8.31
Sulfate, mg/L	140	15.5	139		19.0	NA		19.0	NA		33.2
Total Dissolved Solids, mg/L	598	228	500		228	NA		192	NA		150

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
NA = Not Analyzed
ug/L = micrograms per liter
mg/L = milligrams per liter
LOQ = Limit of Quantitation
LOD = Limit of Detection

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 caculated using results from the May 2016 through the April 2020 sampling events.

Prepared by: NDK Date: 12/23/2020
Checked by: SCC Date: 1/3/2021
Proj Mgr QA/QC: SCC Date: 1/3/2021

I:\25220069.00\Deliverables\2020 Fed CCR Annual Report\Tables\[Table 5B - Groundwater Analytical Summary - October 2020.xlsx]Table-NEW UPLs

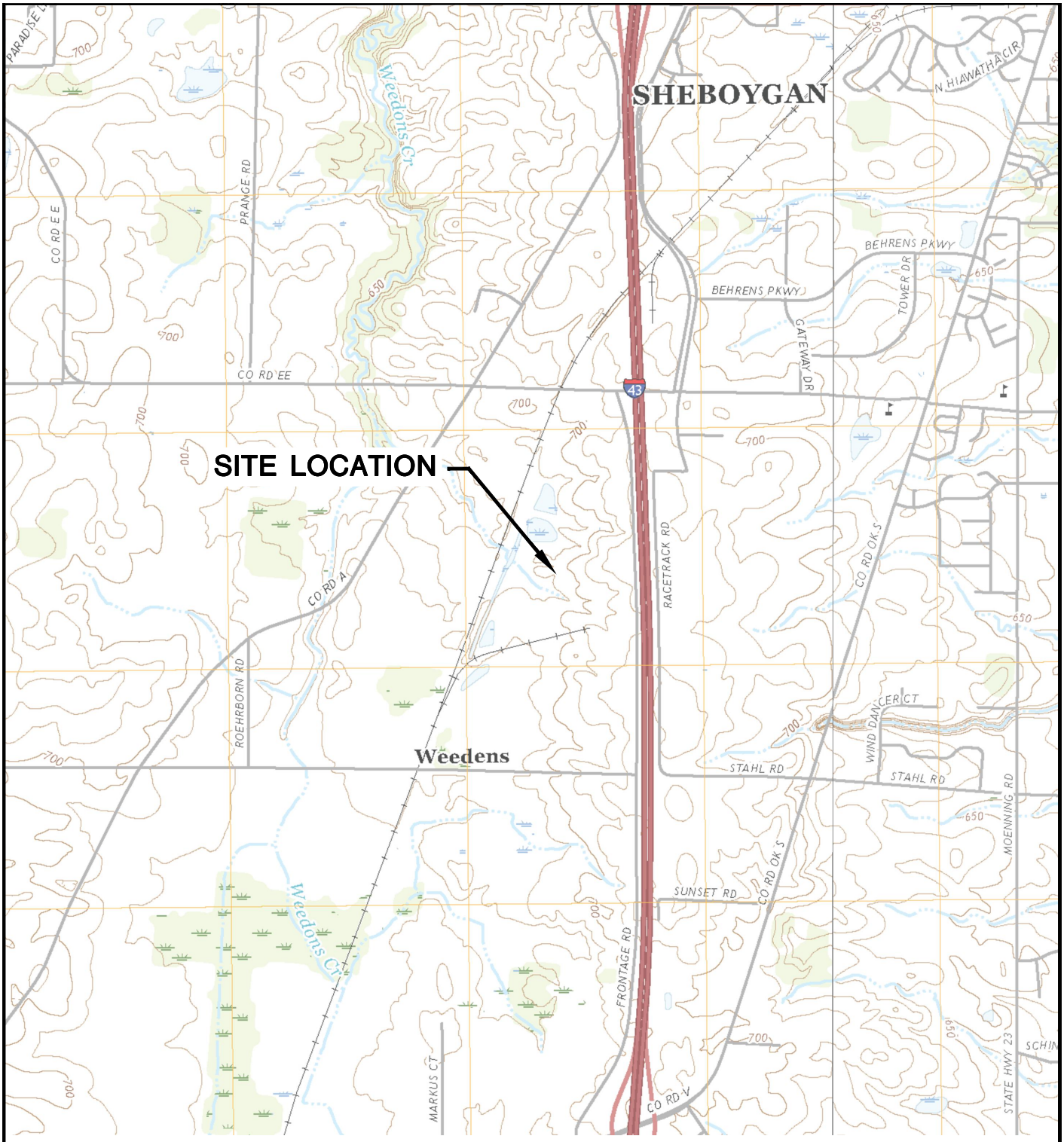
Table 6. Groundwater Field Data Summary
Edgewater I-43 Ash Disposal Facility / SCS Engineers Project #25220069.00
January - December 2020

Well	Sample Date	Groundwater Elevation (feet)	Field Temperature (deg C)	Field pH (Std. Units)	Oxygen, Dissolved (mg/L)	Field Specific Conductance (umhos/cm)	Field Oxidation Potential (mV)	Turbidity (NTU)
MW-301	4/7/2020	656.59	9.50	8.05	0.30	384	-69.0	259.0
	10/13/2020	652.16	12.5	7.96	1.10	354	162.0	57.28
	12/18/2020	653.91	8.10	7.64	0.50	391	1.7	69.45
MW-302	4/8/2020	656.47	9.30	7.79	0.70	413	-3.40	25.99
	5/20/2020	655.81	10.1	8.19	0.20	420	-6.00	10.15
	10/13/2020	652.17	11.9	7.85	0.30	418	37.0	14.16
	12/18/2020	653.88	8.90	8.05	1.00	426	163.0	9.23
MW-303	4/8/2020	656.46	9.40	7.67	0.50	454	-75.2	21.08
	10/13/2020	652.20	10.7	8.31	0.40	570	128.0	7.21
MW-304	4/7/2020	658.16	12.4	8.07	1.90	392	190.0	227.3
	10/15/2020	654.17	9.70	8.12	0.20	411	-10.0	9.10
MW-305	4/7/2020	661.58	10.5	7.48	0.53	917	28.0	7.35
	10/15/2020	658.08	10.0	7.63	0.30	911	-41.0	8.27

Created by:	RM	Date:	12/22/2020
Last revision by:	RM	Date:	1/7/2021
Checked by:	NDK	Date:	1/7/2021

Figures

1 Site Location Map
2 Site Plan and Monitoring Well Locations
3 April Bedrock Potentiometric Surface Map
4 October Bedrock Potentiometric Surface Map



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

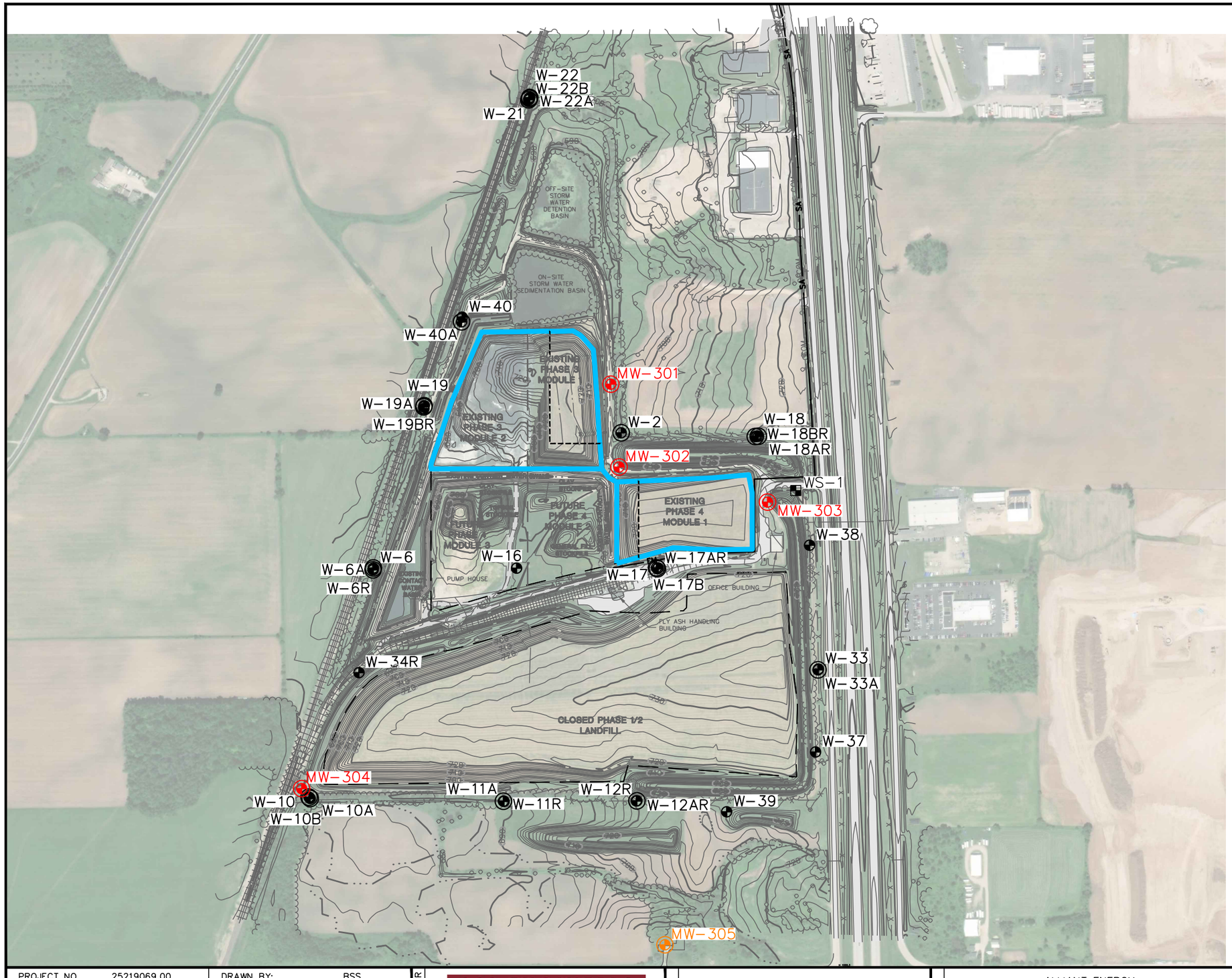
PROJECT NO.	25219069.00	DRAWN BY:	BSS
DRAWN:	11/20/2019	CHECKED BY:	MDB
REVISED:	01/13/2020	APPROVED BY:	TK 01/30/2020

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)
- 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 PIEZOMETER (BEDROCK)
- CCR 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. THE BACKGROUND MONITORING WELL FOR THE I-43 ASH DISPOSAL FACILITY IS MW-305.

N

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25219069.00	DRAWN BY:	BSS
DRAWN:	11/20/2019	CHECKED BY:	MDB
REVISED:	01/13/2020	APPROVED BY:	TK 1/28/2021

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

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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
- 656 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 APRIL 7, 2020.
5. THE BACKGROUND MONITORING WELL FOR THE I-43 LANDFILL IS MW-305.

500 0 500

SCALE: 1" = 500'

N

PROJECT NO.	25216069.00	DRAWN BY:	JMO/ZTW/MJT
DRAWN:	11/07/18	CHECKED BY:	NDK
REVISED:	12/29/20	APPROVED BY:	TK 1/28/2021

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

CLIENT: ALLIANT ENERGY
ALLIANT ENERGY WISCONSIN POWER AND LIGHT COMPANY

SITE: WISCONSIN POWER AND LIGHT
EDGEWATER GENERATING STATION
I-43 LANDFILL
TOWN OF WILSON, WISCONSIN

BEDROCK POTENTIOMETRIC SURFACE MAP
APRIL 7, 2020

FIGURE 3

I:\25220069.00\Drawings\□ □□L□□□DR□C□□APR□2020.dwg, 1/26/2021 3:11:55 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
- 652 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 12-15, 2020.
5. THE BACKGROUND MONITORING WELL FOR THE I-43 LANDFILL IS MW-305.

500 0 500

SCALE: 1" = 500'

N

PROJECT NO.	25216069.00	DRAWN BY:	JMO/ZTW/MJT
DRAWN:	11/07/18	CHECKED BY:	TK
REVISED:	12/29/20	APPROVED BY:	TK 1/28/2021

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

CLIENT: ALLIANT ENERGY
ALLIANT ENERGY WISCONSIN POWER AND LIGHT COMPANY

SITE: WISCONSIN POWER AND LIGHT
EDGEWATER GENERATING STATION
I-43 LANDFILL
TOWN OF WILSON, WISCONSIN

BEDROCK POTENTIOMETRIC SURFACE MAP
OCTOBER 12-15, 2020

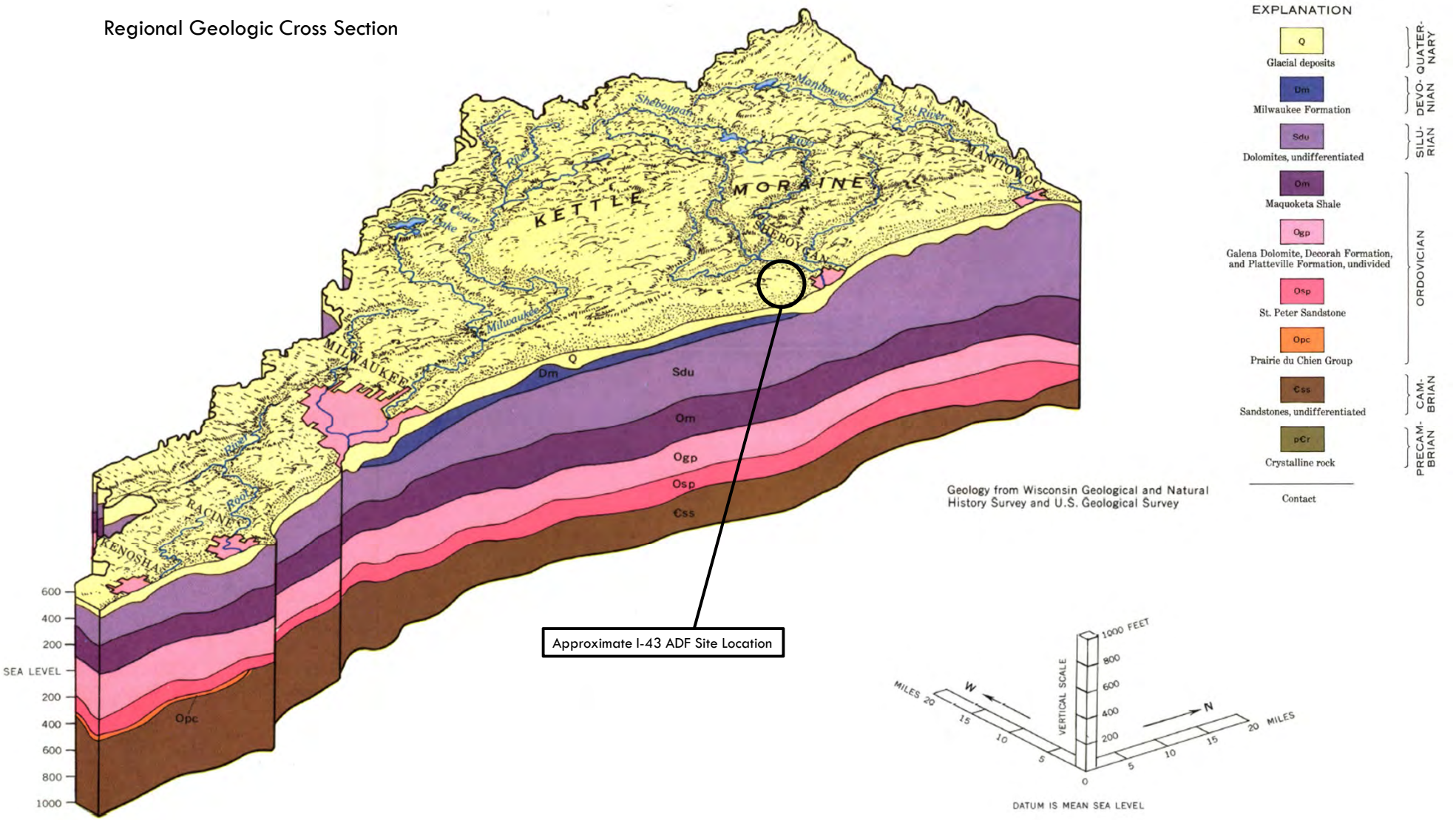
FIGURE 4

I:\25220069.00\Drawings\□ □□L□□□DR□C□□□C□2020.dwg, 1/26/2021 11:30:46 AM

Appendix A

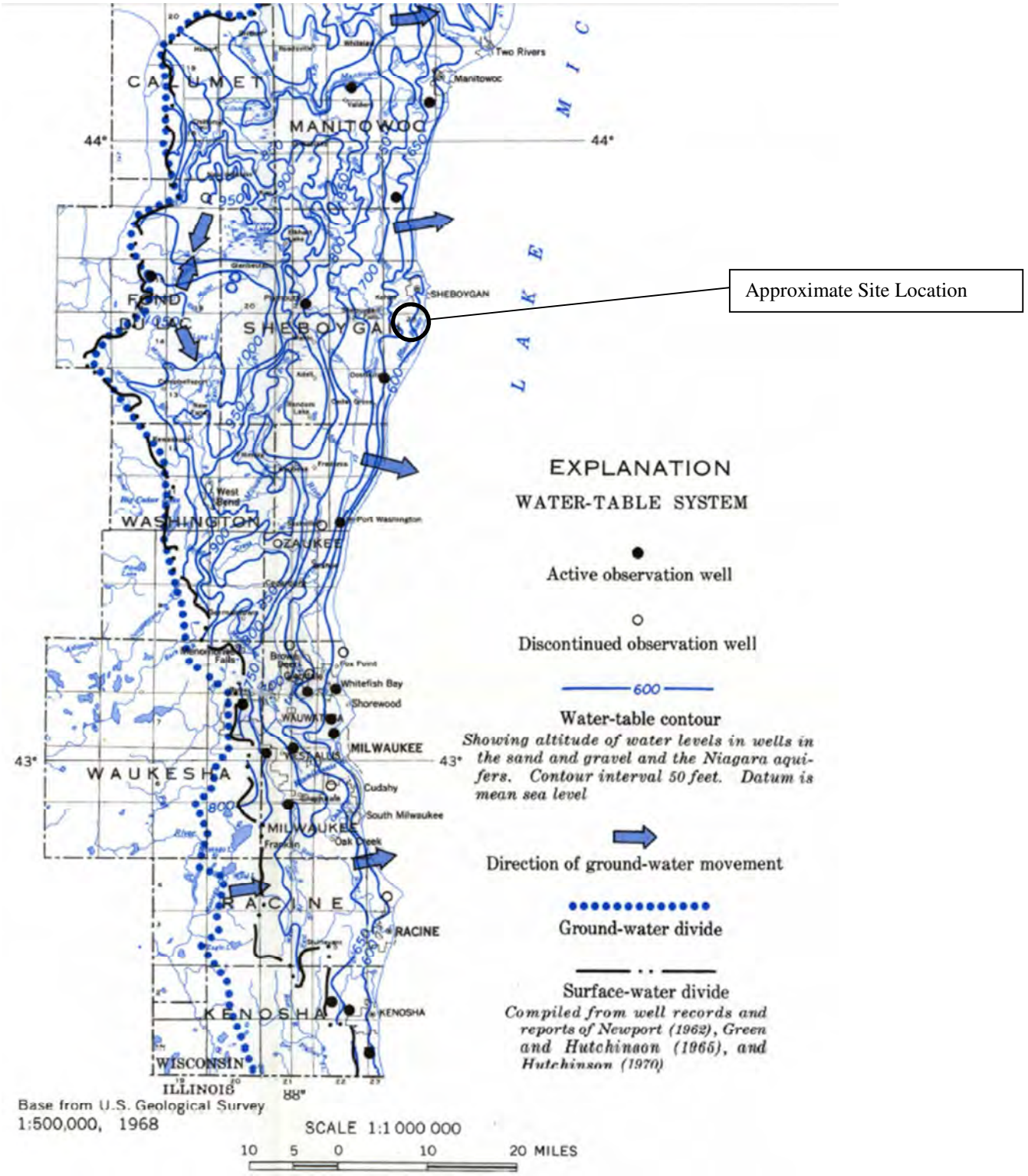
Regional Hydrogeologic Information

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).										
			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 JL 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.

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
			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		CL									
				LEAN CLAY, dark brown (7.5YR 4/4), trace medium to coarse sand, few fine sand partings, massive, diamicton (till).										
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)	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. Page 4 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
			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
S1	13	3 6 8 10	1–2	LEAN CLAY, strong brown (7.5YR 4/6) to dark brown (7.5YR 3/2) mottled, trace fine to coarse sand.					3.7	M				
S2	11	3 6 9 11	3–5	LEAN CLAY, brown (7.5YR 4/4), trace small, fine to coarse sand and fine gravel, possible clay and gravel fill @5' very hard, dry, diamicton (till).					3.5	M				
S3	18	5 8 10 14	6–8	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				
S4	15	4 4 7 8	9–12						2.0	M				
S5	19	3 6 10 12	13–15	Same as above, except brown (7.5YR 4/4), very hard, cohesive (till).					2.0-4.0	M				

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
Meghan Blodgett	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-302 Use only as an attachment to Form 4400-122. Page 2 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
			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)	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
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				
			83	SILT, brown, little fine sand, massive to indistinctly laminated (lake sediment).	ML									
			84											
			85											
			86											
			87											
			88											
S25	18	10 20 23 24	89	LEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel, very stiff, cohesive, diamicton (till).	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						1.0					S30 was not collected
			120	Same.	CL									
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:

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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
			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. Page 3 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
			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				

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
			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. Page 5 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	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
					SM									
			116	LEAN CLAY, 7.5 YR 5/2, trace gravel.										
S28	5	50/4	117		CL				2.5	W				
			118											
			119	SILTY SAND WITH GRAVEL, fine, with medium and coarse sand, greys, blues whites and browns, gravel is fine and coarse.										
S29	5	50/5	120							W				
			121	SILTY SAND, fine to coarse grained, trace fine gravel, fine (outwash).										
S30	8	41 50/4	122							W				
			123											
S31	2	50/4	124							W				
			125		SM									
			126											
S32	10	31 50/4	127	Same.						W				
			128											
			129											
S33	3	50/5	130							W				
			131	SILT, some gravel, very dense/stiff (weathered bedrock).										
S34	4	50/4	132		ML				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:

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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		CL									
			28											
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	LEAN CLAY, with fine to coarse sand, fine gravel, diamicton (till)	CL									
			65											

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	Moisture Content	Liquid Limit	Plasticity Index	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	DOLOMITE, gray (7.5YR 6/1), angular fragments.	DOLOMITE									
			117											
			118	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 7		CL				4.5+					
S4	18	4 10 9	9 10						4.5+					
			11 12											

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

Signature Kyle Thom Firm SCS Engineers
2830 Dairy Drive Madison, WI 53711
Tel: (608) 224-2830
Fax:

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
			13											
S5	18	4 6 8	14	Same as above except, brown (7.5 YR4/3).					2.5					
			15											Mud Roatary @ 15 ft bgs.
			16											
			17											
			18											
S6	18	4 6 9	19	Same as above except, trace gravel.					4.5+					
			20											
			21											
			22		CL									
			23											
S7	18	4 6 7	24						3.0					
			25											
			26											
			27											
			28											
S8	18	4 6 7	29						2.0					
			30											
			31											
			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	33–34						2.5					
			34–35											
			35–36											
			36–37											
			37–38											
S10	18	4 7 9	38–39						2.5					
			39–40											
			40–41											
			41–42		CL									
			42–43											
S11	18	3 7 8	43–44						2.5					
			44–45											
			45–46											
			46–47											
			47–48											
S12	18	3 9 13	48–49						2.0					
			49–50											
			50–51											
			51–52											

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 4 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
			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											
			69	POORLY GRADED SAND, gray (10YR 5/1), medium to coarse grained.										
S16	12	13 16 16	70		SP									
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											

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.										

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.

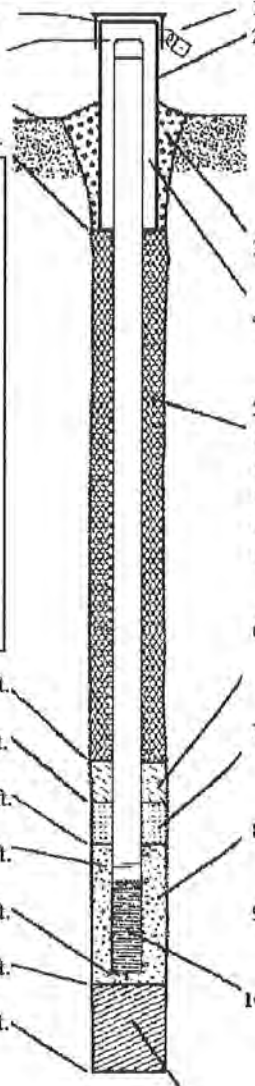
J. Filter pack, bottom 562.40 ft. MSL or 132 ft.

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. 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. 2 Bags Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. Ohio #7
b. Volume added 0.5 lbs ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #5
b. Volume added 3 lbs 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 ☒
Bedrock cuttings/slough

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

Signature: for J. 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

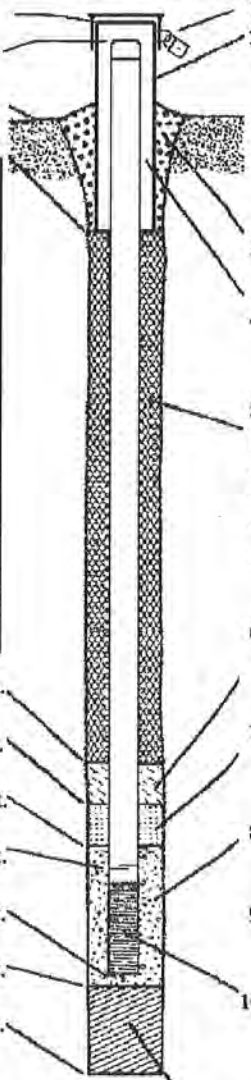
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☒ 41; Other ☐

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 [X]
Remediation/Redevelopment [ ] Other [ ]

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

Facility/Project Name: WPL-I43	Local Grid Location of Well: 625615.5 ft. [X] N. [ ] S. 2560451 ft. [X] E. [ ] W.	Well Name: MW-303
Facility License, Permit or Monitoring No.: 02853	Local Grid Origin [ ] (estimated: [ ]) or Well Location [X] 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 [X] 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 [X]

13. Sieve analysis performed? [ ] Yes [X] No

14. Drilling method used: Rotary [X] 5 0; Hollow Stem Auger [X] 4 1; Other [ ]

15. Drilling fluid used: Water [X] 0 2; Air [ ] 0 1; Drilling Mud [X] 0 3; None [ ] 9 9

16. Drilling additives used? [ ] Yes [X] 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.

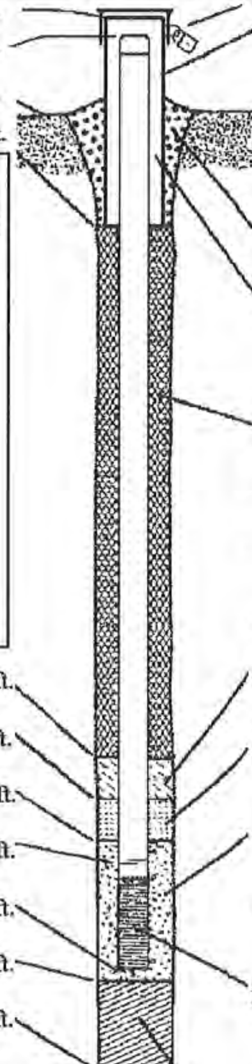
J. Filter pack, bottom 574.60 ft. MSL or 142 ft.

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? [X] Yes [ ] No

2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 5 ft.
c. Material: Steel [X] 0 4; Other [ ]
d. Additional protection? [X] Yes [ ] No
If yes, describe: yes, bumper posts (3)

3. Surface seal: Bentonite [X] 3 0; Concrete [ ] 0 1; Other [ ]

4. Material between well casing and protective pipe: Bentonite [ ] 3 0; Ohio #5 sand — Other [X]

5. Annular space seal: a. Granular/Chipped Bentonite [ ] 3 3
b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry [ ] 3 5
c. 150 Lbs/gal mud weight . . . . . Bentonite slurry [X] 3 1
d. ___ % Bentonite . . . . . . Bentonite-cement grout [ ] 5 0
e. ___ Ft^3 volume added for any of the above
f. How installed: Tremie [ ] 0 1; Tremie pumped [X] 0 2; Gravity [ ] 0 8

6. Bentonite seal: a. Bentonite granules [ ] 3 3
b. [ ] 1/4 in. [X] 3/8 in. [ ] 1/2 in. Bentonite chips [ ] 3 2
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 [ ] 2 3; Flush threaded PVC schedule 80 [X] 2 4; Other [ ]

10. Screen material: PVC
a. Screen type: Factory cut [X] 1 1; Continuous slot [ ] 0 1; Other [ ]
b. Manufacturer Model flex
c. Slot size: 0.01 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None [ ] 1 4; Native — Other [X]

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

Signature	Firm
[signature] for Zach Watson	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: 624204 ft. ☒ N. ☐ S. 2558156 ft. ☒ E. ☐ W.	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

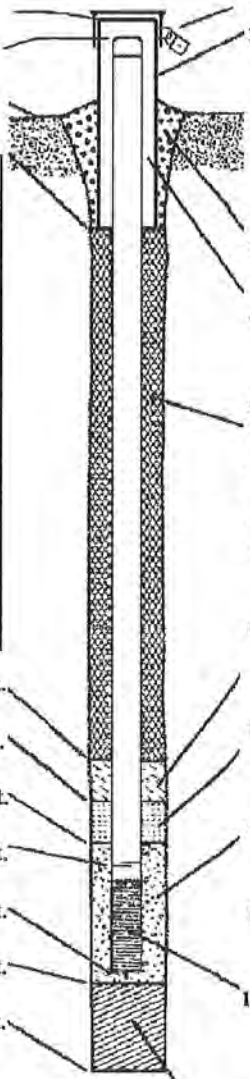
14. Drilling method used: Rotary ☒ 50 Hollow Stem Auger ☒ 41 Other ☐

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. ____ 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. Black Hills Bentonite Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Ohio #5 ☐
b. Volume added 0.5 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Ohio #7 ☐
b. Volume added 1 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 ☐

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 Management ☐
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

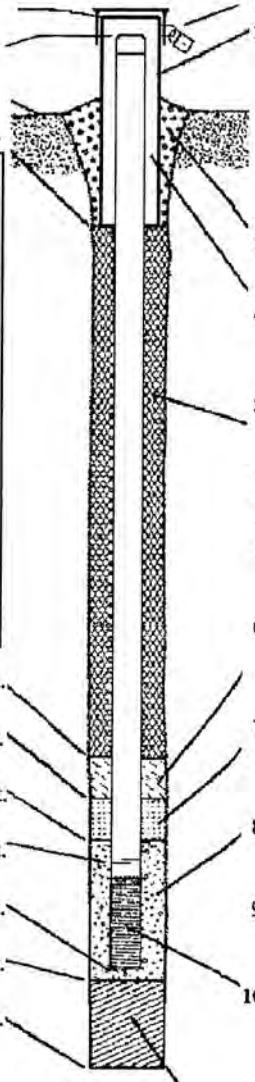
14. Drilling method used: Rotary ☒ 50 / Hollow Stem Auger ☒ 41 / Other ☐ ___

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: [signature] 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 # 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: _____
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	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) Medium brown color, Very turbid	Clear ☒ 20 Turbid ☐ 25 (Describe) Water mostly clear, 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 # 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)
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: 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.

Appendix C

Laboratory Reports

C1 April 2020 Detection Monitoring

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

April 24, 2020

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 10, 2020. 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: Tom Karwoski, SCS ENGINEERS
Nicole Kron, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY

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

CERTIFICATIONS

Project: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

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
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40206073006	**MW305**	Water	04/07/20 13:20	04/10/20 08:55
40206073007	**FIELD BLANK**	Water	04/07/20 13:05	04/10/20 08:55
40206073008	**MW301**	Water	04/07/20 15:31	04/10/20 08:55
40206073009	**MW304**	Water	04/07/20 12:16	04/10/20 08:55
40206073010	**MW303**	Water	04/08/20 09:30	04/10/20 08:55
40206073011	**MW302**	Water	04/08/20 10:20	04/10/20 08:55

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

SAMPLE ANALYTE COUNT

Project: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40206073006	**MW305**	EPA 6020	KXS	2
			HMG	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40206073007	**FIELD BLANK**	EPA 6020	KXS	2
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40206073008	**MW301**	EPA 6020	KXS	2
			HMG	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40206073009	**MW304**	EPA 6020	KXS	2
			HMG	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40206073010	**MW303**	EPA 6020	KXS	2
			HMG	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40206073011	**MW302**	EPA 6020	KXS	2
			HMG	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3

PASI-G = Pace Analytical Services - Green Bay

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

ANALYTICAL RESULTS

Project: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

Sample: MW305 **Lab ID: 40206073006** Collected: 04/07/20 13:20 Received: 04/10/20 08:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**65.8**	ug/L	10.0	3.0	1	04/12/20 22:16	04/17/20 11:42	7440-42-8	
Calcium	**88800**	ug/L	2540	762	10	04/12/20 22:16	04/16/20 14:44	7440-70-2	P6
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.48**	Std. Units			1		04/07/20 13:20		
Field Specific Conductance	**917**	umhos/cm			1		04/07/20 13:20		
Oxygen, Dissolved	**0.53**	mg/L			1		04/07/20 13:20	7782-44-7	
REDOX	**28**	mV			1		04/07/20 13:20		
Turbidity	**7.35**	NTU			1		04/07/20 13:20		
Static Water Level	**661.58**	feet			1		04/07/20 13:20		
Temperature, Water (C)	**10.5**	deg C			1		04/07/20 13:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**580**	mg/L	20.0	8.7	1		04/14/20 15:37		
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		04/13/20 09:52		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**24.9**	mg/L	2.0	0.43	1		04/16/20 20:11	16887-00-6	
Fluoride	**0.75**	mg/L	0.32	0.095	1		04/16/20 20:11	16984-48-8	
Sulfate	**135**	mg/L	20.0	4.4	10		04/17/20 12:37	14808-79-8	

Sample: FIELD BLANK **Lab ID: 40206073007** Collected: 04/07/20 13:05 Received: 04/10/20 08:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**<3.0**	ug/L	10.0	3.0	1	04/12/20 22:16	04/16/20 14:30	7440-42-8	
Calcium	**<76.2**	ug/L	254	76.2	1	04/12/20 22:16	04/16/20 14:30	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**10.0J**	mg/L	20.0	8.7	1		04/14/20 15:38		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

Sample: FIELD BLANK **Lab ID: 40206073007** Collected: 04/07/20 13:05 Received: 04/10/20 08:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.9**	Std. Units	0.10	0.010	1		04/13/20 09:54		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**<0.43**	mg/L	2.0	0.43	1		04/16/20 20:26	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		04/16/20 20:26	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		04/16/20 20:26	14808-79-8	

Sample: MW301 **Lab ID: 40206073008** Collected: 04/07/20 15:31 Received: 04/10/20 08:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**133**	ug/L	20.0	6.1	2	04/12/20 22:16	04/17/20 13:11	7440-42-8	
Calcium	**55800**	ug/L	508	152	2	04/12/20 22:16	04/17/20 13:11	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**8.05**	Std. Units			1		04/07/20 15:31		
Field Specific Conductance	**384**	umhos/cm			1		04/07/20 15:31		
Oxygen, Dissolved	**0.3**	mg/L			1		04/07/20 15:31	7782-44-7	
REDOX	**-69**	mV			1		04/07/20 15:31		
Turbidity	**259.0**	NTU			1		04/07/20 15:31		
Static Water Level	**656.59**	feet			1		04/07/20 15:31		
Temperature, Water (C)	**9.5**	deg C			1		04/07/20 15:31		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**276**	mg/L	20.0	8.7	1		04/14/20 15:38		
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		04/13/20 09:56		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**6.9J**	mg/L	10.0	2.2	5		04/17/20 15:36	16887-00-6	D3
Fluoride	**0.82J**	mg/L	1.6	0.48	5		04/17/20 15:36	16984-48-8	D3
Sulfate	**11.2**	mg/L	10.0	2.2	5		04/17/20 15:36	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: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

Sample: MW304 **Lab ID: 40206073009** Collected: 04/07/20 12:16 Received: 04/10/20 08:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**100**	ug/L	10.0	3.0	1	04/12/20 22:16	04/17/20 13:18	7440-42-8	
Calcium	**18600**	ug/L	254	76.2	1	04/12/20 22:16	04/17/20 13:18	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**8.07**	Std. Units			1		04/07/20 12:16		
Field Specific Conductance	**392**	umhos/cm			1		04/07/20 12:16		
Oxygen, Dissolved	**1.9**	mg/L			1		04/07/20 12:16	7782-44-7	
REDOX	**190**	mV			1		04/07/20 12:16		
Turbidity	**227.3**	NTU			1		04/07/20 12:16		
Static Water Level	**658.16**	feet			1		04/07/20 12:16		
Temperature, Water (C)	**12.4**	deg C			1		04/07/20 12:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**228**	mg/L	20.0	8.7	1		04/14/20 15:38		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.8**	Std. Units	0.10	0.010	1		04/13/20 09:57		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**5.2J**	mg/L	10.0	2.2	5		04/17/20 15:50	16887-00-6	D3
Fluoride	**0.75J**	mg/L	1.6	0.48	5		04/17/20 15:50	16984-48-8	D3
Sulfate	**15.4**	mg/L	10.0	2.2	5		04/17/20 15:50	14808-79-8	

Sample: MW303 **Lab ID: 40206073010** Collected: 04/08/20 09:30 Received: 04/10/20 08:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**79.0**	ug/L	10.0	3.0	1	04/12/20 22:16	04/17/20 13:38	7440-42-8	
Calcium	**29900**	ug/L	254	76.2	1	04/12/20 22:16	04/17/20 13:38	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.67**	Std. Units			1		04/08/20 09:30		
Field Specific Conductance	**454**	umhos/cm			1		04/08/20 09:30		
Oxygen, Dissolved	**0.5**	mg/L			1		04/08/20 09:30	7782-44-7	
REDOX	**-75.2**	mV			1		04/08/20 09:30		
Turbidity	**21.08**	NTU			1		04/08/20 09:30		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

Sample: MW303 **Lab ID: 40206073010** Collected: 04/08/20 09:30 Received: 04/10/20 08:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Static Water Level	**656.46**	feet			1		04/08/20 09:30		
Temperature, Water (C)	**9.4**	deg C			1		04/08/20 09:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**274**	mg/L	20.0	8.7	1		04/14/20 15:39		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.8**	Std. Units	0.10	0.010	1		04/13/20 10:04		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**4.3**	mg/L	2.0	0.43	1		04/17/20 16:05	16887-00-6	
Fluoride	**0.60**	mg/L	0.32	0.095	1		04/17/20 16:05	16984-48-8	
Sulfate	**23.3**	mg/L	2.0	0.44	1		04/17/20 16:05	14808-79-8	

Sample: MW302 **Lab ID: 40206073011** Collected: 04/08/20 10:20 Received: 04/10/20 08:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**111**	ug/L	10.0	3.0	1	04/12/20 22:16	04/17/20 13:45	7440-42-8	
Calcium	**27200**	ug/L	254	76.2	1	04/12/20 22:16	04/17/20 13:45	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.79**	Std. Units			1		04/08/20 10:20		
Field Specific Conductance	**413**	umhos/cm			1		04/08/20 10:20		
Oxygen, Dissolved	**0.70**	mg/L			1		04/08/20 10:20	7782-44-7	
REDOX	**-3.4**	mV			1		04/08/20 10:20		
Turbidity	**25.99**	NTU			1		04/08/20 10:20		
Static Water Level	**656.47**	feet			1		04/08/20 10:20		
Temperature, Water (C)	**9.3**	deg C			1		04/08/20 10:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**254**	mg/L	20.0	8.7	1		04/14/20 15:39		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

Sample: MW302 **Lab ID: 40206073011** Collected: 04/08/20 10:20 Received: 04/10/20 08:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.7**	Std. Units	0.10	0.010	1		04/15/20 06:43		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**4.4**	mg/L	2.0	0.43	1		04/17/20 16:19	16887-00-6	
Fluoride	**0.75**	mg/L	0.32	0.095	1		04/17/20 16:19	16984-48-8	
Sulfate	**19.4**	mg/L	2.0	0.44	1		04/17/20 16:19	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: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

QC Batch: 352275
QC Batch Method: EPA 3010
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40206073006, 40206073007, 40206073008, 40206073009, 40206073010, 40206073011

METHOD BLANK: 2039942 Matrix: Water
Associated Lab Samples: 40206073006, 40206073007, 40206073008, 40206073009, 40206073010, 40206073011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.0	10.0	04/16/20 14:16	
Calcium	ug/L	<76.2	254	04/16/20 14:16	

LABORATORY CONTROL SAMPLE: 2039943

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	500	469	94	80-120	
Calcium	ug/L	5000	5100	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2039944 2039945

Parameter	Units	40206073006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	65.8	500	500	538	535	95	94	75-125	1	20	
Calcium	ug/L	88800	5000	5000	91900	94800	62	118	75-125	3	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: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

QC Batch: 352513 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40206073006, 40206073007, 40206073008, 40206073009, 40206073010, 40206073011

METHOD BLANK: 2040928 Matrix: Water
Associated Lab Samples: 40206073006, 40206073007, 40206073008, 40206073009, 40206073010, 40206073011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	04/14/20 15:37	

LABORATORY CONTROL SAMPLE: 2040929

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	549	600	109	80-120	

SAMPLE DUPLICATE: 2040930

Parameter	Units	40206073006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	580	574	1	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: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

QC Batch: 352315
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40206073006, 40206073007, 40206073008, 40206073009, 40206073010

SAMPLE DUPLICATE: 2040062

Parameter	Units	40205757001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	0	20	H6

SAMPLE DUPLICATE: 2040063

Parameter	Units	40205948001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.5	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: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

QC Batch: 352553
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40206073011

SAMPLE DUPLICATE: 2041028

Parameter	Units	40206073011 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.7	7.8	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
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(920)469-2436

QUALITY CONTROL DATA

Project: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

QC Batch: 352599
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: 40206073006, 40206073007

METHOD BLANK: 2041158 Matrix: Water
Associated Lab Samples: 40206073006, 40206073007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	04/16/20 10:24	
Fluoride	mg/L	<0.095	0.32	04/16/20 10:24	
Sulfate	mg/L	<0.44	2.0	04/16/20 10:24	

LABORATORY CONTROL SAMPLE: 2041159

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.3	101	90-110	
Fluoride	mg/L	2	2.0	99	90-110	
Sulfate	mg/L	20	20.1	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2041160 2041161

Parameter	Units	40206062001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	421	400	400	842	834	105	103	90-110	1	15	
Fluoride	mg/L	8.1	40	40	49.5	49.1	103	102	90-110	1	15	
Sulfate	mg/L	20.4J	400	400	461	456	110	109	90-110	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2041162 2041163

Parameter	Units	40206073001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.5	20	20	34.4	34.3	109	109	90-110	0	15	
Fluoride	mg/L	0.39	2	2	2.6	2.6	112	112	90-110	0	15	M0
Sulfate	mg/L	298	200	200	481	495	92	99	90-110	3	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: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

QC Batch: 352635
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: 40206073008, 40206073009, 40206073010, 40206073011

METHOD BLANK: 2041422 Matrix: Water
Associated Lab Samples: 40206073008, 40206073009, 40206073010, 40206073011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	04/17/20 09:21	
Fluoride	mg/L	<0.095	0.32	04/17/20 09:21	
Sulfate	mg/L	<0.44	2.0	04/17/20 09:21	

LABORATORY CONTROL SAMPLE: 2041423

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.1	101	90-110	
Fluoride	mg/L	2	2.0	102	90-110	
Sulfate	mg/L	20	20.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2041424 2041425

Parameter	Units	40206285003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	208	200	200	411	408	102	100	90-110	1	15	
Fluoride	mg/L	<0.95	20	20	21.7	21.7	106	105	90-110	0	15	
Sulfate	mg/L	53.4	200	200	256	256	102	101	90-110	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2041426 2041427

Parameter	Units	40206292001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	83.4	200	200	290	288	103	103	90-110	0	15	
Fluoride	mg/L	<0.95	20	20	22.1	22.0	107	106	90-110	0	15	
Sulfate	mg/L	99.9	200	200	302	301	101	100	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: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

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.

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

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: 25220069 EDGEWATER I-43 CCR
Pace Project No.: 40206258

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40206073006	**MW305**	EPA 3010	352275	EPA 6020	352306
40206073007	**FIELD BLANK**	EPA 3010	352275	EPA 6020	352306
40206073008	**MW301**	EPA 3010	352275	EPA 6020	352306
40206073009	**MW304**	EPA 3010	352275	EPA 6020	352306
40206073010	**MW303**	EPA 3010	352275	EPA 6020	352306
40206073011	**MW302**	EPA 3010	352275	EPA 6020	352306
40206073006	**MW305**				
40206073008	**MW301**				
40206073009	**MW304**				
40206073010	**MW303**				
40206073011	**MW302**				
40206073006	**MW305**	SM 2540C	352513		
40206073007	**FIELD BLANK**	SM 2540C	352513		
40206073008	**MW301**	SM 2540C	352513		
40206073009	**MW304**	SM 2540C	352513		
40206073010	**MW303**	SM 2540C	352513		
40206073011	**MW302**	SM 2540C	352513		
40206073006	**MW305**	EPA 9040	352315		
40206073007	**FIELD BLANK**	EPA 9040	352315		
40206073008	**MW301**	EPA 9040	352315		
40206073009	**MW304**	EPA 9040	352315		
40206073010	**MW303**	EPA 9040	352315		
40206073011	**MW302**	EPA 9040	352553		
40206073006	**MW305**	EPA 300.0	352599		
40206073007	**FIELD BLANK**	EPA 300.0	352599		
40206073008	**MW301**	EPA 300.0	352635		
40206073009	**MW304**	EPA 300.0	352635		
40206073010	**MW303**	EPA 300.0	352635		
40206073011	**MW302**	EPA 300.0	352635		

(Please Print Clearly)	
Company Name:	SES Engineers
Branch/Location:	Madison WI
Project Contact:	Tom Karwoski
Phone:	608 216 7369
Project Number:	
Project Name:	Edgewater
Project State:	WI
Sampled By (Print):	ZACH WATSON
Sampled By (Sign):	
PO #:	Regulatory Program:

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

4000103

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Analyses Requested	FILTERED? (YES/NO)	PRESERVATION (CODE)*	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					TDS, Cl, F, SO4	N	A			
					pH	N	A			
					B Ca	N	D			
					Radium 226/228	N	D			
					Meta IS full list	N	D			
001	MW301	4-8	1420	GW	✓	✓	✓			
002	MW302	4-8	1340	GW	✓	✓	✓			
003	MW303	4-8	1300	GW	✓	✓	✓			
004	2ROW	4-8	1570	GW	✓	✓	✓			
005	~~FB~~ Field Blank	4-8	1345	W	✓	✓	✓			
006	MW305	4-7	1320	GW	✓	✓	✓	✓	✓	
007	Field Blank	4-7	1335	W	✓	✓	✓	✓	✓	
008	MW301	4-7	1531	GW	✓	✓	✓			
009	MW304	4-7	1216	GW	✓	✓	✓			
010	MW305	4-8	930	GW	✓	✓	✓			
011	MW302	4-8	1020	GW	✓	✓	✓			

MH

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Zach Watson	4-8-2020 1730		
CS Rogstad	4-10-20 0855	Susan Uffe Fax	4-10-20 0855
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.: 4000103
Receipt Temp = 20.1 °C
Sample Receipt pH: OK / Adjusted
Cooler Custody Seal: Present / Not Present
Intact / Not Intact

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: SCS Project # 40200073

All containers needing preservation have been checked and noted below: ☒Yes ☐No ☐N/A Initial when completed: SW Date/ Time:

Lab Lot# of pH paper: 10152791 Lab Std #ID of preservation (if pH adjusted):

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	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN							
001										2		1																		X		2.5 / 5 / 10
002										2		1																		X		2.5 / 5 / 10
003										2		1																		X		2.5 / 5 / 10
004										2		1																		X		2.5 / 5 / 10
005										2		1																		X		2.5 / 5 / 10
006										2		2														2				X		2.5 / 5 / 10
007										2		2														2				X		2.5 / 5 / 10
008										2		1																		X		2.5 / 5 / 10
009										2		1																		X		2.5 / 5 / 10
010										2		1																		X		2.5 / 5 / 10
011										2		1																		X		2.5 / 5 / 10
012																																2.5 / 5 / 10
013																																2.5 / 5 / 10
014																																2.5 / 5 / 10
015																																2.5 / 5 / 10
016																																2.5 / 5 / 10
017																																2.5 / 5 / 10
018																																2.5 / 5 / 10
019																																2.5 / 5 / 10
020																																2.5 / 5 / 10

2/10/20 SW

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
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Pace Analytical® 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 26Mar2020
	Document No.: ENV-FRM-GBAY-0014-Rev.00	Author: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: SCS

Project #: WO# : 40206073

40206073

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 - N/A **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr: _____

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

Person examining contents: Date: 4-10-20 /Initials: SL

Labeled By Initials: _____

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

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☑No ☐N/A	2. No Pg#, Mail Invoice, Project # 4-10-20 SL
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.
- 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.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☐Yes ☑No ☐N/A	12. 005 - time 1425
-Includes date/time/ID/Analysis Matrix: W		4-10-20 SL
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 May Resample

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

June 17, 2020

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40209307

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on May 22, 2020. 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: Tom Karwoski, SCS ENGINEERS
Nicole Kron, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY

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

CERTIFICATIONS

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40209307

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
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40209307

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40209307001	**MW-302**	Water	05/20/20 11:06	05/22/20 08:20

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

SAMPLE ANALYTE COUNT

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40209307

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40209307001	**MW-302**	EPA 300.0	HMB	1

PASI-G = Pace Analytical Services - Green Bay

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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40209307

Sample: MW-302 **Lab ID: 40209307001** Collected: 05/20/20 11:06 Received: 05/22/20 08:20 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	**0.70**	mg/L	0.32	0.095	1		06/16/20 17:25	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40209307

QC Batch: 357723
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: 40209307001

METHOD BLANK: 2069447 Matrix: Water
Associated Lab Samples: 40209307001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	<0.095	0.32	06/16/20 09:51	

LABORATORY CONTROL SAMPLE: 2069448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2069449 2069450

Parameter	Units	40208684001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	1.7	2	2	3.7	3.7	100	100	90-110	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2069451 2069452

Parameter	Units	40209307001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.70	2	2	2.7	2.7	100	100	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

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QUALIFIERS

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40209307

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.

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40209307

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40209307001	**MW-302**	EPA 300.0	357723		

REPORT OF LABORATORY ANALYSIS

WO#: 40209307

(Please Print Clearly)

Name:	SCS Engineers
Location:	Madison
Project:	Blodgett, Meghan
Phone:	608-216-7362
Number:	25220069.00
	Edgewater I-43 Ash Facil
	WI
Sampled By (Print):	Michael Krause
Sampled By (Sign):	

Regulatory Program:

Page 1 of 1

40209307
~~40208157~~

Pace Analytical
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	SCS Engineers
Invoice To Address:	2830 Dairy Dr. Madison, WI 53718
Invoice To Phone:	

Charge Options (billable)
- A Level III
- A Level IV

MS/MSD
- On your sample (billable).
- NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO)	PRESERVATION (CODE)*	Analyses Requested: Fluoride	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW-302	5/20	11:06	GW	N	A	X		Results 001 per Meghan MY 6/24/20	
002	DIFB	5/20	9:50	W			X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	5/21/20 830	Mary Jammin	5/21/20 8:45
Mary Jammin	5/21/20 1415		
	5/22/20 0800		5/22/20 0830

40209307

PACE Project No.: ~~40208157~~

Receipt Temp: 2.0 °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

Version 8.0 06/14/06

C3 October 2020 Detection Monitoring

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

November 04, 2020

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 2020. 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: Tom Karwoski, SCS ENGINEERS
Nicole Kron, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

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
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40216680001	**MW-301**	Water	10/13/20 13:30	10/16/20 10:00
40216680002	**MW-302**	Water	10/13/20 14:00	10/16/20 10:00
40216680003	**MW-303**	Water	10/13/20 14:30	10/16/20 10:00

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SAMPLE ANALYTE COUNT

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40216680001	**MW-301**	EPA 6020	DS1	2
			VGC	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40216680002	**MW-302**	EPA 6020	DS1	2
			VGC	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40216680003	**MW-303**	EPA 6020	DS1	2
			VGC	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

Sample: MW-301 **Lab ID: 40216680001** Collected: 10/13/20 13:30 Received: 10/16/20 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**142**	ug/L	10.0	3.0	1	10/19/20 05:51	10/27/20 05:02	7440-42-8	
Calcium	**33400**	ug/L	254	76.2	1	10/19/20 05:51	10/27/20 12:13	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.96**	Std. Units			1		10/13/20 13:30		
Field Specific Conductance	**354**	umhos/cm			1		10/13/20 13:30		
Oxygen, Dissolved	**1.1**	mg/L			1		10/13/20 13:30	7782-44-7	
REDOX	**162**	mV			1		10/13/20 13:30		
Turbidity	**57.28**	NTU			1		10/13/20 13:30		
Static Water Level	**652.16**	feet			1		10/13/20 13:30		
Temperature, Water (C)	**12.5**	deg C			1		10/13/20 13:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**228**	mg/L	20.0	8.7	1		10/19/20 17:03		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.8**	Std. Units	0.10	0.010	1		10/20/20 07:59		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**4.2**	mg/L	2.0	0.43	1		11/02/20 15:50	16887-00-6	
Fluoride	**0.83**	mg/L	0.32	0.095	1		11/02/20 15:50	16984-48-8	
Sulfate	**19.0**	mg/L	2.0	0.44	1		11/02/20 15:50	14808-79-8	

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ANALYTICAL RESULTS

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

Sample: MW-302 **Lab ID: 40216680002** Collected: 10/13/20 14:00 Received: 10/16/20 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**128**	ug/L	10.0	3.0	1	10/19/20 05:51	10/27/20 05:09	7440-42-8	
Calcium	**26900**	ug/L	254	76.2	1	10/19/20 05:51	10/27/20 12:19	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.85**	Std. Units			1		10/13/20 14:00		
Field Specific Conductance	**418**	umhos/cm			1		10/13/20 14:00		
Oxygen, Dissolved	**0.3**	mg/L			1		10/13/20 14:00	7782-44-7	
REDOX	**37**	mV			1		10/13/20 14:00		
Turbidity	**14.16**	NTU			1		10/13/20 14:00		
Static Water Level	**652.17**	feet			1		10/13/20 14:00		
Temperature, Water (C)	**11.9**	deg C			1		10/13/20 14:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**192**	mg/L	20.0	8.7	1		10/19/20 17:04		
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		10/20/20 08:01		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**4.3**	mg/L	2.0	0.43	1		11/02/20 16:04	16887-00-6	
Fluoride	**0.82**	mg/L	0.32	0.095	1		11/02/20 16:04	16984-48-8	
Sulfate	**19.0**	mg/L	2.0	0.44	1		11/02/20 16:04	14808-79-8	

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ANALYTICAL RESULTS

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

Sample: MW-303 **Lab ID: 40216680003** Collected: 10/13/20 14:30 Received: 10/16/20 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**85.8**	ug/L	10.0	3.0	1	10/19/20 05:51	10/27/20 05:15	7440-42-8	
Calcium	**29000**	ug/L	254	76.2	1	10/19/20 05:51	10/27/20 12:40	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**8.31**	Std. Units			1		10/13/20 14:30		
Field Specific Conductance	**570**	umhos/cm			1		10/13/20 14:30		
Oxygen, Dissolved	**0.4**	mg/L			1		10/13/20 14:30	7782-44-7	
REDOX	**128**	mV			1		10/13/20 14:30		
Turbidity	**7.21**	NTU			1		10/13/20 14:30		
Static Water Level	**652.20**	feet			1		10/13/20 14:30		
Temperature, Water (C)	**10.7**	deg C			1		10/13/20 14:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**150**	mg/L	20.0	8.7	1		10/19/20 17:03		
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		10/20/20 08:02		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**5.2**	mg/L	2.0	0.43	1		11/02/20 16:19	16887-00-6	
Fluoride	**0.70**	mg/L	0.32	0.095	1		11/02/20 16:19	16984-48-8	
Sulfate	**33.2**	mg/L	2.0	0.44	1		11/02/20 16:19	14808-79-8	

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QUALITY CONTROL DATA

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

QC Batch: 368600
QC Batch Method: EPA 3010
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40216680001, 40216680002, 40216680003

METHOD BLANK: 2131341 Matrix: Water
Associated Lab Samples: 40216680001, 40216680002, 40216680003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.0	10.0	10/27/20 01:45	
Calcium	ug/L	<76.2	254	10/27/20 11:18	

LABORATORY CONTROL SAMPLE: 2131342

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	500	455	91	80-120	
Calcium	ug/L	5000	4970	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2131343 2131344

Parameter	Units	40216667001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	7.8J	500	500	477	462	94	91	75-125	3	20	
Calcium	ug/L	43500	5000	5000	49600	49700	123	124	75-125	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

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QUALITY CONTROL DATA

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

QC Batch: 368700 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40216680001, 40216680002, 40216680003

METHOD BLANK: 2131681 Matrix: Water
Associated Lab Samples: 40216680001, 40216680002, 40216680003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/19/20 17:01	

LABORATORY CONTROL SAMPLE: 2131682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	584	532	91	80-120	

SAMPLE DUPLICATE: 2131683

Parameter	Units	40216680001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	228	218	4	10	

SAMPLE DUPLICATE: 2131684

Parameter	Units	40216744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	228	214	6	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
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QUALITY CONTROL DATA

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

QC Batch: 368741
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40216680001, 40216680002, 40216680003

SAMPLE DUPLICATE: 2131902

Parameter	Units	40216567010 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.8	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
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(920)469-2436

QUALITY CONTROL DATA

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

QC Batch: 369646
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: 40216680001, 40216680002, 40216680003

METHOD BLANK: 2136584 Matrix: Water
Associated Lab Samples: 40216680001, 40216680002, 40216680003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	11/02/20 12:00	
Fluoride	mg/L	<0.095	0.32	11/02/20 12:00	
Sulfate	mg/L	<0.44	2.0	11/02/20 12:00	

LABORATORY CONTROL SAMPLE: 2136585

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.6	103	90-110	
Fluoride	mg/L	2	2.1	104	90-110	
Sulfate	mg/L	20	20.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2136586 2136587

Parameter	Units	40217064001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	86.5	200	200	299	302	106	108	90-110	1	15	
Fluoride	mg/L	<0.95	20	20	22.2	22.5	108	109	90-110	1	15	
Sulfate	mg/L	168	200	200	382	383	107	108	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

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(920)469-2436

QUALIFIERS

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

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.

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

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

Pace Analytical Services, LLC
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Green Bay, WI 54302
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2521606 EDGEWATER I-43 ASH CCR
Pace Project No.: 40216680

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40216680001	**MW-301**	EPA 3010	368600	EPA 6020	368676
40216680002	**MW-302**	EPA 3010	368600	EPA 6020	368676
40216680003	**MW-303**	EPA 3010	368600	EPA 6020	368676
40216680001	**MW-301**				
40216680002	**MW-302**				
40216680003	**MW-303**				
40216680001	**MW-301**	SM 2540C	368700		
40216680002	**MW-302**	SM 2540C	368700		
40216680003	**MW-303**	SM 2540C	368700		
40216680001	**MW-301**	EPA 9040	368741		
40216680002	**MW-302**	EPA 9040	368741		
40216680003	**MW-303**	EPA 9040	368741		
40216680001	**MW-301**	EPA 300.0	369646		
40216680002	**MW-302**	EPA 300.0	369646		
40216680003	**MW-303**	EPA 300.0	369646		

40216680

Pace Analytical
WWW.PACELABS.COM

CHAIN-OF-CUSTODY / Analytical Request Document

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

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: CCR Rule Edgewater I-43 Ash (25216069)	Pace Project Manager: dan.milewsky@pacelabs.com,	State / Location
Requested Due Date:	Project #:	Pace Profile #: 3946-13	

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	pH	TDS, Cl, F, SO4	Boron/Calcium	Residual Chlorine (Y/N)	
1	MW-301	WT		10-13	1330														X	X	X		001
2	MW-302	WT		10-13	1400														X	X	X		002
3	MW-303	WT		10-13	1430														X	X	X		003
4	MW-304	WT																	X	X	X		
5	MW-305	WT																	X	X	X		
6	FIELD BLANK	WT																	X	X	X		
7		WT																	X	X			
8		WT																			X		
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
ALL SAMPLES UNFILTE	Zach Wan SCS	10-15	700	Mary Fannin	10/15/20	9:05				
	Mary Fannin	10/5/20	1015							
	C. Slotstis	10/6/20	1000	[illegible] Pace	10/16/20	1000	Ref	Y	Y	Y

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:					
SIGNATURE of SAMPLER:	DATE Signed:				

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 40216680

All containers needing preservation have been checked and noted below: ☑Yes ☐No ☐N/A Initial when completed: NP Date/ Time:

Lab Lot# of pH paper: 10D4194 Lab Std #ID of preservation (if pH adjusted):

	Glass								Plastic					Vials						Jars				General							
Pace Lab #	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001										2		1																			X		2.5 / 5 / 10
002										2		1																			X		2.5 / 5 / 10
003										2		1																			X		2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

1mL 12 NP

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
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Pace Analytical® 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 26Mar2020
	Document No.: ENV-FRM-GBAY-0014-Rev.00	Author: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #: WO#: 40216680

40216680

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 - NA **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: Rot /Corr:

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

Person examining contents: Date: 10/16/20 /Initials: AO

Labeled By Initials: SKW

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. PM # 10/16/20 NC
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.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr): 10/16/20 NC	☒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.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
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. NO Date/Time 10/16/20 NC
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

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

November 04, 2020

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 2020. 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: Tom Karwoski, SCS ENGINEERS
Nicole Kron, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY

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

CERTIFICATIONS

Project: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

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
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40216744001	**MW-304**	Water	10/15/20 09:40	10/17/20 09:05
40216744002	**MW-305**	Water	10/15/20 11:20	10/17/20 09:05
40216744003	**FIELD BLANK**	Water	10/15/20 11:20	10/17/20 09:05

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SAMPLE ANALYTE COUNT

Project: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40216744001	**MW-304**	EPA 6020	DS1, KXS	2
			VGC	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40216744002	**MW-305**	EPA 6020	DS1, KXS	2
			VGC	7
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40216744003	**FIELD BLANK**	EPA 6020	KXS	2
		SM 2540C	HNT	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3

PASI-G = Pace Analytical Services - Green Bay

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(920)469-2436

ANALYTICAL RESULTS

Project: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

Sample: MW-304 **Lab ID: 40216744001** Collected: 10/15/20 09:40 Received: 10/17/20 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**94.5**	ug/L	10.0	3.0	1	10/20/20 07:54	10/26/20 19:27	7440-42-8	
Calcium	**15800**	ug/L	254	76.2	1	10/20/20 07:54	10/22/20 20:16	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**8.12**	Std. Units			1		10/15/20 09:40		
Field Specific Conductance	**411**	umhos/cm			1		10/15/20 09:40		
Oxygen, Dissolved	**0.2**	mg/L			1		10/15/20 09:40	7782-44-7	
REDOX	**-10**	mV			1		10/15/20 09:40		
Turbidity	**9.1**	NTU			1		10/15/20 09:40		
Static Water Level	**654.17**	feet			1		10/15/20 09:40		
Temperature, Water (C)	**9.7**	deg C			1		10/15/20 09:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**228**	mg/L	20.0	8.7	1		10/19/20 17:05		
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		10/20/20 08:16		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**2.1**	mg/L	2.0	0.43	1		10/28/20 15:11	16887-00-6	
Fluoride	**0.58**	mg/L	0.32	0.095	1		10/28/20 15:11	16984-48-8	
Sulfate	**15.5**	mg/L	2.0	0.44	1		10/28/20 15:11	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: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

Sample: MW-305 **Lab ID: 40216744002** Collected: 10/15/20 11:20 Received: 10/17/20 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**65.5**	ug/L	10.0	3.0	1	10/20/20 07:54	10/26/20 19:34	7440-42-8	
Calcium	**76800**	ug/L	254	76.2	1	10/20/20 07:54	10/22/20 20:23	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.63**	Std. Units			1		10/15/20 11:20		
Field Specific Conductance	**911**	umhos/cm			1		10/15/20 11:20		
Oxygen, Dissolved	**0.3**	mg/L			1		10/15/20 11:20	7782-44-7	
REDOX	**-41**	mV			1		10/15/20 11:20		
Turbidity	**8.27**	NTU			1		10/15/20 11:20		
Static Water Level	**658.08**	feet			1		10/15/20 11:20		
Temperature, Water (C)	**10**	deg C			1		10/15/20 11:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**500**	mg/L	20.0	8.7	1		10/19/20 17:06		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.6**	Std. Units	0.10	0.010	1		10/20/20 08:17		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**24.5**	mg/L	2.0	0.43	1		11/02/20 12:29	16887-00-6	
Fluoride	**0.72**	mg/L	0.32	0.095	1		11/02/20 12:29	16984-48-8	
Sulfate	**139**	mg/L	20.0	4.4	10		10/28/20 17:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

Sample: FIELD BLANK **Lab ID: 40216744003** Collected: 10/15/20 11:20 Received: 10/17/20 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Boron	**<3.0**	ug/L	10.0	3.0	1	10/20/20 07:54	10/22/20 14:25	7440-42-8	
Calcium	**<76.2**	ug/L	254	76.2	1	10/20/20 07:54	10/22/20 14:25	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		10/19/20 17:06		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**5.8**	Std. Units	0.10	0.010	1		10/22/20 10:31		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**<0.43**	mg/L	2.0	0.43	1		11/02/20 12:57	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		11/02/20 12:57	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		11/02/20 12:57	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: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

QC Batch: 368751
QC Batch Method: EPA 3010
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40216744001, 40216744002, 40216744003

METHOD BLANK: 2131937 Matrix: Water
Associated Lab Samples: 40216744001, 40216744002, 40216744003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.0	10.0	10/22/20 14:05	
Calcium	ug/L	<76.2	254	10/22/20 14:05	

LABORATORY CONTROL SAMPLE: 2131938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	500	474	95	80-120	
Calcium	ug/L	5000	4900	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2131939 2131940

Parameter	Units	40216632001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	690	500	500	1110	1110	84	84	75-125	0	20	
Calcium	ug/L	192000	5000	5000	203000	205000	220	254	75-125	1	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: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

QC Batch: 368700
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40216744001, 40216744002, 40216744003

METHOD BLANK: 2131681 Matrix: Water
Associated Lab Samples: 40216744001, 40216744002, 40216744003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/19/20 17:01	

LABORATORY CONTROL SAMPLE: 2131682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	584	532	91	80-120	

SAMPLE DUPLICATE: 2131683

Parameter	Units	40216680001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	228	218	4	10	

SAMPLE DUPLICATE: 2131684

Parameter	Units	40216744001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	228	214	6	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: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

QC Batch: 368741
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40216744001, 40216744002

SAMPLE DUPLICATE: 2131902

Parameter	Units	40216567010 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.8	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: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

QC Batch: 369019
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40216744003

SAMPLE DUPLICATE: 2133297

Parameter	Units	40216739003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	1	20	H6

SAMPLE DUPLICATE: 2133298

Parameter	Units	40216874001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.1	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: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

QC Batch: 369393
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: 40216744001, 40216744002, 40216744003

METHOD BLANK: 2135651 Matrix: Water
Associated Lab Samples: 40216744001, 40216744002, 40216744003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	10/28/20 10:09	
Fluoride	mg/L	<0.095	0.32	10/28/20 10:09	
Sulfate	mg/L	<0.44	2.0	10/28/20 10:09	

LABORATORY CONTROL SAMPLE: 2135652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.6	103	90-110	
Fluoride	mg/L	2	2.1	105	90-110	
Sulfate	mg/L	20	20.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2135653 2135654

Parameter	Units	40216742001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	13.9	100	100	122	121	108	108	90-110	0	15	
Fluoride	mg/L	<0.48	10	10	11.6	11.6	116	116	90-110	1	15	M0
Sulfate	mg/L	293	400	400	731	730	110	109	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: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

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.

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

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: 25220069 ALLIANT I-43 CCR
Pace Project No.: 40216744

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40216744001	**MW-304**	EPA 3010	368751	EPA 6020	368970
40216744002	**MW-305**	EPA 3010	368751	EPA 6020	368970
40216744003	**FIELD BLANK**	EPA 3010	368751	EPA 6020	368970
40216744001	**MW-304**				
40216744002	**MW-305**				
40216744001	**MW-304**	SM 2540C	368700		
40216744002	**MW-305**	SM 2540C	368700		
40216744003	**FIELD BLANK**	SM 2540C	368700		
40216744001	**MW-304**	EPA 9040	368741		
40216744002	**MW-305**	EPA 9040	368741		
40216744003	**FIELD BLANK**	EPA 9040	369019		
40216744001	**MW-304**	EPA 300.0	369393		
40216744002	**MW-305**	EPA 300.0	369393		
40216744003	**FIELD BLANK**	EPA 300.0	369393		

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	SCS Engineers
Branch/Location:	Madison, WI
Project Contact:	Meg Blodgett
Phone:	608-216-7362
Project Number:	25220069
Project Name:	Alma Edge I-43
Project State:	WI
Sampled By (Print):	Zach Watson
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	SCS Engineers
Invoice To Address:	2830 Dairy Dr. Madison, WI 53718
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: H	8260 TDS	Cl, F, Sulf.	Boron, Calc	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					XN	A			N				
					XN	A			N				
					N	A			N				
					N	D			N				
001	MW304	10/15	9:40	GW			X	X	X	X			
002	MW305	10/15	11:20	GW			X	X	X	X			
003	FB	10/15	11:20				X	X	X	X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	10/16/20 800	Mary Fannin	10/16/20 10:35
Mary Fannin	10/16/20 1415		
FedEx Logistics	10/17/20 0905		

PACE Project No.: 40216744

Receipt Temp = 1.0 °C

Sample Receipt pH: OK / Adjusted

Cooler Custody Seal: Present / Not Present
Intact / Not Intact

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 14026744

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

Lab Lot# of pH paper: 10D4194 Lab Std #ID of preservation (if pH adjusted):

Initial when completed: KP Date/ Time:

	Glass								Plastic					Vials						Jars				General								
Pace Lab #	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001										2		1																			X		2.5 / 5 / 10
002										2		1																			X		2.5 / 5 / 10
003										2		1																			X		2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																												10/17/20 KP						2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

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
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Pace Analytical® 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 26Mar2020
	Document No.: ENV-FRM-GBAY-0014-Rev.00	Author: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #: WO#: 40216744

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 - NA **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr:

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

Person examining contents: Date: 10/17/20 /Initials: MP

Labeled By Initials: MLR

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. Price Contact + phone, 003 matrix MLR 10-17-20
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. Mail ^ 10/17/20 MP
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.
- 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.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
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. 003 ID "Field Blank" No Time | Date MLR 10-17-20 10/17/20 MP
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

C4 December Resample

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

December 23, 2020

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on December 18, 2020. 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: Tom Karwoski, SCS ENGINEERS
Nicole Kron, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY

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

CERTIFICATIONS

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

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
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40220100001	**MW-301**	Water	12/18/20 11:45	12/18/20 13:10
40220100002	**MW-302**	Water	12/18/20 10:35	12/18/20 13:10
40220100003	**01FB**	Water	12/18/20 10:40	12/18/20 13:10

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

SAMPLE ANALYTE COUNT

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40220100001	**MW-301**		VGC	7
		EPA 300.0	HMB	1
40220100002	**MW-302**		VGC	7
		EPA 300.0	HMB	1
40220100003	**01FB**	EPA 300.0	HMB	1

PASI-G = Pace Analytical Services - Green Bay

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

ANALYTICAL RESULTS

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

Sample: MW-301 **Lab ID: 40220100001** Collected: 12/18/20 11:45 Received: 12/18/20 13:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.64**	Std. Units			1		12/18/20 11:45		
Field Specific Conductance	**391**	umhos/cm			1		12/18/20 11:45		
Oxygen, Dissolved	**0.5**	mg/L			1		12/18/20 11:45	7782-44-7	
REDOX	**1.7**	mV			1		12/18/20 11:45		
Turbidity	**69.45**	NTU			1		12/18/20 11:45		
Static Water Level	**653.91**	feet			1		12/18/20 11:45		
Temperature, Water (C)	**8.1**	deg C			1		12/18/20 11:45		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Fluoride	**0.64**	mg/L	0.32	0.095	1		12/21/20 21:09	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: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

Sample: MW-302 **Lab ID: 40220100002** Collected: 12/18/20 10:35 Received: 12/18/20 13:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**8.05**	Std. Units			1		12/18/20 10:35		
Field Specific Conductance	**426**	umhos/cm			1		12/18/20 10:35		
Oxygen, Dissolved	**1.0**	mg/L			1		12/18/20 10:35	7782-44-7	
REDOX	**163**	mV			1		12/18/20 10:35		
Turbidity	**9.23**	NTU			1		12/18/20 10:35		
Static Water Level	**653.88**	feet			1		12/18/20 10:35		
Temperature, Water (C)	**8.9**	deg C			1		12/18/20 10:35		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Fluoride	**0.73**	mg/L	0.32	0.095	1		12/21/20 21:52	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: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

Sample: 01FB **Lab ID: 40220100003** Collected: 12/18/20 10:40 Received: 12/18/20 13:10 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		12/21/20 22:07	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: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

QC Batch: 374292
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: 40220100001, 40220100002, 40220100003

METHOD BLANK: 2163483 Matrix: Water
Associated Lab Samples: 40220100001, 40220100002, 40220100003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	<0.095	0.32	12/21/20 12:27	

LABORATORY CONTROL SAMPLE: 2163484

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2163485 2163486

Parameter	Units	40220100001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.64	2	2	2.6	2.7	100	101	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

QUALIFIERS

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

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.

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.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25220069.00 EDGEWATER I-43 ASH
Pace Project No.: 40220100

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40220100001	**MW-301**				
40220100002	**MW-302**				
40220100001	**MW-301**	EPA 300.0	374292		
40220100002	**MW-302**	EPA 300.0	374292		
40220100003	**01FB**	EPA 300.0	374292		

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UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

VC 12/18/20

Page 1 of

40220100 ~~40221 40220~~

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	SCS Engineers
Branch/Location:	Madison, WI
Project Contact:	Tom Karwoski
Phone:	608-216-7369
Project Number:	25220069.00
Project Name:	Edgewater I-43 Ash Facility
Project State:	WI
Sampled By (Print):	Michael Grant
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	SCS Engineers
Invoice To Address:	2830 Dairy Dr. Madison, WI 53718
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: Fluoride	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW-301	12/18	11:45	GW	N	A	X			
002	MW-302	12/18	10:35	GW	N	A	X			
003	01 FB	12/18	10:40	GW	N	A	X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	12/18/20 1200		12/18/20 1201
	12/18/20 1310		12/18/20 1310

PACE Project No. 40220100
Receipt Temp = ROT °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal Present / Not Present
Intact / Not Intact

C019a(27Jun2006)

Version 6.0 06/14/06

ORIGINAL

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 4022000

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

Initial when completed: Date/ Time:

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

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	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN							
001										1																							2.5 / 5 / 10
002										1																							2.5 / 5 / 10
003										1																							2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																												13/18/20		8			2.5 / 5 / 10
020																																	2.5 / 5 / 10

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
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Pace Analytical® 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 26Mar2020
	Document No.: ENV-FRM-GBAY-0014-Rev.00	Author: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: SCS Engineers

Project #: WO# : 40220100

40220100

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 - N/A **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: RDI /Corr:

Person examining contents: Date: 12/18/20 /Initials: SW

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

Labeled By Initials: SW

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. Pg #, Mail + Invoice Info 12/18/20 SW
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.
- 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:		8.
For Analysis: ☑Yes ☐No MS/MSD:	☐Yes ☑No ☐N/A	
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
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

Appendix D

Historical Monitoring Results

Single Location

Name: WPL - Edgewater I43

Location ID: MW-301
Number of Sampling Dates: 19

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	10/8/2019	4/7/2020	10/13/2020	12/18/2020
Boron	ug/L	298	157	151	148	174	--	177	181	144	138	145	149	136	120	126	142	133	142	--
Calcium	ug/L	389000	148000	94900	77800	127000	--	105000	51400	45200	57600	59400	48700	36700	43700	42900	42600	55800	33400	--
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	3.8	6.9	4.2	--
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	0.63	0.82	0.83	0.64
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	7.7	8.05	7.96	7.64
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	9.3	11.2	19	--
Total Dissolved Solids	mg/L	343	290	306	312	264	194	254	276	240	264	248	236	214	260	230	256	276	228	--
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	390	384	354	391
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	0.32	0.3	1.1	0.5
Field Oxidation Potential	mV	-94	-178	-155	-135	-143	--	-141	33	-53	-171	-161	-46	-138	-97	-99	97	-69	162	1.7
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	653.26	656.59	652.16	653.91
Temperature, Water (C)	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	9.8	9.5	12.5	8.1
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	133.7	259	57.28	69.45
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	7.9	7.9	7.8	--

Single Location

Name: WPL - Edgewater I43

Location ID: MW-302
Number of Sampling Dates: 20

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	10/8/2019	4/8/2020	5/20/2020	10/13/2020	12/18/2020
Boron	ug/L	198	121	131	126	127	--	151	149	132	124	130	128	124	115	118	129	111	--	128	--
Calcium	ug/L	254000	49000	36500	30900	42600	--	59300	41900	40800	38700	33900	31200	30000	28200	28400	29900	27200	--	26900	--
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	3.8	4.4	--	4.3	--
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	0.71	0.75	0.7	0.82	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	7.67	7.79	8.19	7.85	8.05
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	18.4	19.4	--	19	--
Total Dissolved Solids	mg/L	543	346	308	298	302	280	324	344	322	284	262	238	248	250	248	242	254	--	192	--
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	423	413	420	418	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	0.72	0.7	0.2	0.3	1
Field Oxidation Potential	mV	52	-108	-95	-107	-73	--	-79	25	-12	-14	-115	70	-75	60	18	90	-3.4	-6	37	163
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	653.21	656.47	655.81	652.17	653.88
Temperature, Water (C)	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	9.7	9.3	10	11.9	8.9
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	11.73	25.99	10.15	14.16	9.23
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	7.9	7.7	--	7.9	--

Single Location

Name: WPL - Edgewater I43

Location ID: MW-303
Number of Sampling Dates: 18

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	10/13/2020
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	85.8
Calcium	ug/L	48300	36900	36700	31600	50500	--	46700	32600	33200	35500	35900	29100	31900	31600	31700	30900	29900	29000
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	5.2
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	0.7
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	8.31
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	33.2
Total Dissolved Solids	mg/L	468	314	378	458	312	310	400	300	348	314	290	304	260	270	270	230	274	150
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	570
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	0.4
Field Oxidation Potential	mV	178	-174	-138	-185	-156	--	-168	-119	-93	-65	-157	88	-125	-105	-65	127	-75.2	128
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	652.2
Temperature, Water (C)	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	10.7
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	7.21
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	7.9

Single Location

Name: WPL - Edgewater I43

Location ID: MW-304
Number of Sampling Dates: 18

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	10/15/2020
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	94.5
Calcium	ug/L	24500	25400	26700	23000	24800	--	24300	24500	24800	23500	23000	20100	20200	19400	19100	20600	18600	15800
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	2.1
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	0.58
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	8.12
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	15.5
Total Dissolved Solids	mg/L	222	234	244	232	198	212	214	206	224	218	222	208	222	224	226	172	228	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	411
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	0.2
Field Oxidation Potential	mV	-57	-129	-127	-84	-3	--	-98	14	-100	-104	-107	145	-103	-81	-23	104	190	-10
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	654.17
Temperature, Water (C)	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	9.7
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	9.1
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	8

Single Location

Name: WPL - Edgewater I43

Location ID:	MW-305											
Number of Sampling Dates:	11											
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**
Boron	ug/L	94.4	86.4	78.8	76.5	70	71.7	65.9	68	73	65.8	65.5
Calcium	ug/L	93800	103000	102000	95900	90700	83000	82200	89000	90300	88800	76800
Chloride	mg/L	20.8	20.4	22.5	21.3	21.5	21.8	22.7	23	22.5	24.9	24.5
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
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
Sulfate	mg/L	127	131	140	130	134	129	130	136	137	135	139
Total Dissolved Solids	mg/L	576	576	598	570	540	566	572	568	548	580	500
Antimony	ug/L	0.21	0.088	0.59	0.53	0.23	<0.15	<0.15	0.78	<0	--	--
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	--	--
Cadmium	ug/L	<0.089	<0.089	<0.081	<0.081	0.1	<0.081	<0.15	0.83	<0	--	--
Chromium	ug/L	10.8	6.8	4	2.7	1.8	<1	<1	1.2	<0	--	--
Cobalt	ug/L	2.6	1.5	0.8	0.56	0.5	<0.085	<0.12	0.83	<0	--	--
Lead	ug/L	2.4	1.6	0.98	0.87	0.44	<0.2	<0.24	0.81	<0	--	--
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	--	--
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	--	--
Thallium	ug/L	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.8	<0	--	--
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
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
Field Oxidation Potential	mV	-224	-108	-167	-122	-125	-120	-101	-75	112	28	-41
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
Temperature, Water (C)	deg C	7.9	9.2	11.3	12.4	10.3	8.9	9.9	9.8	12.4	10.5	10
Turbidity	NTU	613.2	138	140.6	67.21	42.54	13.01	10.56	9.67	6.56	7.35	8.27
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

Appendix E

Statistical Evaluation

January 25, 2021
File No. 25220069.00

TECHNICAL MEMORANDUM

SUBJECT: Statistical Evaluation of Groundwater Monitoring Results – UPL Update
I-43 Ash Disposal Facility October 2020

PREPARED BY: Nicole Kron

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.

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, as well three compliance monitoring wells, MW-301, MW-302, and MW-303. The statistical analysis includes intrawell evaluation for boron and Interwell evaluation for the remaining Appendix III parameters.

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. The April 2018 ASD indicated that the boron levels in the compliance wells that exceeded the interwell UPL were due 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. The April 2018 ASD indicated that the boron levels in the compliance wells that exceeded the interwell UPL were due to natural variability and not to a release from the ADF. Therefore, an intrawell approach was recommended. The UPLs for boron were calculated based on a parametric intrawell approach.

The UPLs for boron were calculated based on a parametric intrawell approach.

The initial UPLs were calculated on an interwell basis based on ten rounds of background monitoring performed prior to the initiation of compliance monitoring for the I-43 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 October 2020 monitoring results, the background data set for the Appendix III UPL calculations is being updated to include data from the background wells collected through October 2020. For the boron intrawell evaluation, the update includes data collected through May 2020. 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 number of background samples is less than or equal to 25, run Dixon's test for suspected outliers.
   b) If 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 they 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., 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 the October 2020 sampling event, 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).** 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.

- **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.

- **Total Dissolved Solids (MW-305).** One low result from the October 2020 event was flagged as a statistical outlier. The result was not removed from the dataset because there was no known explanation for high result and it appeared to be within the range of potential natural variation relative to the other observed 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 October 2020 sampling event, no background values were identified as potential outliers in the compliance monitoring wells (MW-301, MW-302, and MW-303). 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 original background data set (4/2016 through 8/2017) and the data to be added (10/2017 through 10/2020 for background wells, 10/2017 through 5/2020 for 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 (inds no significant difference between the two groups at the 1% level of significance.

The Sanitas background group comparison for the I-43 background data sets, included in **Attachment 4**, indicated no signficant difference at the 1% level; therefore, the more recent data can be added to the background pool. The comparison uses 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.)

INTERWELL PREDICTION LIMITS

Interwell prediction limits were calculated for all parameters except boron. 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 October 2020 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 October 2020 event, the following values were used:

Parameter	Value	Comments
Evaluations per year	2	Spring and Fall events
Constituents analyzed	7	Total of 7 constituents analyzed
Compliance wells	3	

Non-parametric prediction limits are also based on a 1-of-2 retesting protocol. The non-parametric limit is the highest value in the background dataset. Due to the small sample size, the false positive rate for the non-parametric tests is higher than for the parametric tests, but will go down as more background data are obtained.

Interwell prediction limit analysis results are included in **Attachment 5**.

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 MW303) for each monitored constituent, with outliers removed as noted above.

During this evaluation of compliance monitoring, groundwater results from April 2016 through April 2020 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.

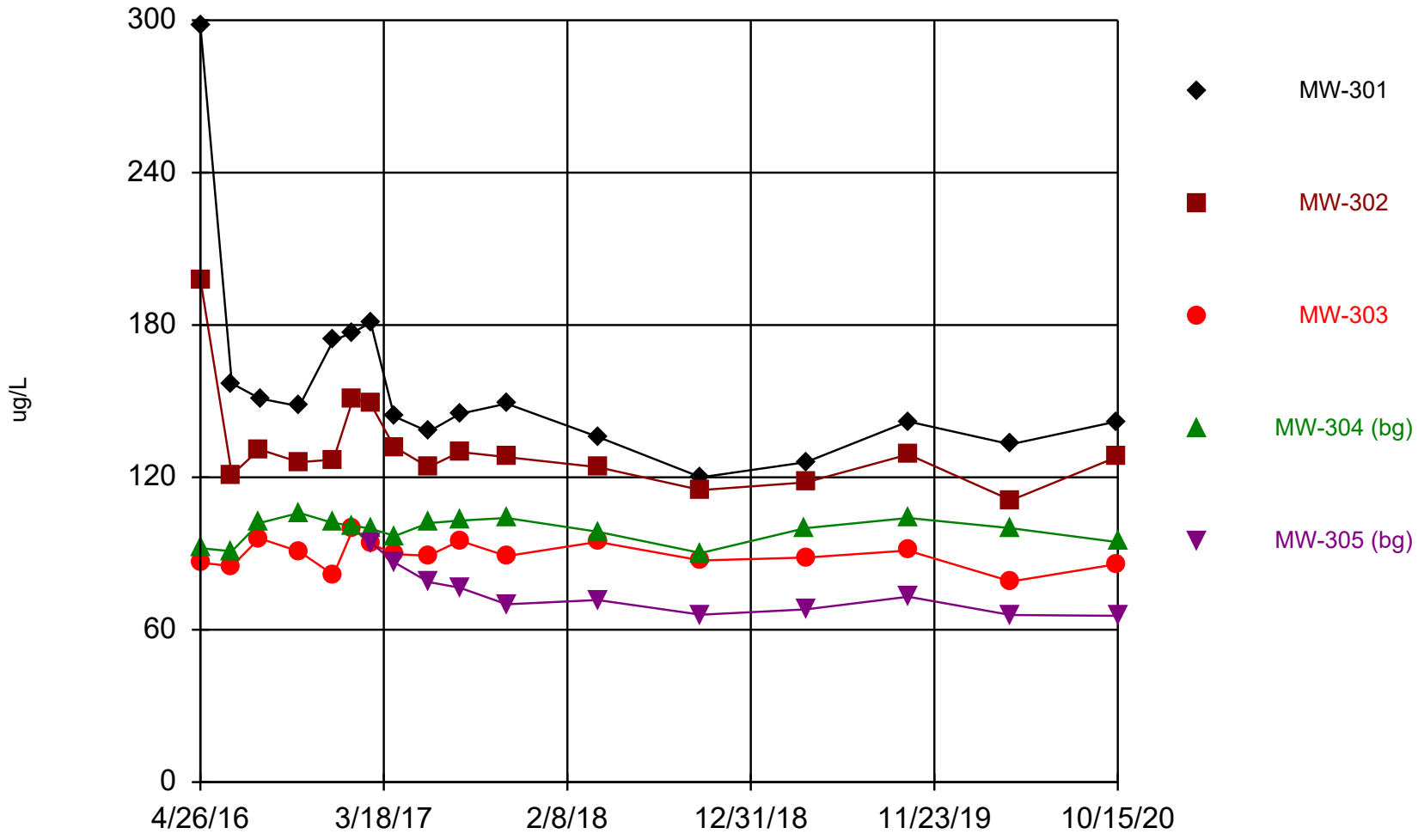
NDK/SCC

I:\25220069.00\Data and Calculations\Sanitas\I-43 Appendix III - UPL calcs\I-43 LF CCR Stats Memo_R20210125.docx

Attachment 1

Times Series Graphs

Boron



Time Series Analysis Run 12/1/2020 2:02 PM View: I-43 LF Detection Monitoring

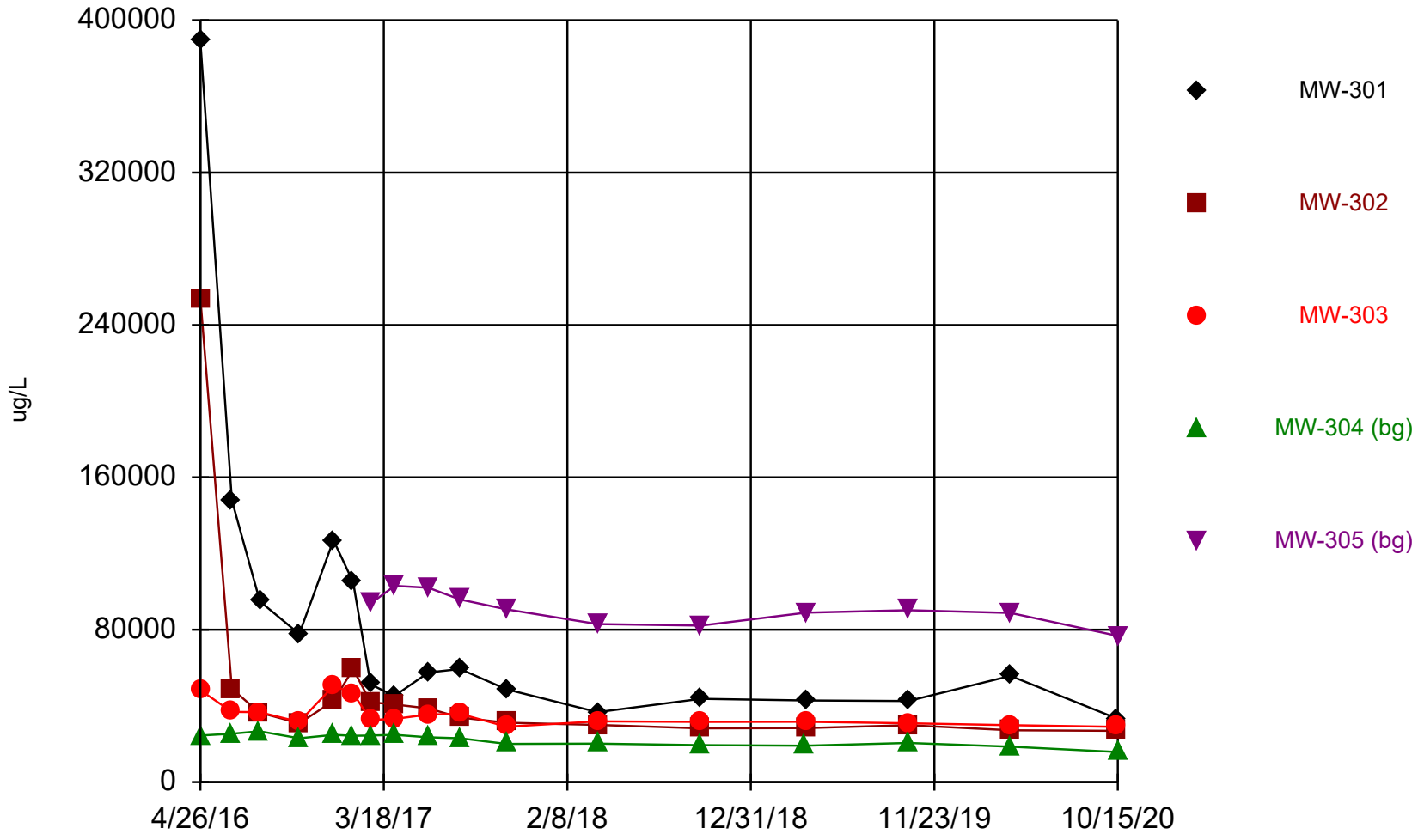
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Time Series

Constituent: Boron (ug/L) Analysis Run 12/1/2020 2:06 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	298	198	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

Calcium



Time Series Analysis Run 12/1/2020 2:02 PM View: I-43 LF Detection Monitoring

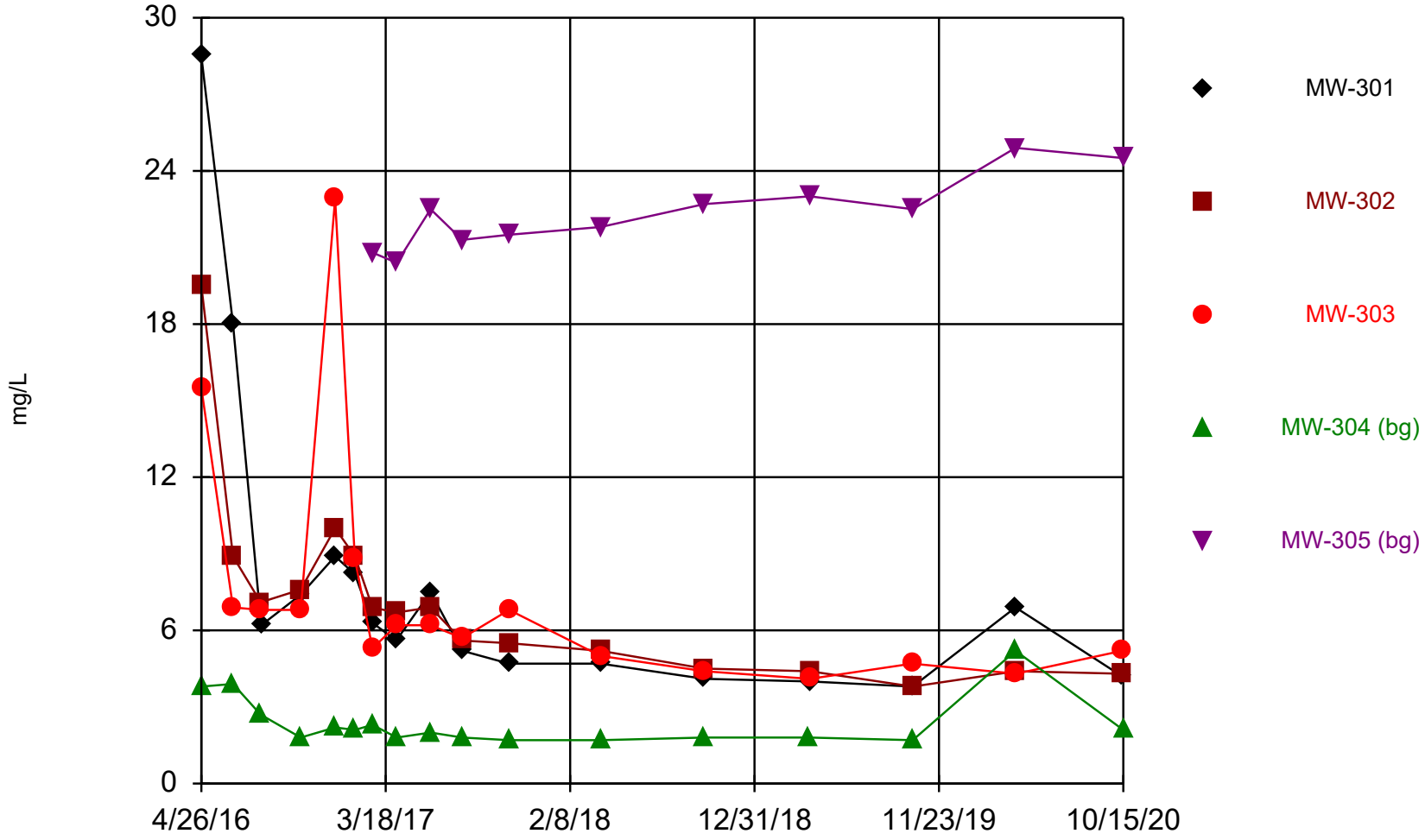
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Time Series

Constituent: Calcium (ug/L) Analysis Run 12/1/2020 2:06 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	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

Chloride



Time Series Analysis Run 12/1/2020 2:03 PM View: I-43 LF Detection Monitoring

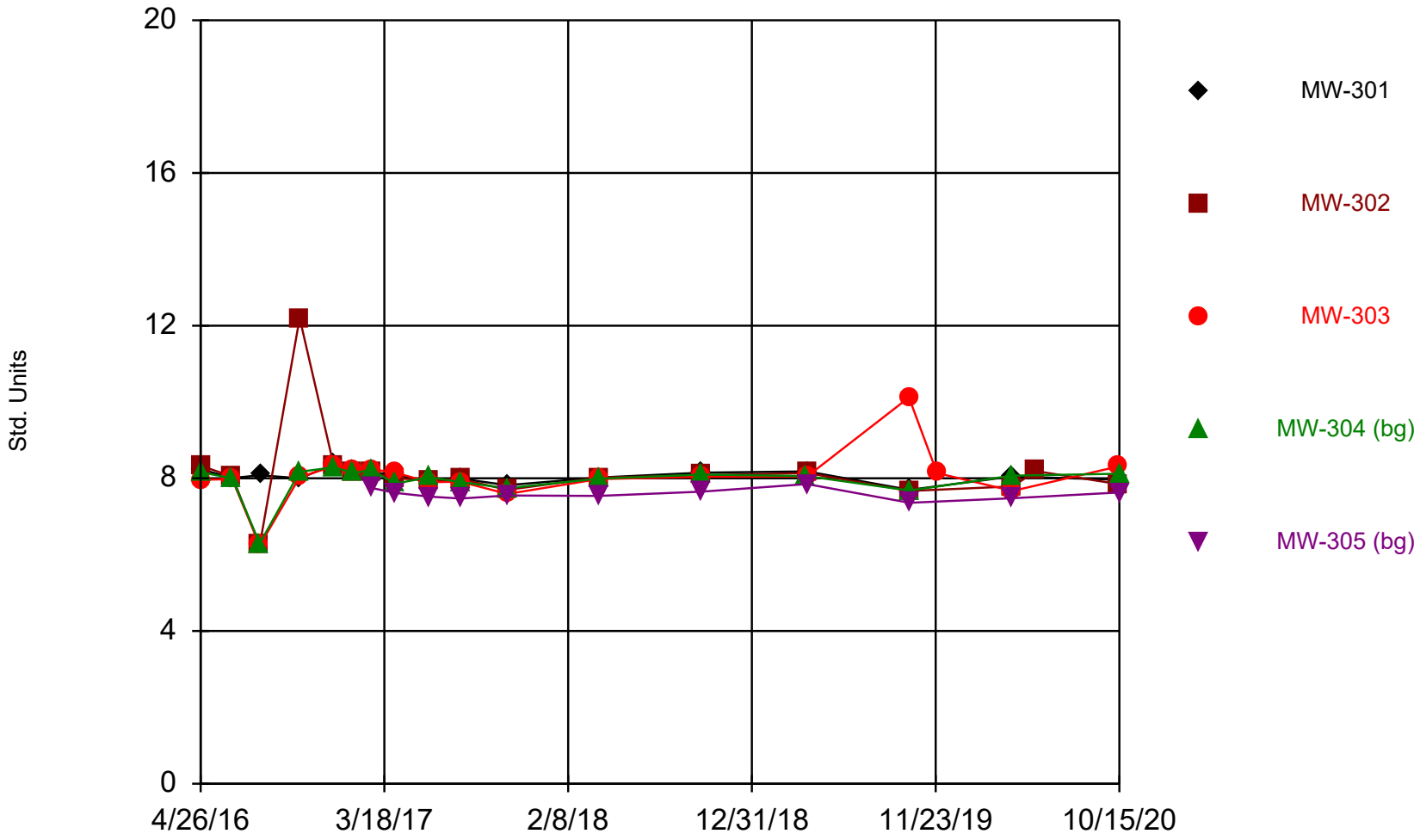
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/1/2020 2:06 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	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

Field pH



Time Series Analysis Run 12/1/2020 2:03 PM View: I-43 LF Detection Monitoring

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

Time Series

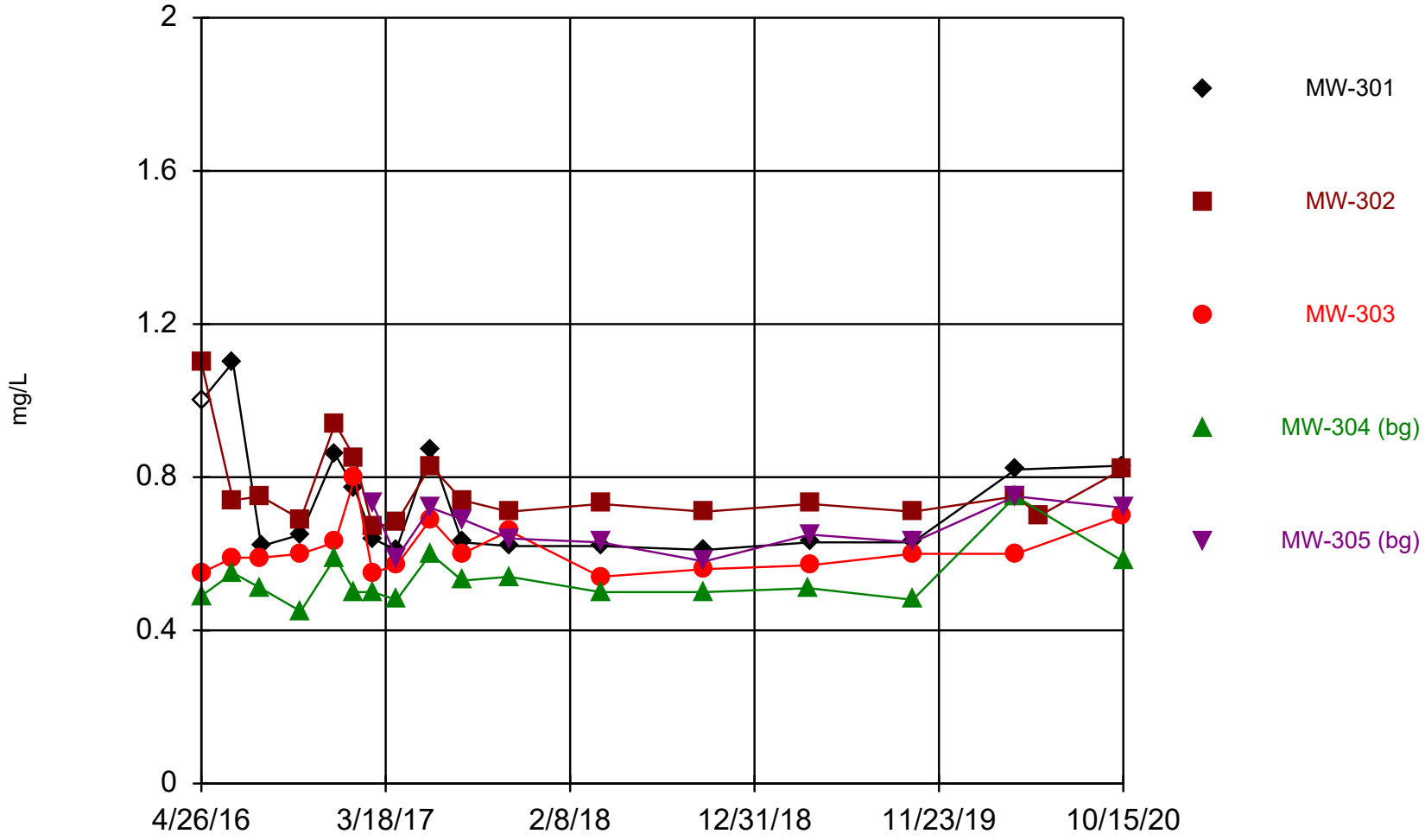
Constituent: Field pH (Std. Units) Analysis Run 12/1/2020 2:06 PM View: I-43 LF Detection Monitoring

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	6.24	6.29	
8/10/2016	8.08				
10/19/2016	8	12.2	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		7.79	7.67		
5/20/2020		8.19			
10/13/2020	7.96	7.85	8.31		
10/15/2020				8.12	7.63

Hollow symbols indicate censored values.

Fluoride



Time Series Analysis Run 12/1/2020 2:03 PM View: I-43 LF Detection Monitoring

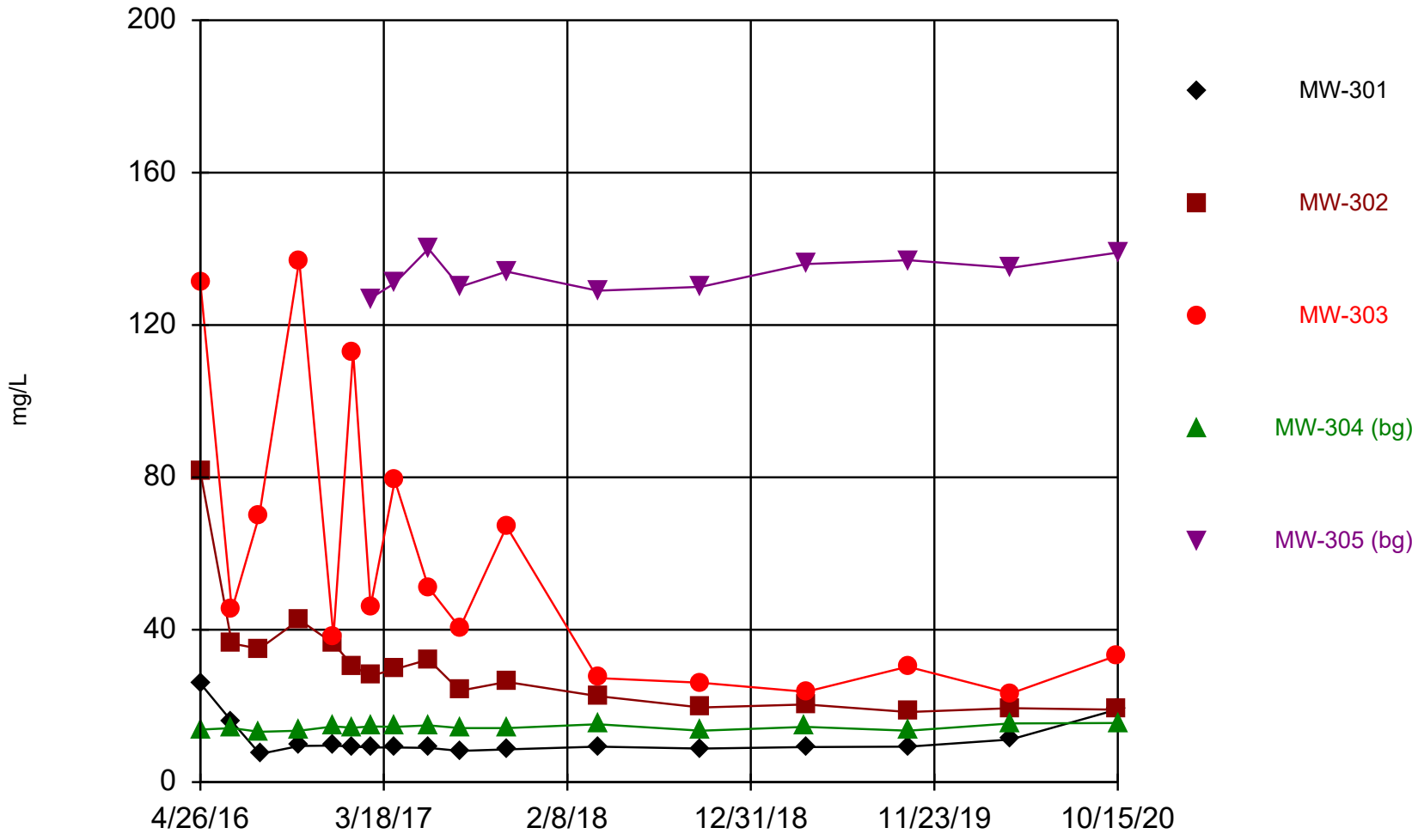
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/1/2020 2:06 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	<2 (U)	1.1 (J)	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		0.75	0.6		
5/20/2020		0.7			
10/13/2020	0.83	0.82	0.7		
10/15/2020				0.58	0.72

Sulfate



Time Series Analysis Run 12/1/2020 2:03 PM View: I-43 LF Detection Monitoring

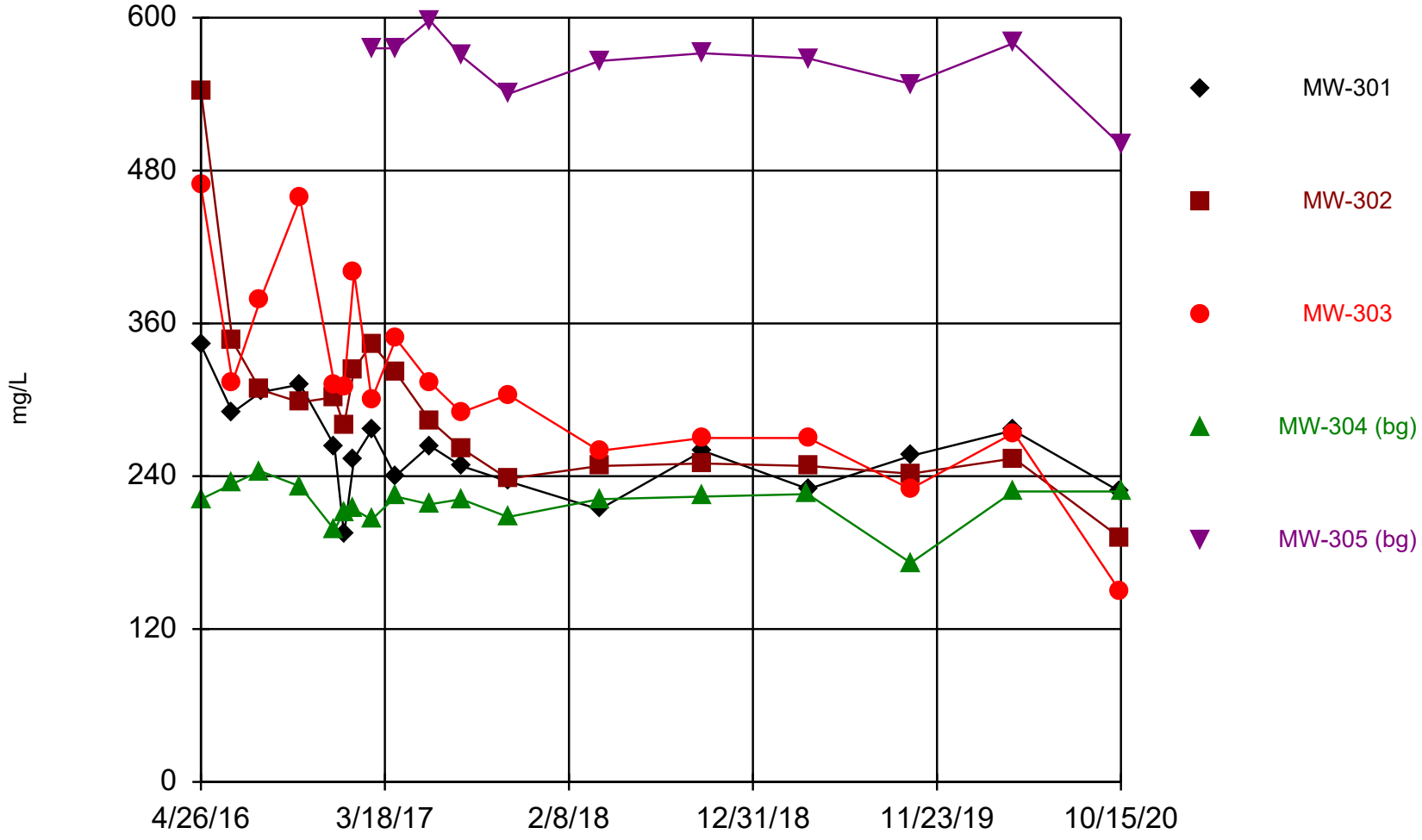
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/1/2020 2:06 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	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

Total Dissolved Solids



Time Series Analysis Run 12/1/2020 2:03 PM View: I-43 LF Detection Monitoring

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

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 12/1/2020 2:06 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	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

Attachment 2

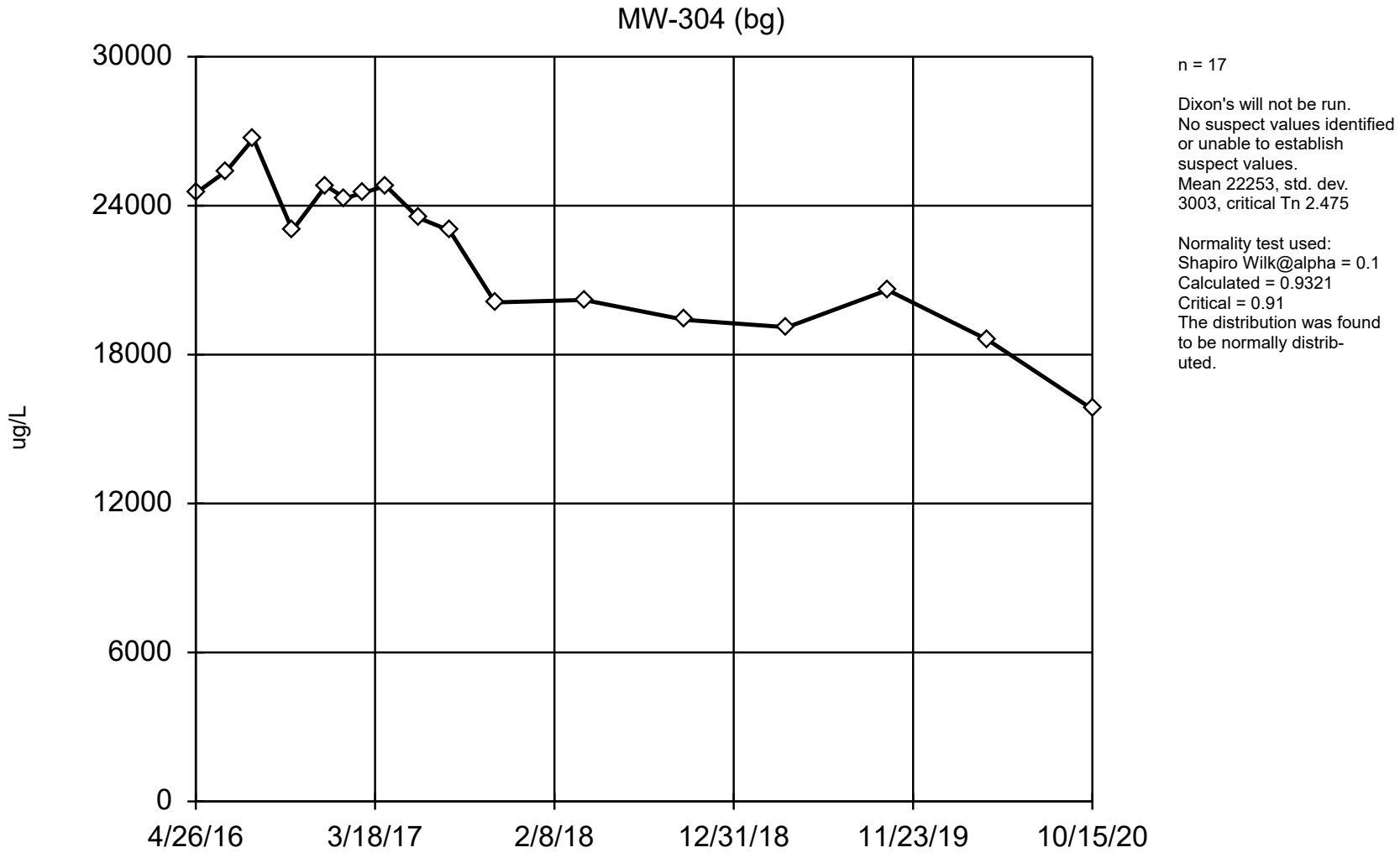
Outlier Analysis – Interwell

Outlier Analysis

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 12/30/2020, 11:46 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	17	22253	3003	normal	ShapiroWilk
Calcium (ug/L)	MW-305 (bg)	No	n/a	n/a	EPA 1989	0.05	11	90500	8041	normal	ShapiroWilk
Chloride (mg/L)	MW-304 (bg)	No	n/a	n/a	NP (nrm)	NaN	17	2.376	0.9934	unknown	ShapiroWilk
Chloride (mg/L)	MW-305 (bg)	No	n/a	n/a	EPA 1989	0.05	11	22.35	1.416	normal	ShapiroWilk
Field pH (Std. Units)	**MW-304 (bg)**	**Yes**	**6.29**	**8/9/2016**	**Dixon`s**	**0.05**	**17**	**7.931**	**0.4529**	**normal**	**ShapiroWilk**
Field pH (Std. Units)	MW-305 (bg)	No	n/a	n/a	EPA 1989	0.05	11	7.584	0.1368	normal	ShapiroWilk
Fluoride (mg/L)	**MW-304 (bg)**	**Yes**	**0.75**	**4/7/2020**	**Dixon`s**	**0.05**	**17**	**0.5329**	**0.06944**	**normal**	**ShapiroWilk**
Fluoride (mg/L)	MW-305 (bg)	No	n/a	n/a	EPA 1989	0.05	11	0.6664	0.05853	normal	ShapiroWilk
Sulfate (mg/L)	MW-304 (bg)	No	n/a	n/a	EPA 1989	0.05	17	14.33	0.6835	normal	ShapiroWilk
Sulfate (mg/L)	MW-305 (bg)	No	n/a	n/a	EPA 1989	0.05	11	133.5	4.321	normal	ShapiroWilk
Total Dissolved Solids (mg/L)	**MW-304 (bg)**	**Yes**	**172**	**10/8/2019**	**Dixon`s**	**0.05**	**18**	**218.6**	**15.94**	**normal**	**ShapiroWilk**
Total Dissolved Solids (mg/L)	**MW-305 (bg)**	**Yes**	**500**	**10/15/2020**	**Dixon`s**	**0.05**	**11**	**563.1**	**25.96**	**normal**	**ShapiroWilk**

EPA Screening (suspected outliers for Dixon's Test)



Constituent: Calcium Analysis Run 12/30/2020 11:44 PM View: I-43 LF Detection Monitoring

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

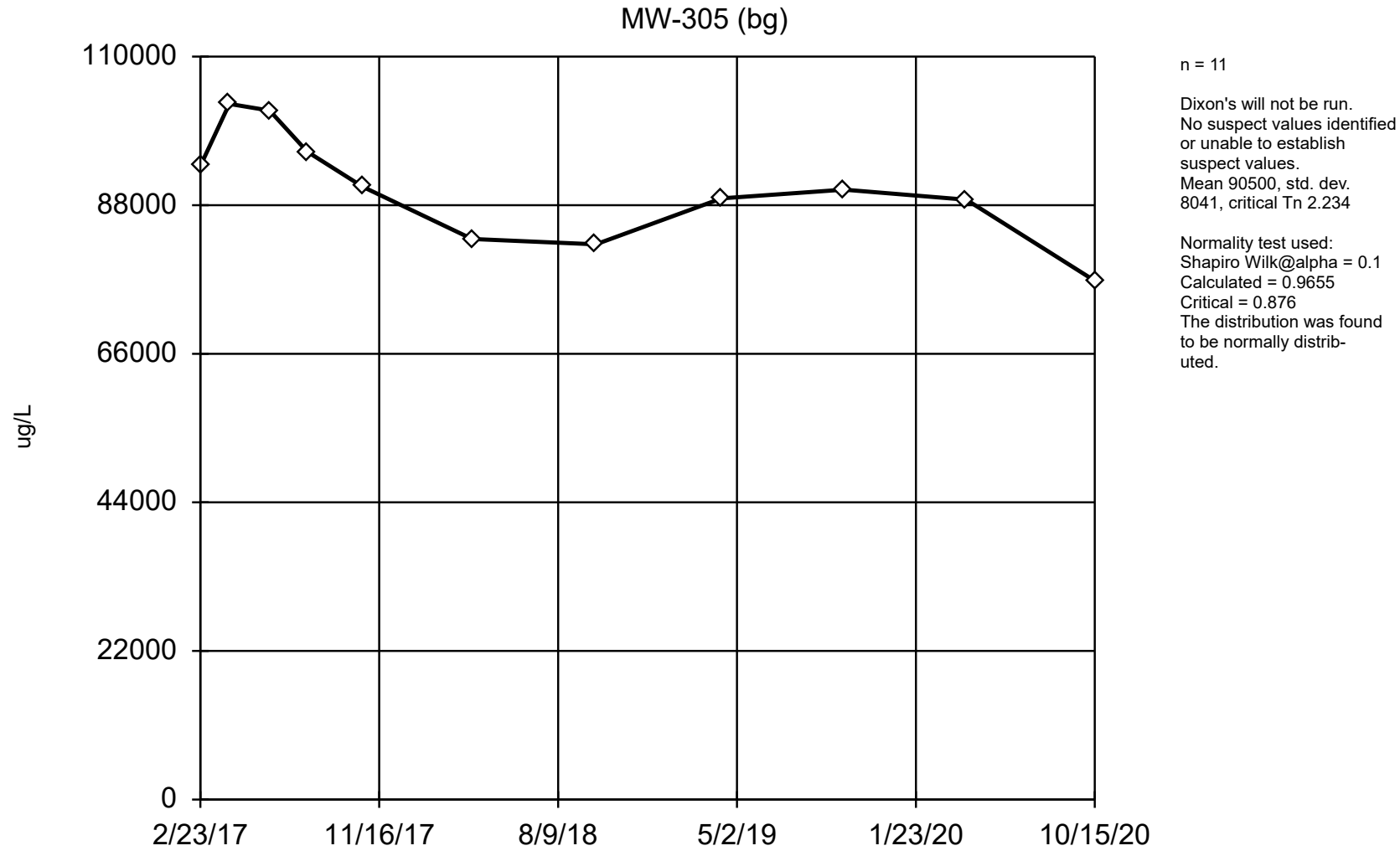
EPA 1989 Outlier Screening

Constituent: Calcium (ug/L) Analysis Run 12/30/2020 11:46 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

EPA Screening (suspected outliers for Dixon's Test)



Constituent: Calcium Analysis Run 12/30/2020 11:44 PM View: I-43 LF Detection Monitoring

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

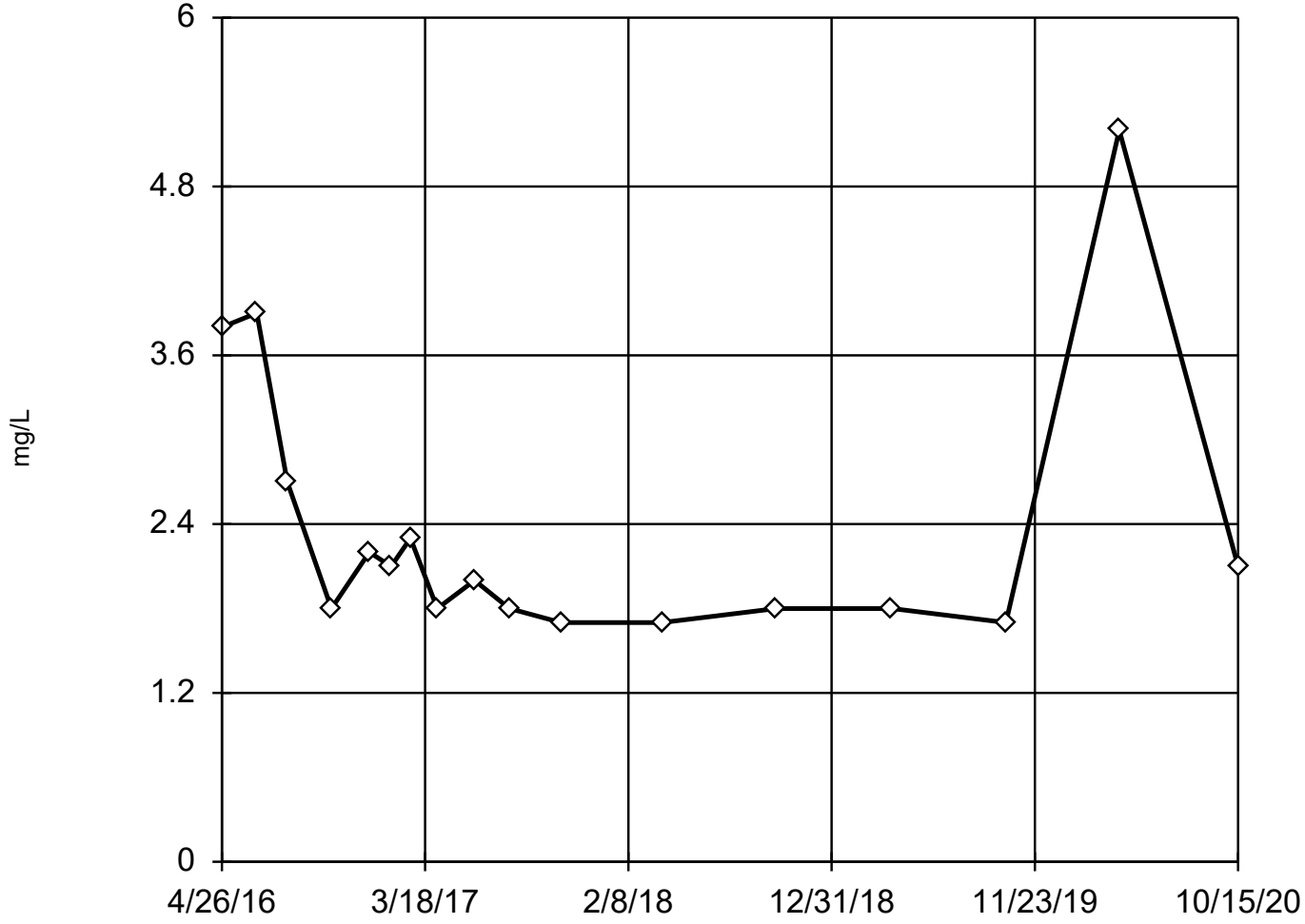
EPA 1989 Outlier Screening

Constituent: Calcium (ug/L) Analysis Run 12/30/2020 11:46 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

Tukey's Outlier Screening

MW-304 (bg)



n = 17

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 = 6.613, low cutoff = 0.6783, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 12/30/2020 11:44 PM View: I-43 LF Detection Monitoring

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

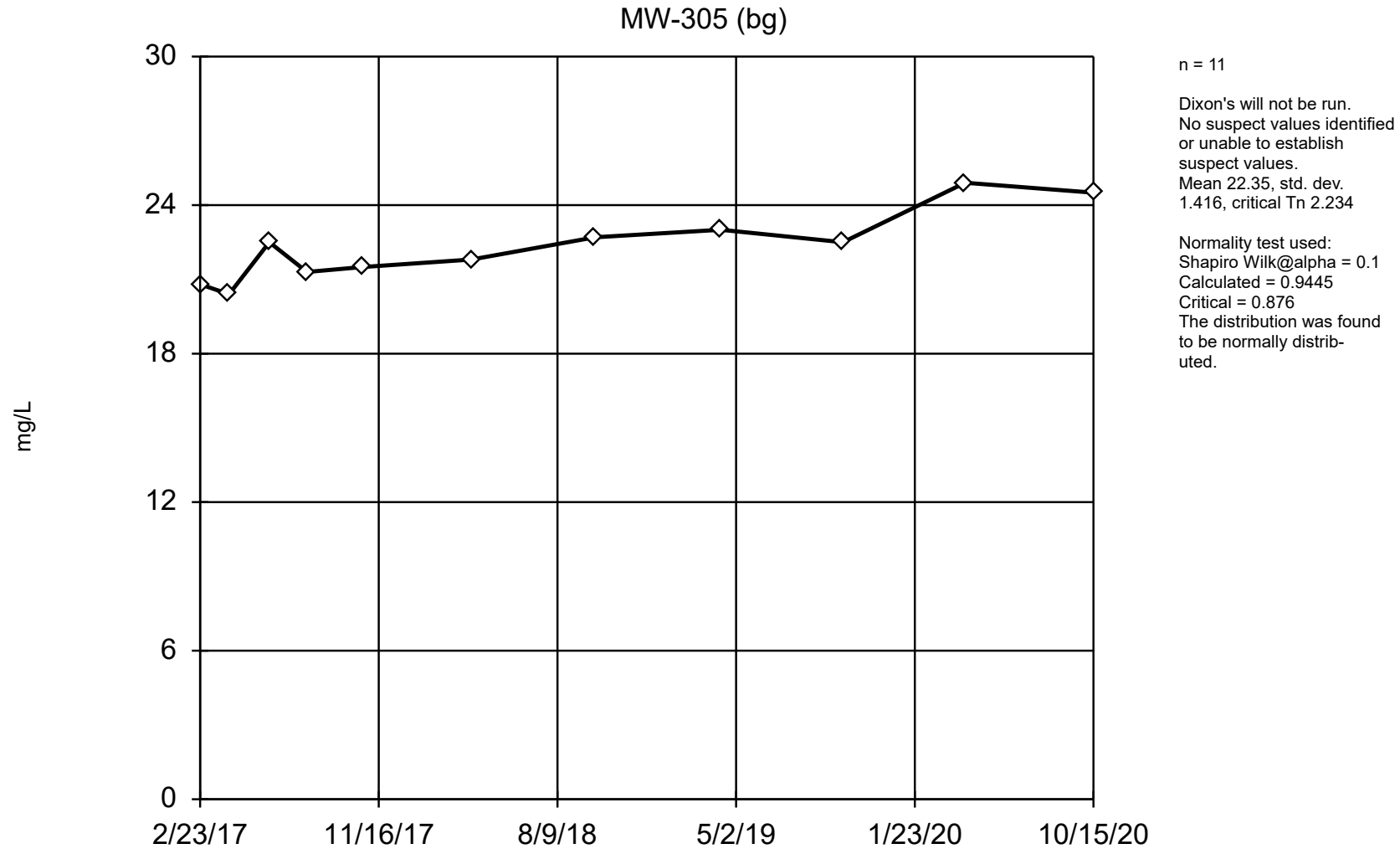
Tukey's Outlier Screening

Constituent: Chloride (mg/L) Analysis Run 12/30/2020 11:46 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

EPA Screening (suspected outliers for Dixon's Test)



Constituent: Chloride Analysis Run 12/30/2020 11:44 PM View: I-43 LF Detection Monitoring

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

EPA 1989 Outlier Screening

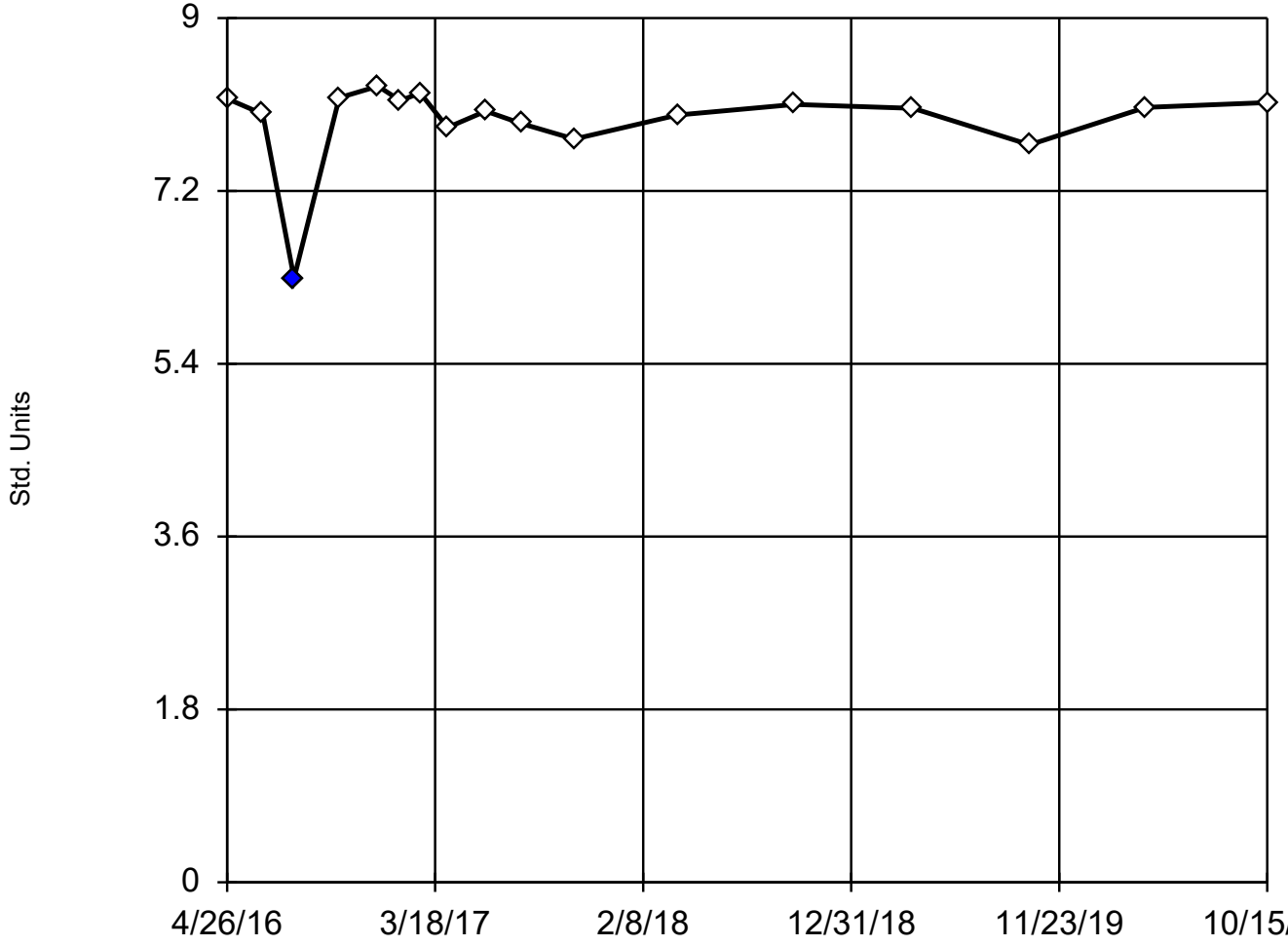
Constituent: Chloride (mg/L) Analysis Run 12/30/2020 11:46 PM View: I-43 LF Detection Monitoring

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

Dixon's Outlier Test

MW-304 (bg)



n = 17

Statistical outlier is drawn as solid.
Testing for 1 low outlier.
Mean = 7.931.
Std. Dev. = 0.4529.
6.29 (O): c = 0.7713
tabl = 0.49.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9483
Critical = 0.906
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Field pH Analysis Run 12/30/2020 11:44 PM View: I-43 LF Detection Monitoring

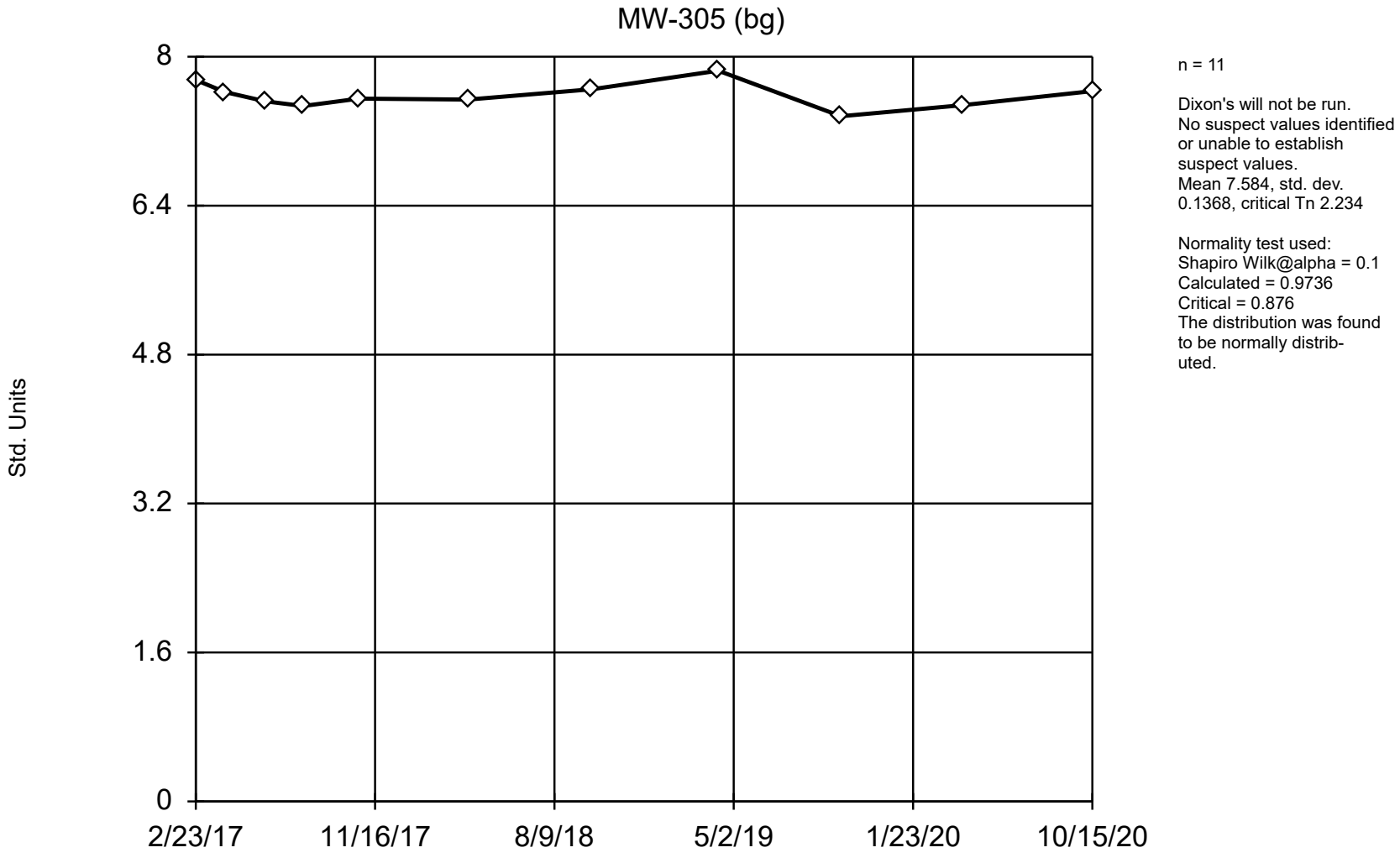
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Dixon's Outlier Test

Constituent: Field pH (Std. Units) Analysis Run 12/30/2020 11:46 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 (O)
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

EPA Screening (suspected outliers for Dixon's Test)



Constituent: Field pH Analysis Run 12/30/2020 11:45 PM View: I-43 LF Detection Monitoring

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

EPA 1989 Outlier Screening

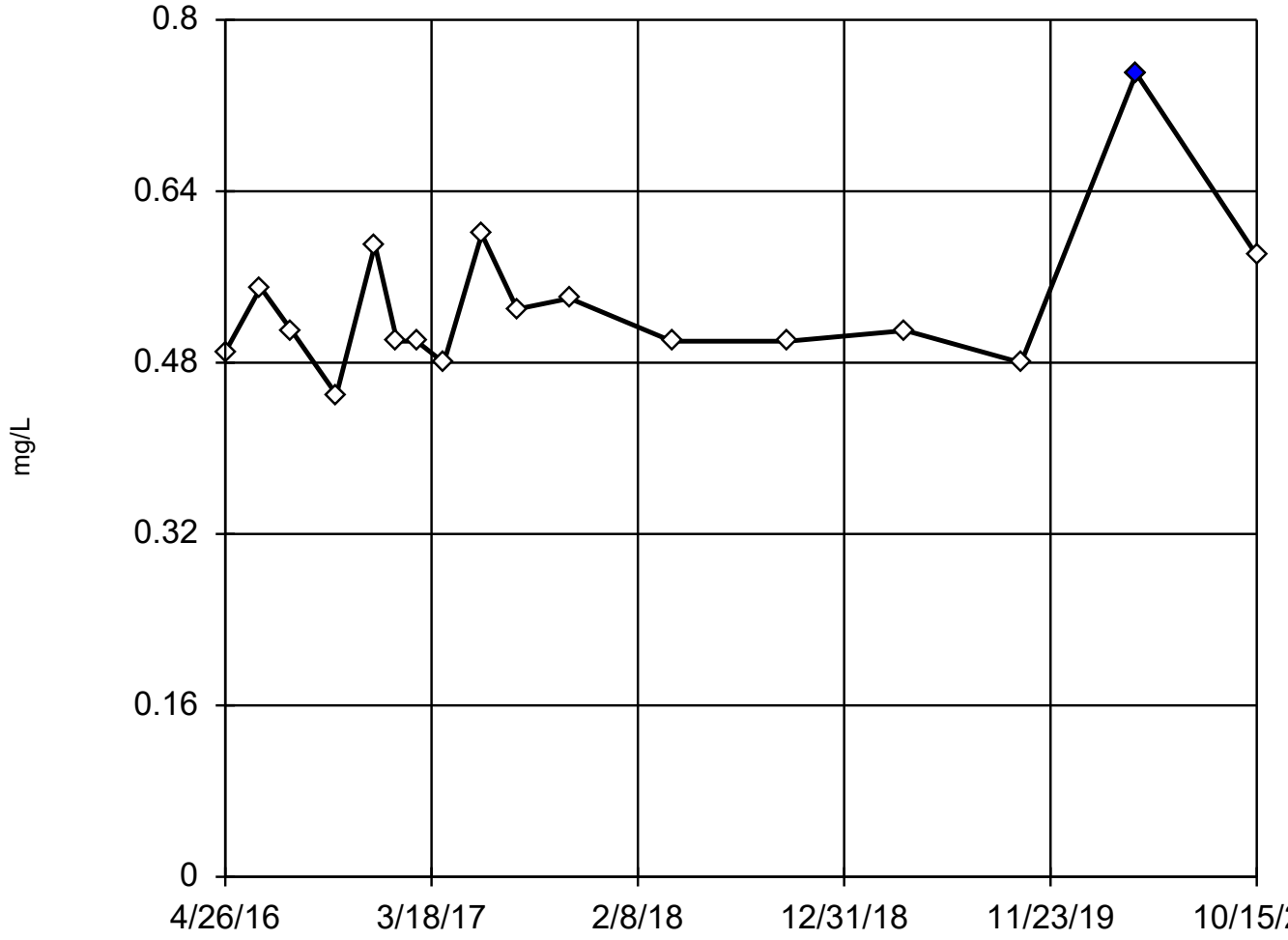
Constituent: Field pH (Std. Units) Analysis Run 12/30/2020 11:46 PM View: I-43 LF Detection Monitoring

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

Dixon's Outlier Test

MW-304 (bg)



n = 17

Statistical outlier is drawn as solid.
Testing for 1 high outlier.
Mean = 0.5329.
Std. Dev. = 0.06944.
0.75: c = 0.5926
tabl = 0.49.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9268
Critical = 0.906
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Fluoride Analysis Run 12/30/2020 11:45 PM View: I-43 LF Detection Monitoring

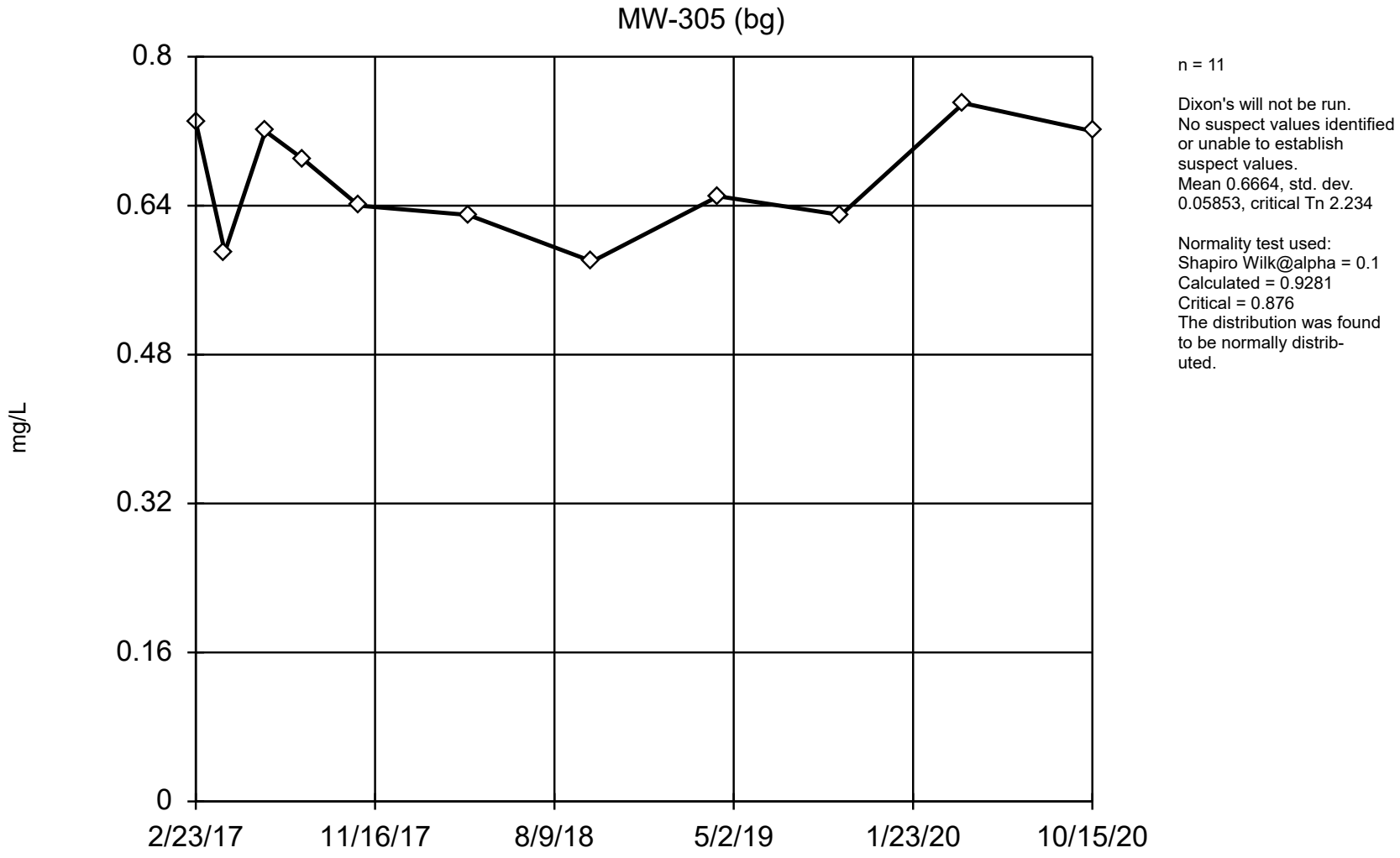
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Dixon's Outlier Test

Constituent: Fluoride (mg/L) Analysis Run 12/30/2020 11:46 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

EPA Screening (suspected outliers for Dixon's Test)



Constituent: Fluoride Analysis Run 12/30/2020 11:45 PM View: I-43 LF Detection Monitoring

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

EPA 1989 Outlier Screening

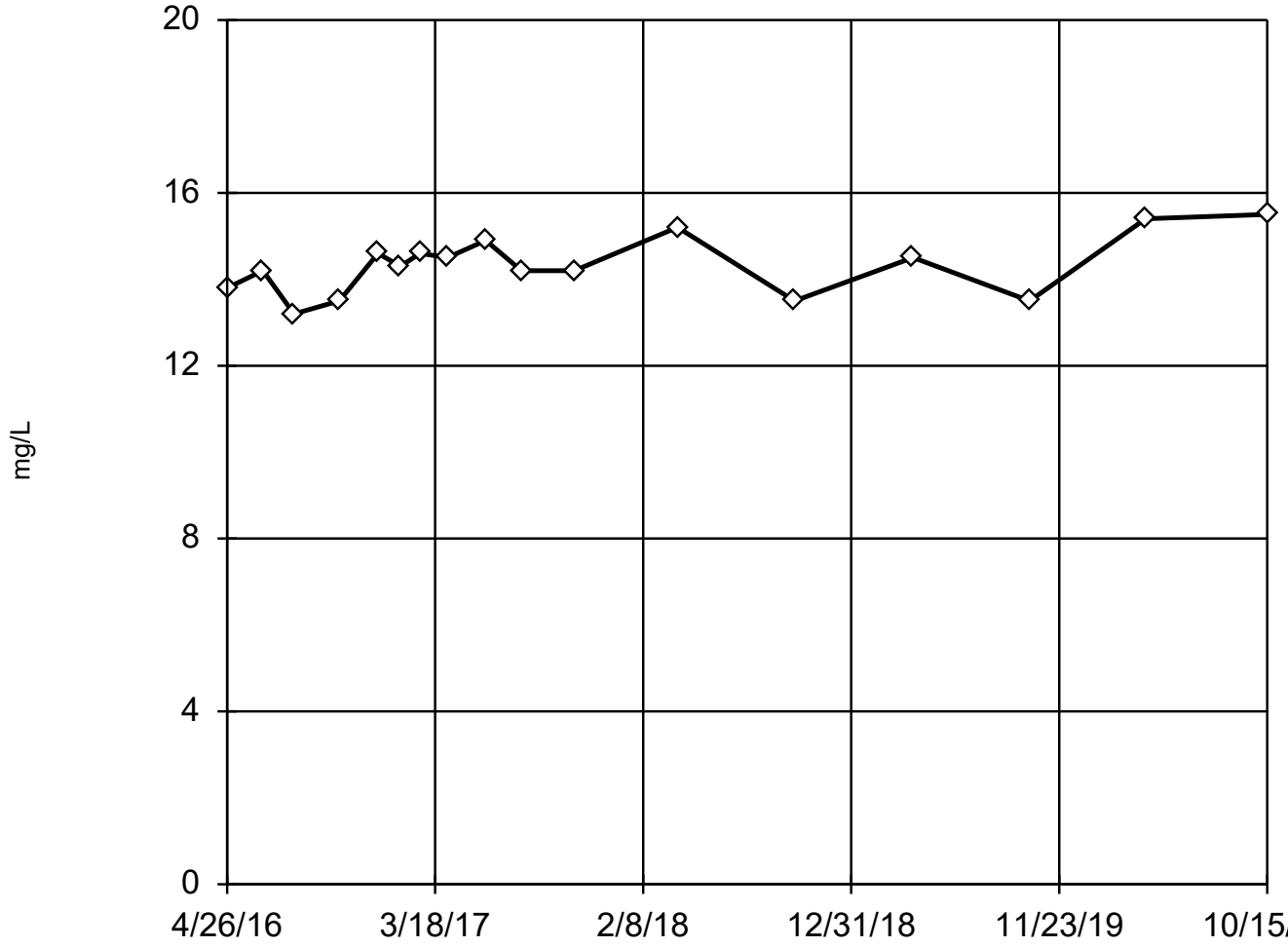
Constituent: Fluoride (mg/L) Analysis Run 12/30/2020 11:46 PM View: I-43 LF Detection Monitoring

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

EPA Screening (suspected outliers for Dixon's Test)

MW-304 (bg)



n = 17

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 14.33, std. dev. 0.6835, critical Tn 2.475

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9561
Critical = 0.91
The distribution was found to be normally distrib-uted.

Constituent: Sulfate Analysis Run 12/30/2020 11:45 PM View: I-43 LF Detection Monitoring

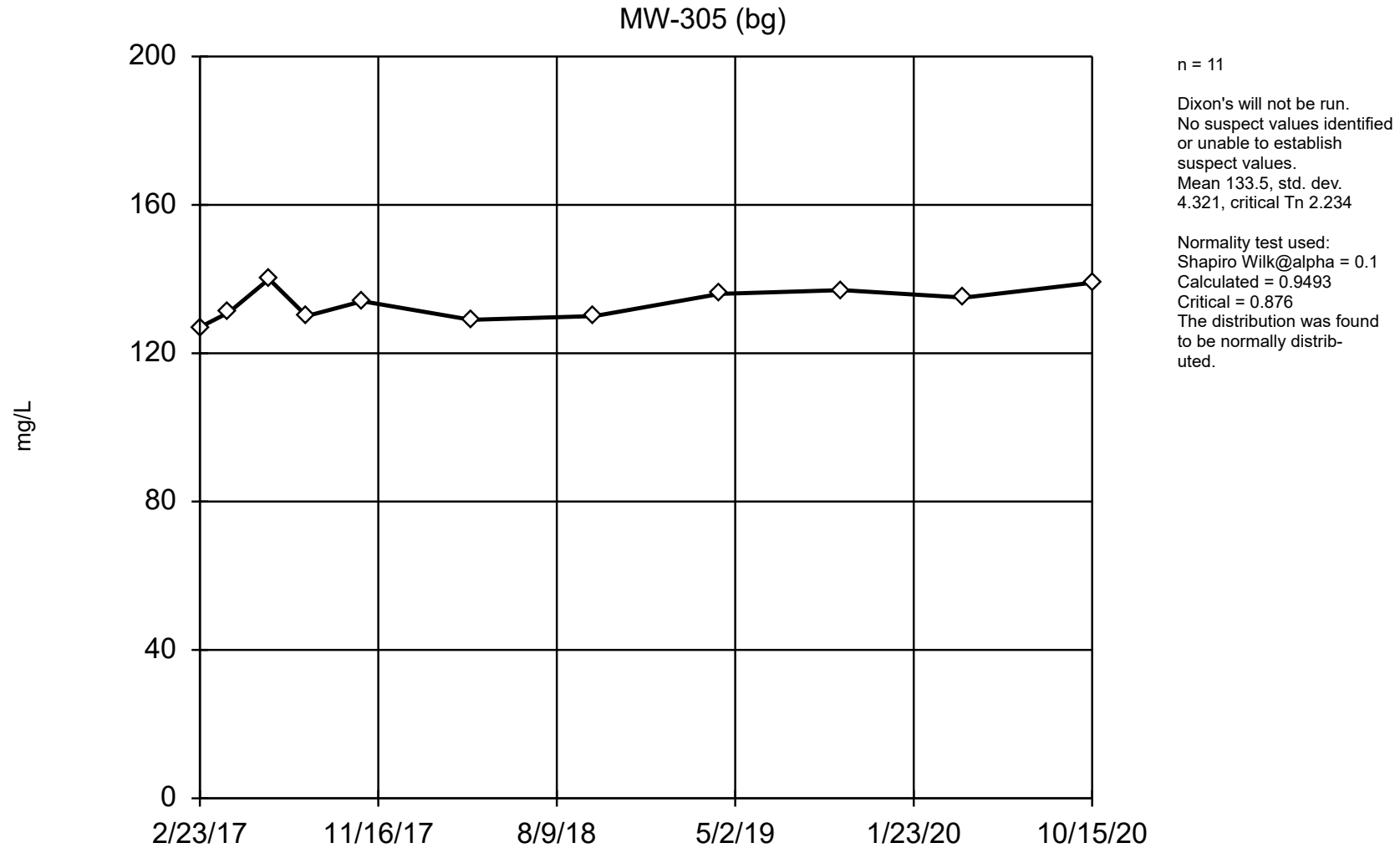
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

EPA 1989 Outlier Screening

Constituent: Sulfate (mg/L) Analysis Run 12/30/2020 11:46 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

EPA Screening (suspected outliers for Dixon's Test)



Constituent: Sulfate Analysis Run 12/30/2020 11:45 PM View: I-43 LF Detection Monitoring

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

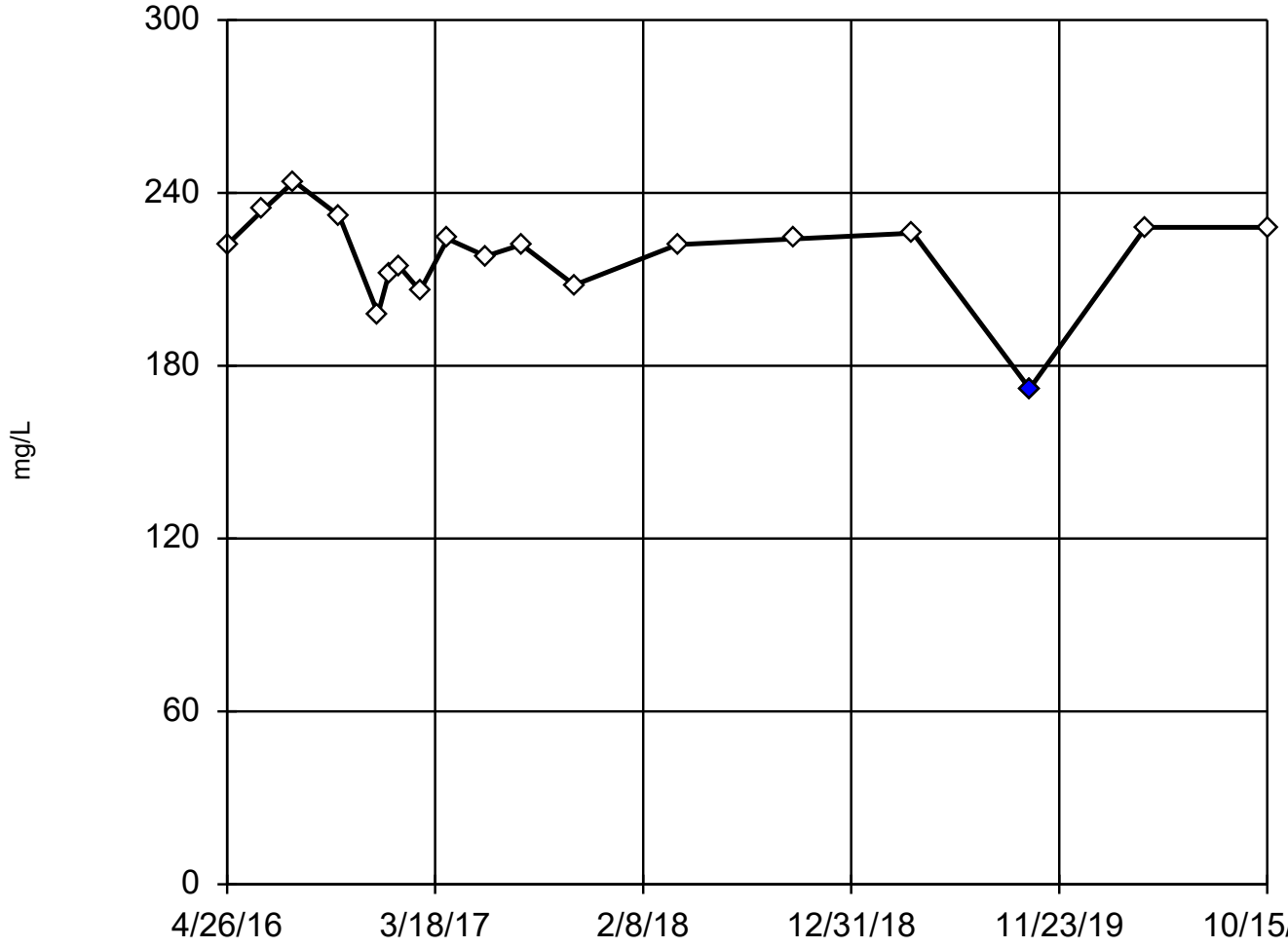
EPA 1989 Outlier Screening

Constituent: Sulfate (mg/L) Analysis Run 12/30/2020 11:46 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

Dixon's Outlier Test

MW-304 (bg)



n = 18

Statistical outlier is drawn as solid.
Testing for 1 low outlier.
Mean = 218.6.
Std. Dev. = 15.94.
172: c = 0.5667
tabl = 0.475.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.98
Critical = 0.91
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Total Dissolved Solids Analysis Run 12/30/2020 11:45 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Dixon's Outlier Test

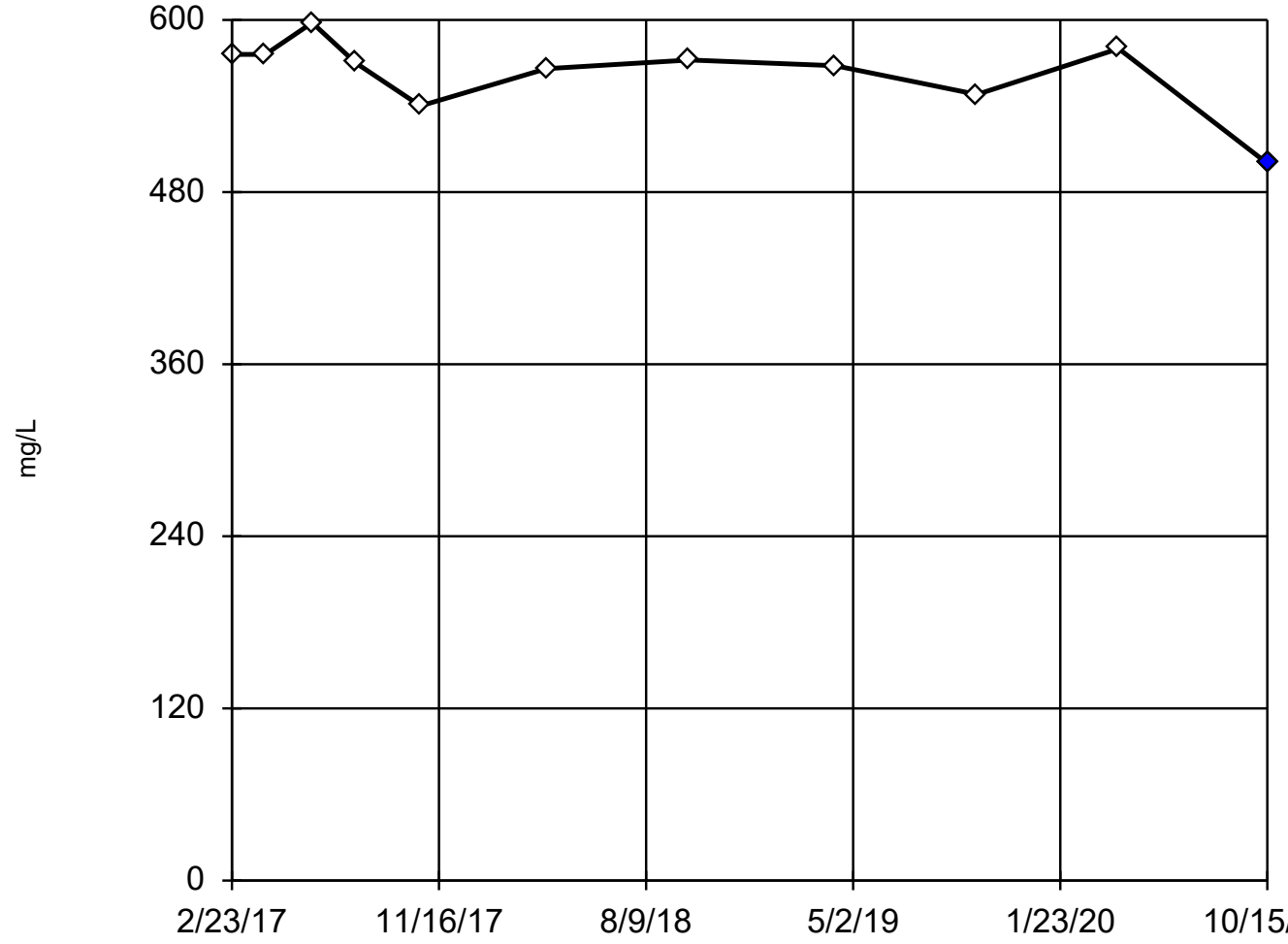
Constituent: Total Dissolved Solids (mg/L) Analysis Run 12/30/2020 11:46 PM View: I-43 LF Detection Monitoring

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

Dixon's Outlier Test

MW-305 (bg)



n = 11

Statistical outlier is drawn as solid.
Testing for 1 low outlier.
Mean = 563.1.
Std. Dev. = 25.96.
500: c = 0.6
tabl = 0.576.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9366
Critical = 0.869
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Total Dissolved Solids Analysis Run 12/30/2020 11:45 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 12/30/2020 11:46 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 (O)

Attachment 3

Outlier Analysis – Intrawell

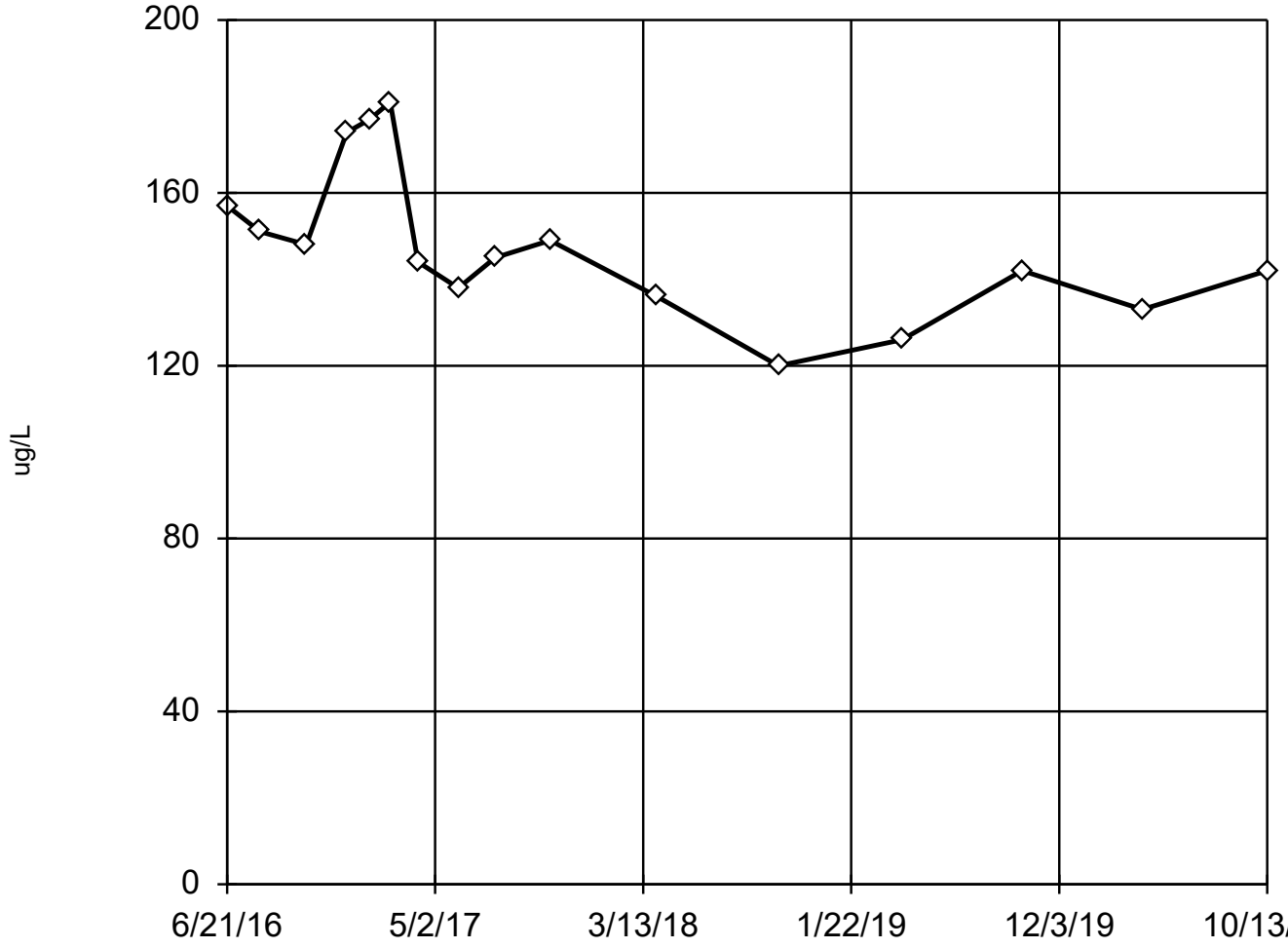
Outlier Analysis

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 12/1/2020, 2:52 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Boron (ug/L)	MW-301	No	n/a	n/a	EPA 1989	0.05	16	147.7	17.38	normal	ShapiroWilk
Boron (ug/L)	MW-302	No	n/a	n/a	EPA 1989	0.05	16	127.8	10.47	ln(x)	ShapiroWilk
Boron (ug/L)	MW-303	No	n/a	n/a	EPA 1989	0.05	17	89.57	5.31	normal	ShapiroWilk

EPA Screening (suspected outliers for Dixon's Test)

MW-301



n = 16

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 147.7, std. dev. 17.38, critical Tn 2.443

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9325
Critical = 0.906
The distribution was found to be normally distrib-uted.

Constituent: Boron Analysis Run 12/1/2020 2:51 PM View: I-43 LF Detection Monitoring

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

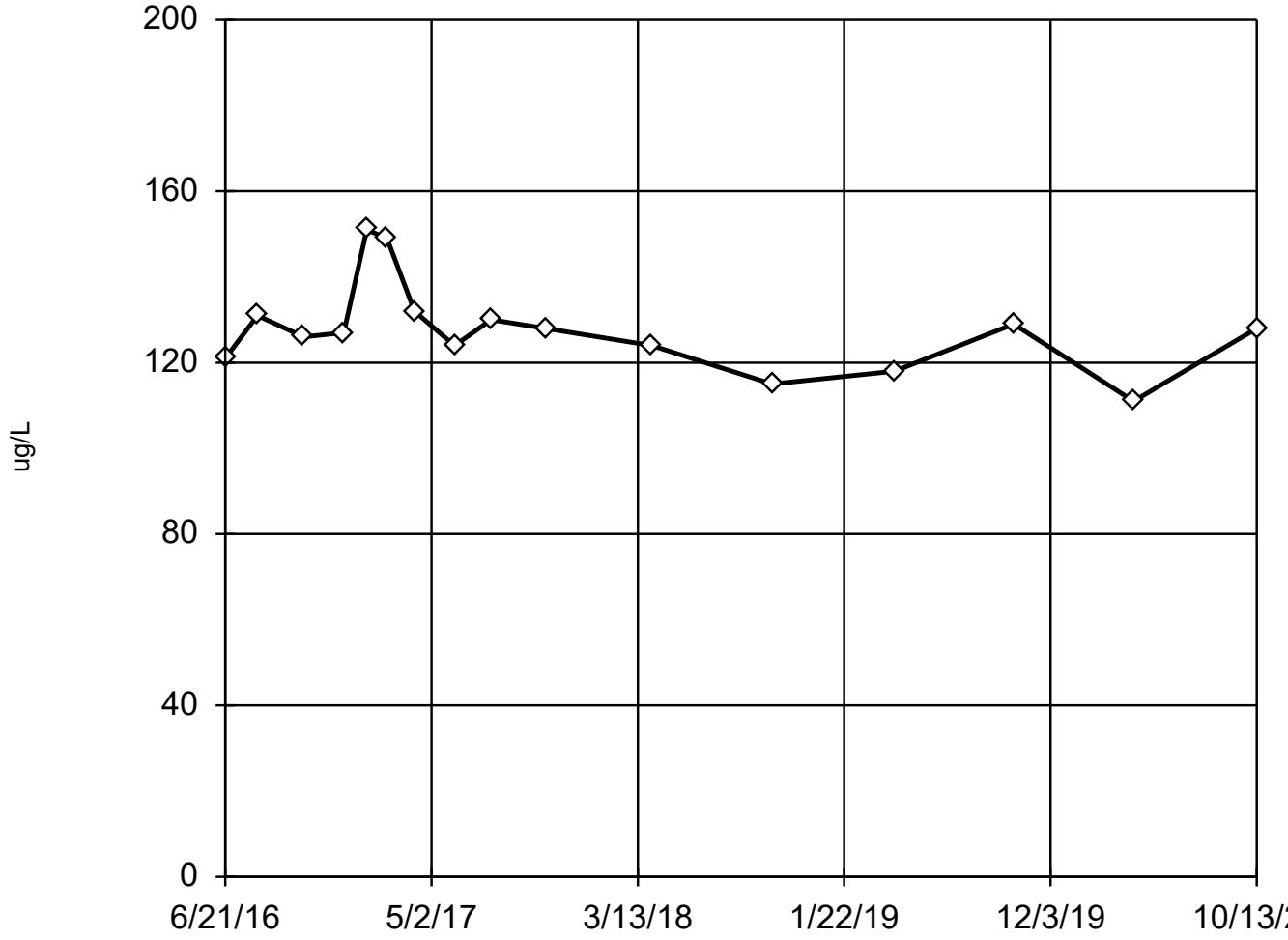
EPA 1989 Outlier Screening

Constituent: Boron (ug/L) Analysis Run 12/1/2020 2:52 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 (R)
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

EPA Screening (suspected outliers for Dixon's Test)

MW-302



n = 16

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 127.8, std. dev. 10.47, critical Tn 2.443

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9183
Critical = 0.906 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Boron Analysis Run 12/1/2020 2:51 PM View: I-43 LF Detection Monitoring

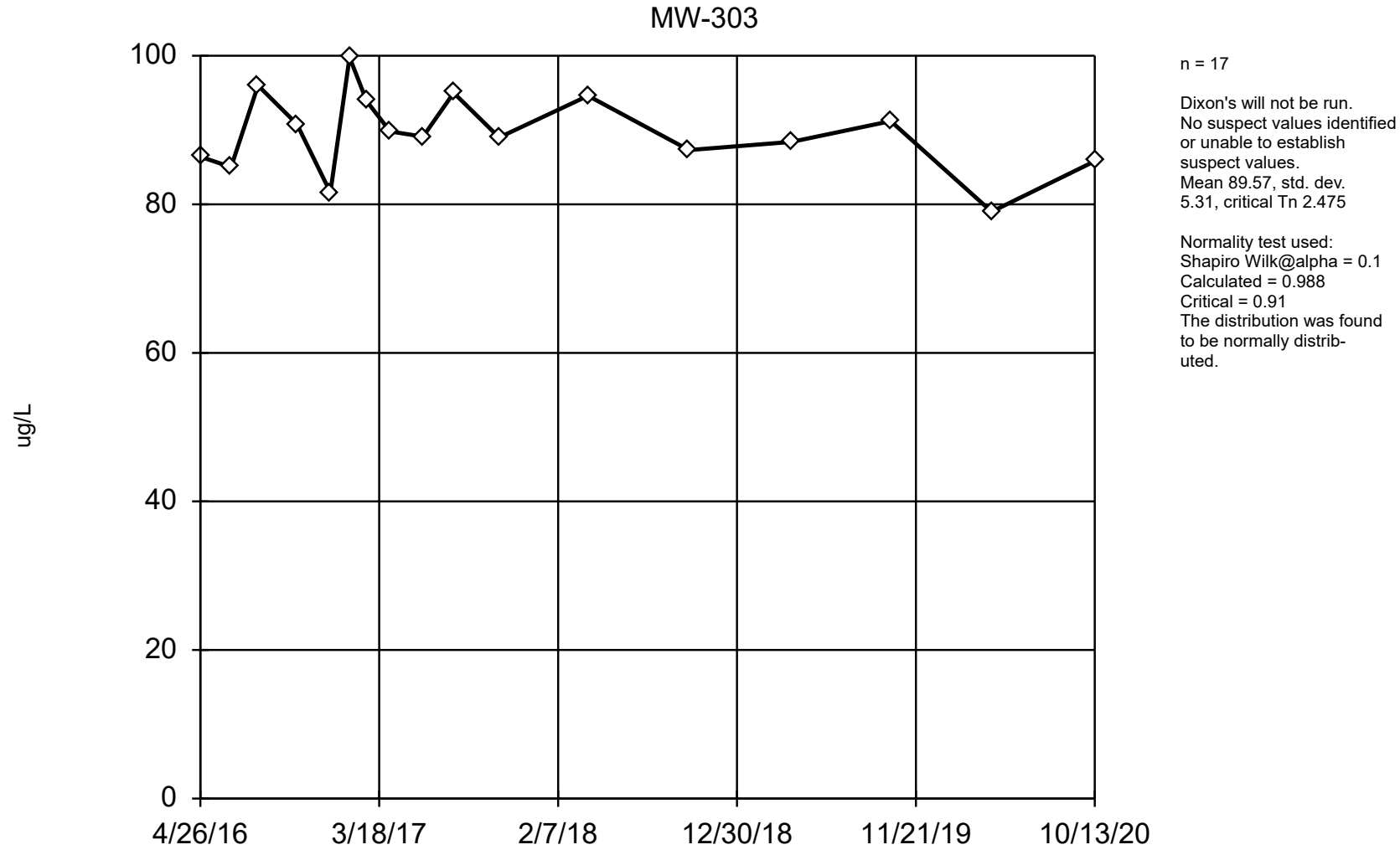
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

EPA 1989 Outlier Screening

Constituent: Boron (ug/L) Analysis Run 12/1/2020 2:52 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 (R)
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

EPA Screening (suspected outliers for Dixon's Test)



Constituent: Boron Analysis Run 12/1/2020 2:51 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 12/1/2020 2:52 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

Attachment 4

Welch's/Mann-Whitney Comparison

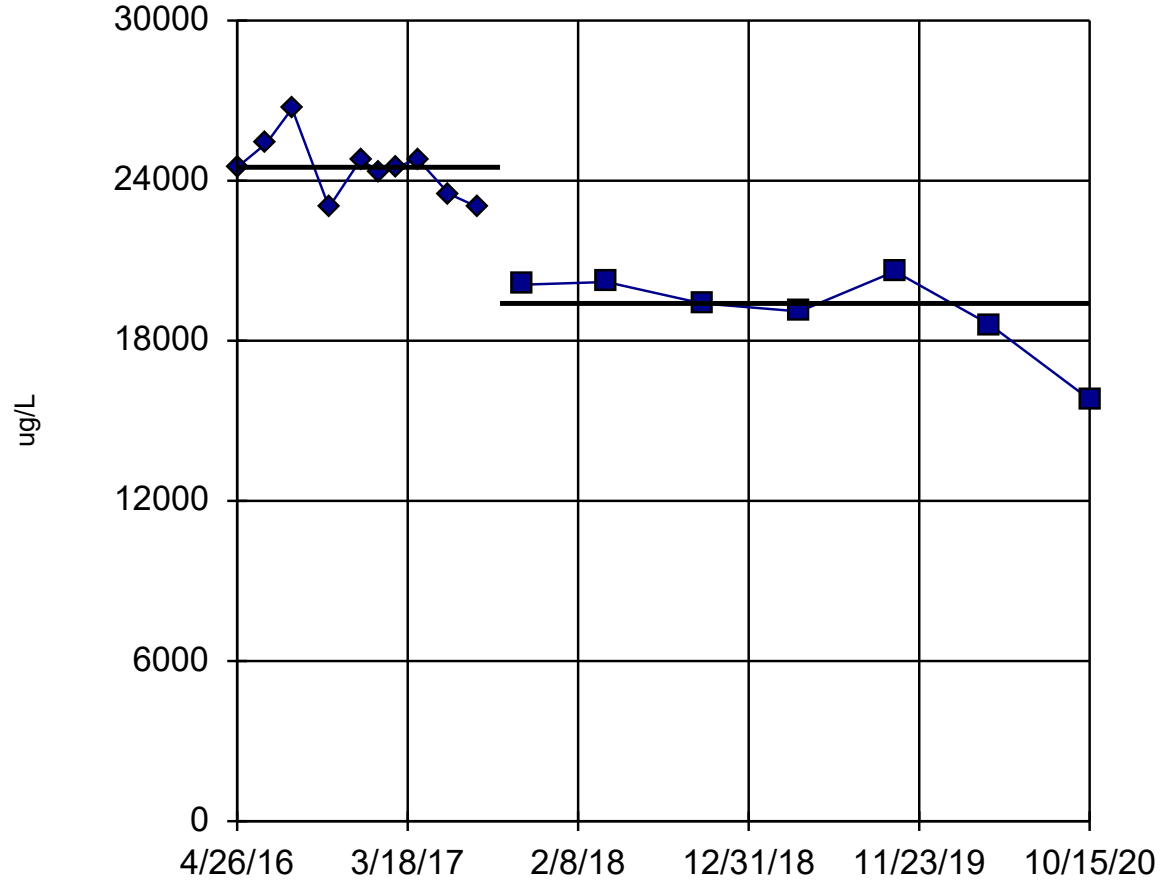
Welch's t-test/Mann-Whitney

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 1/3/2021, 5:37 PM

Constituent	Well	Calc.	0.1	0.05	0.025	0.01	Alpha	Sig.	Bg. Wells	Method
Calcium (ug/L)	MW-304 (bg)	-7.549	No	No	No	No	0.01	No	(intrawell)	Welch`s
Calcium (ug/L)	MW-305 (bg)	-4.273	No	No	No	No	0.01	No	(intrawell)	Welch`s
Chloride (mg/L)	MW-304 (bg)	-1.784	No	No	No	No	0.01	No	(intrawell)	Mann-W (normality)
Chloride (mg/L)	MW-305 (bg)	2.608	Yes	Yes	Yes	No	0.01	No	(intrawell)	Welch`s
Field pH (Std. Units)	MW-304 (bg)	-1.025	No	No	No	No	0.01	No	(intrawell)	Mann-W (normality)
Field pH (Std. Units)	MW-305 (bg)	-0.118	No	No	No	No	0.01	No	(intrawell)	Welch`s
Fluoride (mg/L)	MW-304 (bg)	0.8173	No	No	No	No	0.01	No	(intrawell)	Welch`s
Fluoride (mg/L)	MW-305 (bg)	-0....	No	No	No	No	0.01	No	(intrawell)	Welch`s
Sulfate (mg/L)	MW-304 (bg)	0.9964	No	No	No	No	0.01	No	(intrawell)	Welch`s
Sulfate (mg/L)	MW-305 (bg)	0.733	No	No	No	No	0.01	No	(intrawell)	Welch`s
Total Dissolved Solids (mg/L)	MW-304 (bg)	-0....	No	No	No	No	0.01	No	(intrawell)	Welch`s
Total Dissolved Solids (mg/L)	MW-305 (bg)	-2.208	No	No	No	No	0.01	No	(intrawell)	Welch`s

Welch's t-test

MW-304 (bg)



◆ MW-304 background

■ MW-304 compliance

background median = 24500

compliance median = 19400

t = -7.549

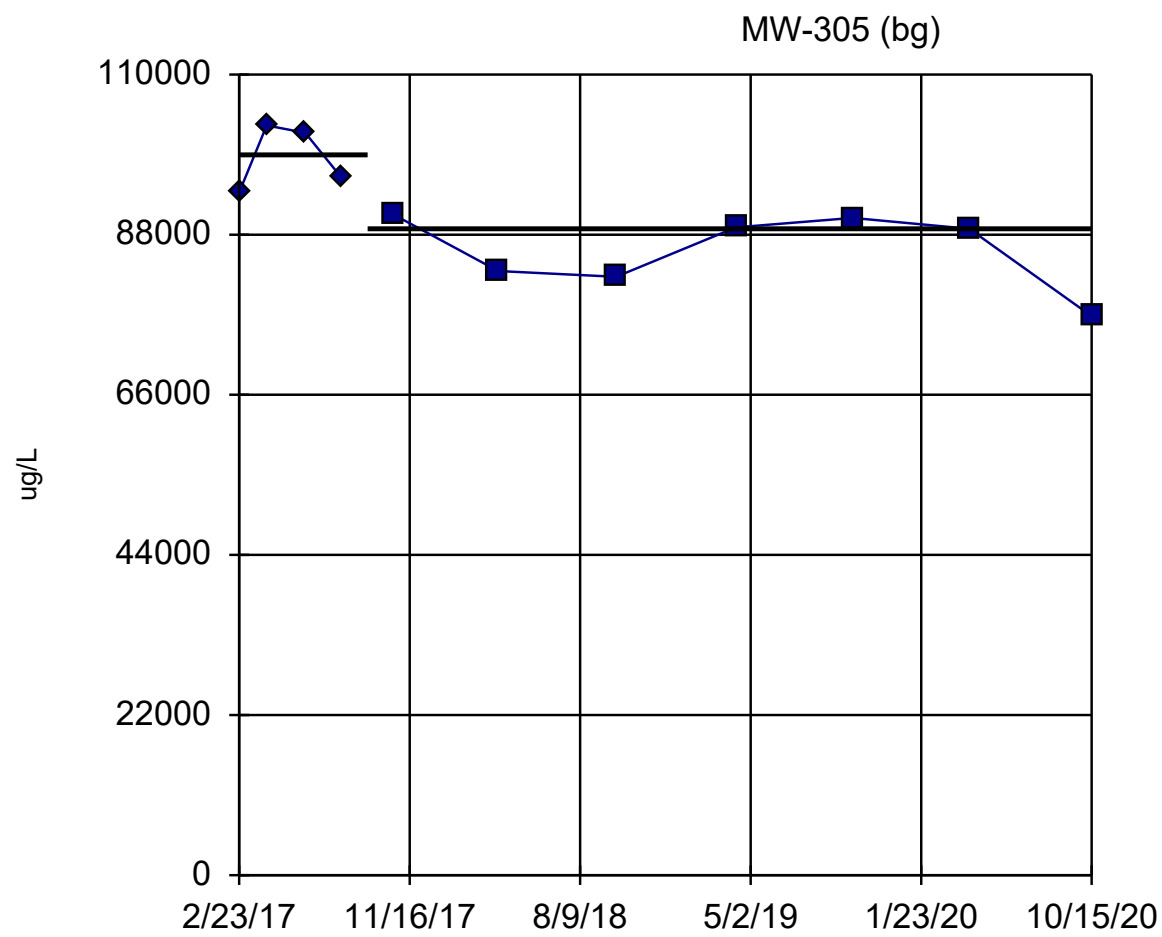
Alpha	Table	Sig.
0.1	1.372	No
0.05	1.812	No
0.025	2.228	No
0.01	2.764	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9326, critical = 0.842.

Constituent: Calcium Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

Welch's t-test



◆ MW-305 background

■ MW-305 compliance

background median = 98950

compliance median = 88800

t = -4.273

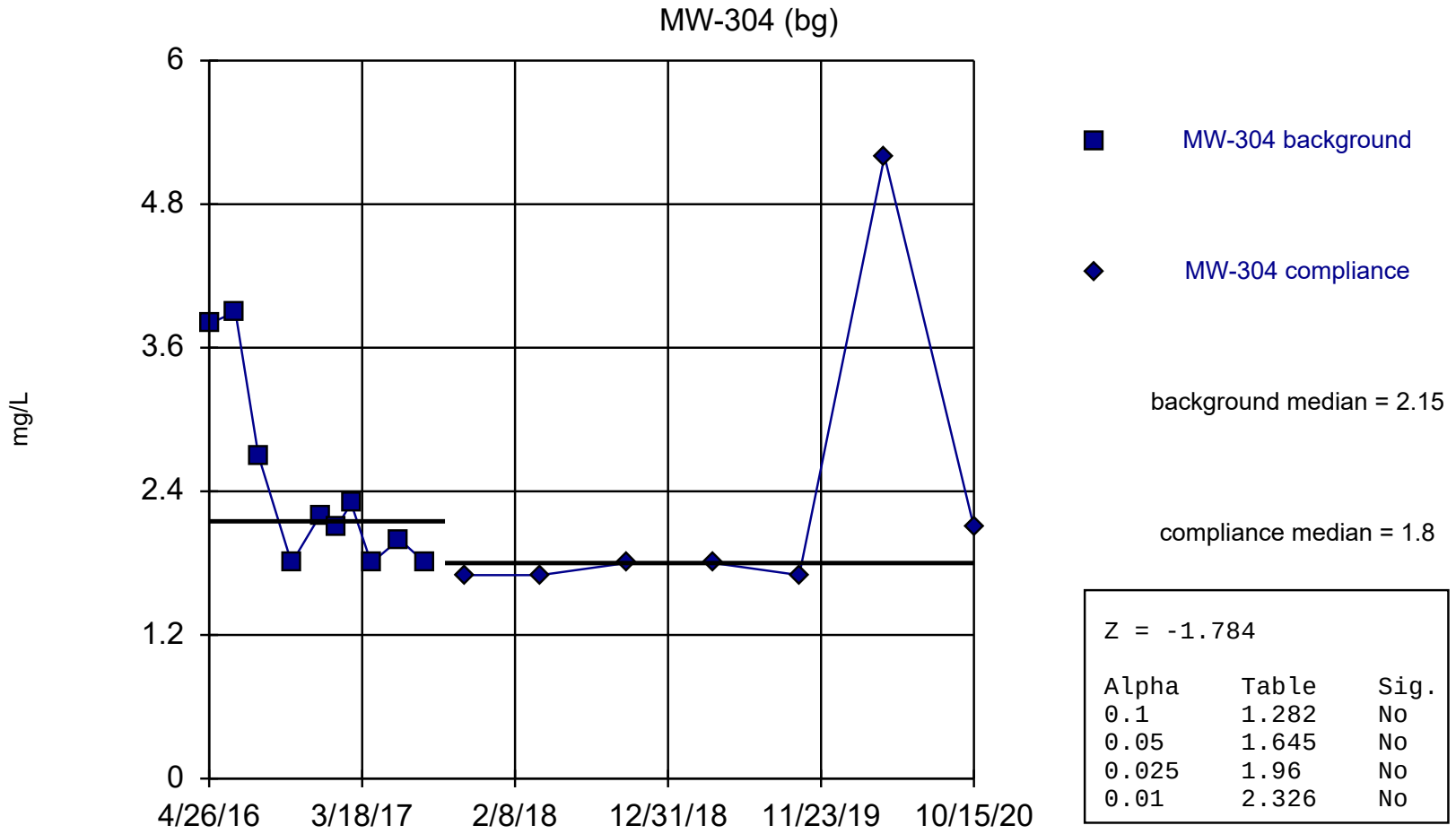
Alpha	Table	Sig.
0.1	1.415	No
0.05	1.895	No
0.025	2.365	No
0.01	2.998	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8812, critical = 0.748.

Constituent: Calcium Analysis Run 1/3/2021 5:36 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)

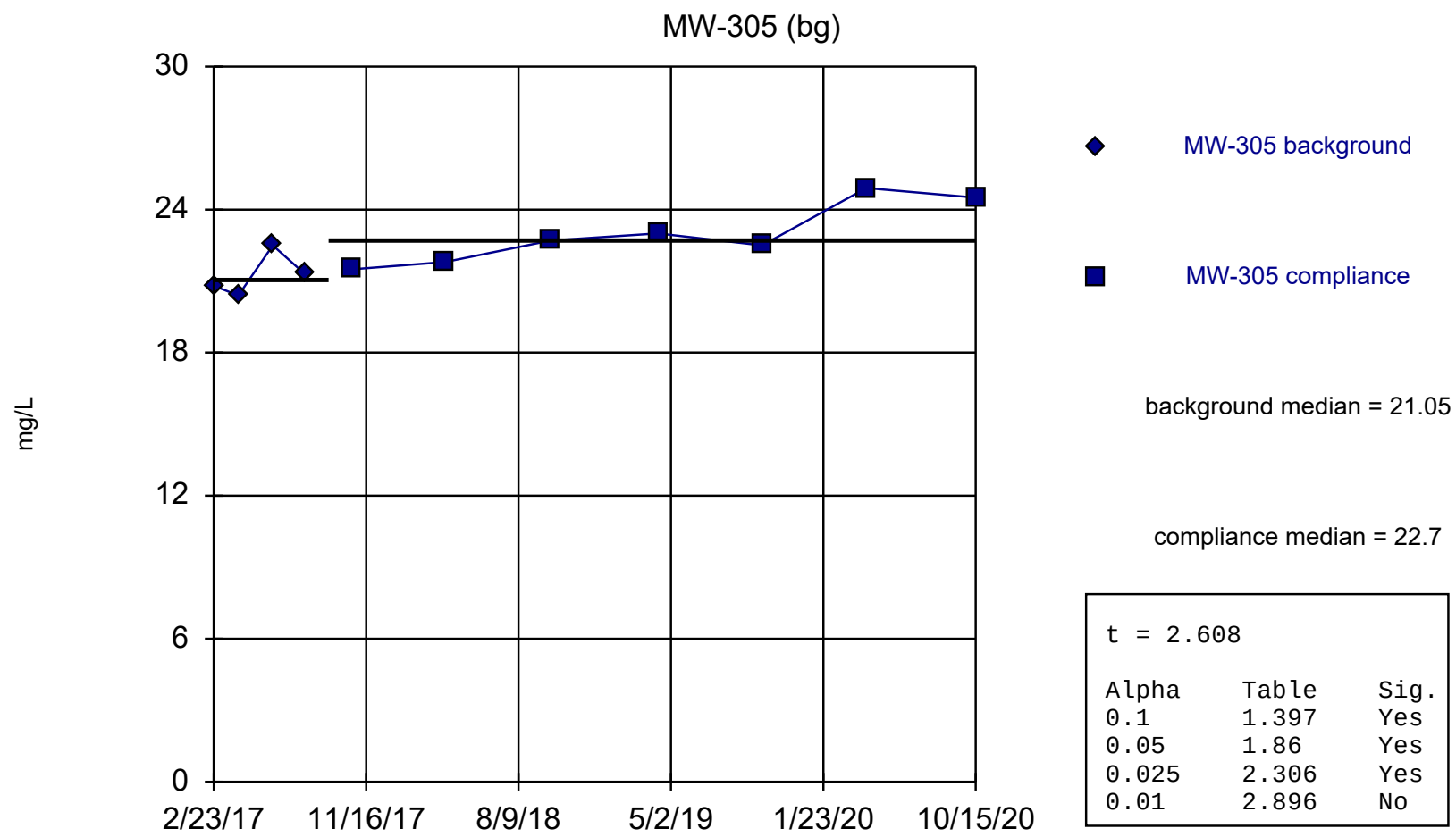


Mann-Whitney (Wilcoxon Rank Sum) used in lieu of Welch's t-test because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level.

Constituent: Chloride Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

Welch's t-test

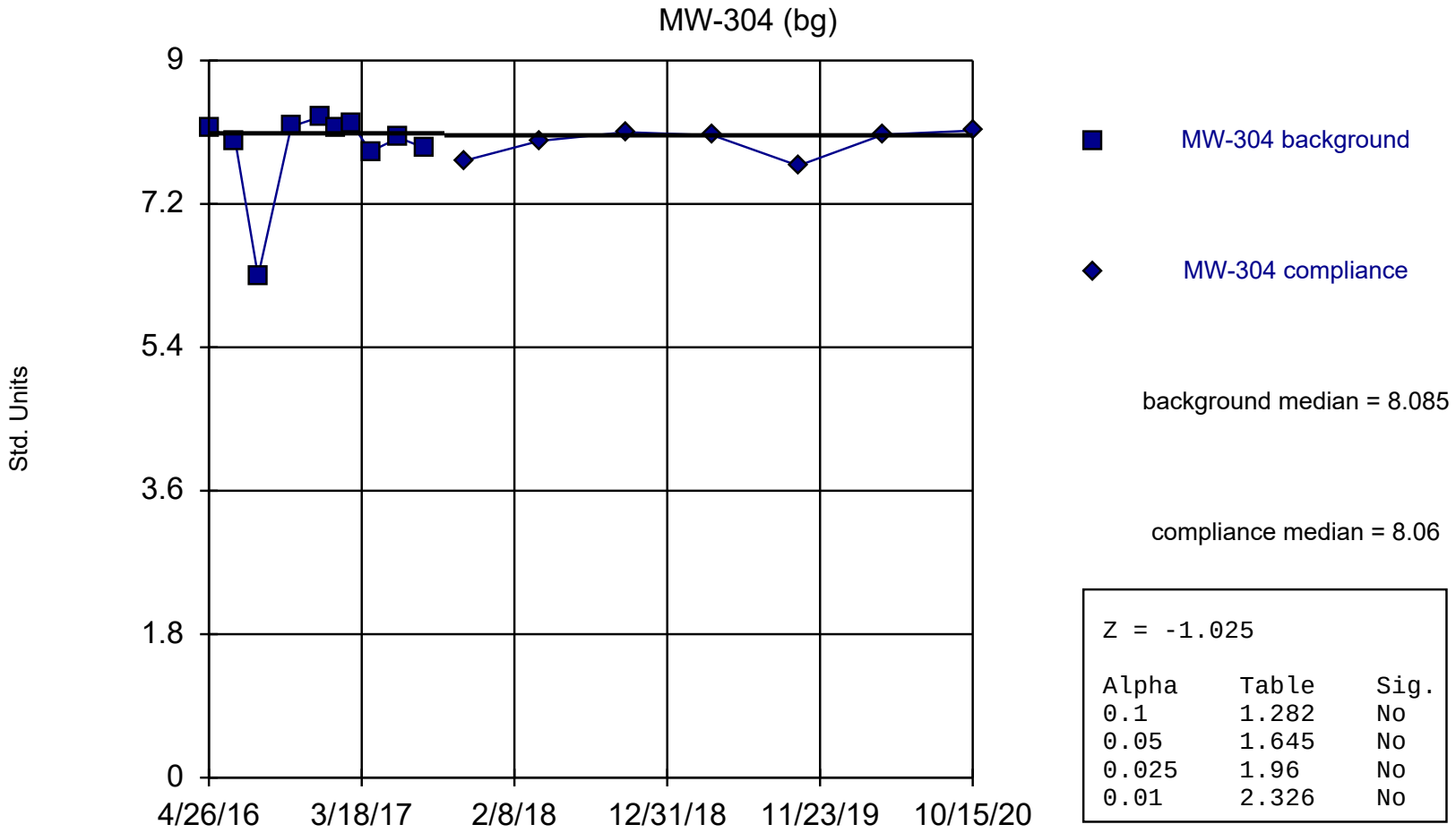


Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9364, critical = 0.748.

Constituent: Chloride Analysis Run 1/3/2021 5:36 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)

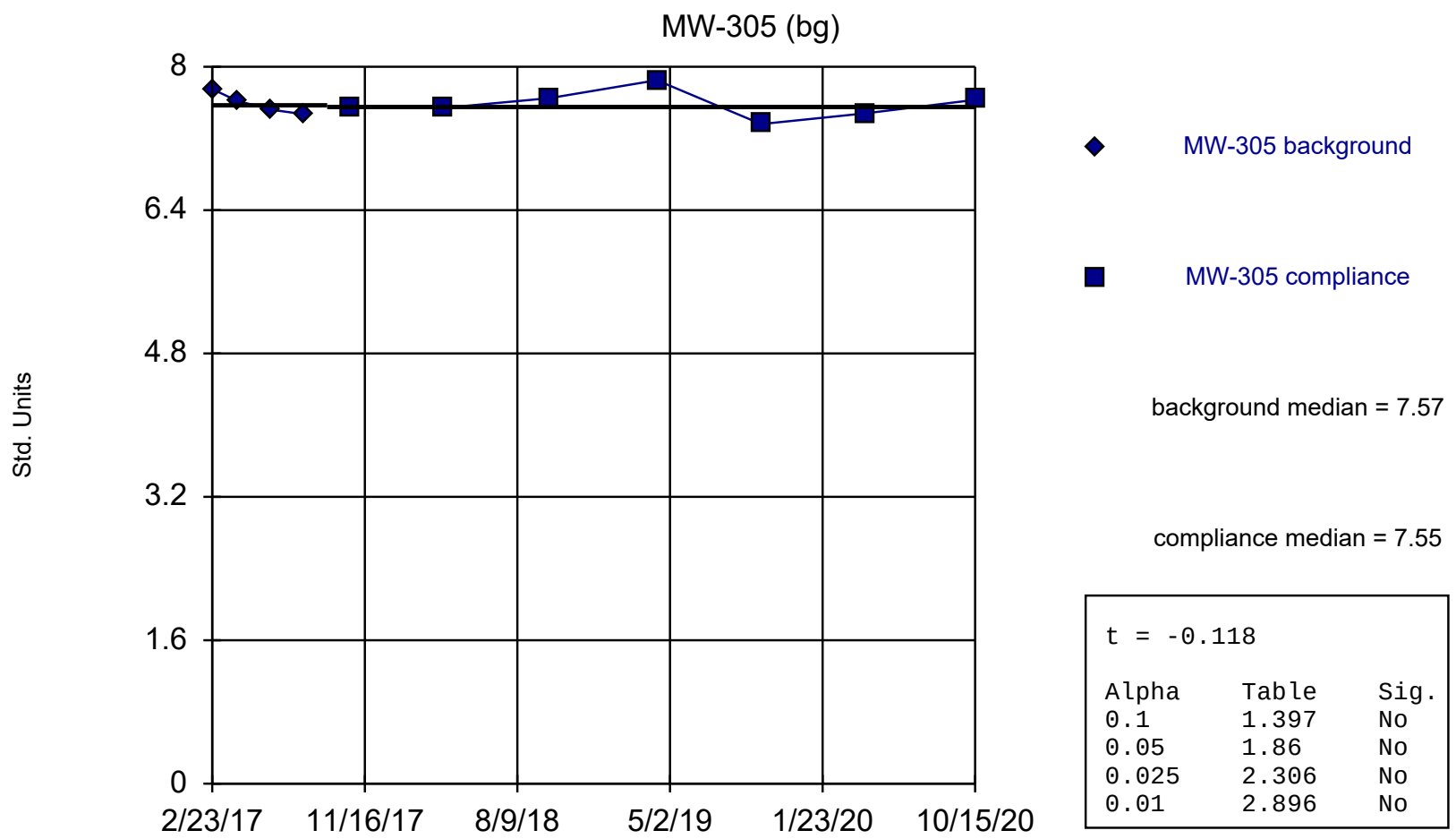


Mann-Whitney (Wilcoxon Rank Sum) used in lieu of Welch's t-test because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level.

Constituent: Field pH Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

Welch's t-test



t = -0.118

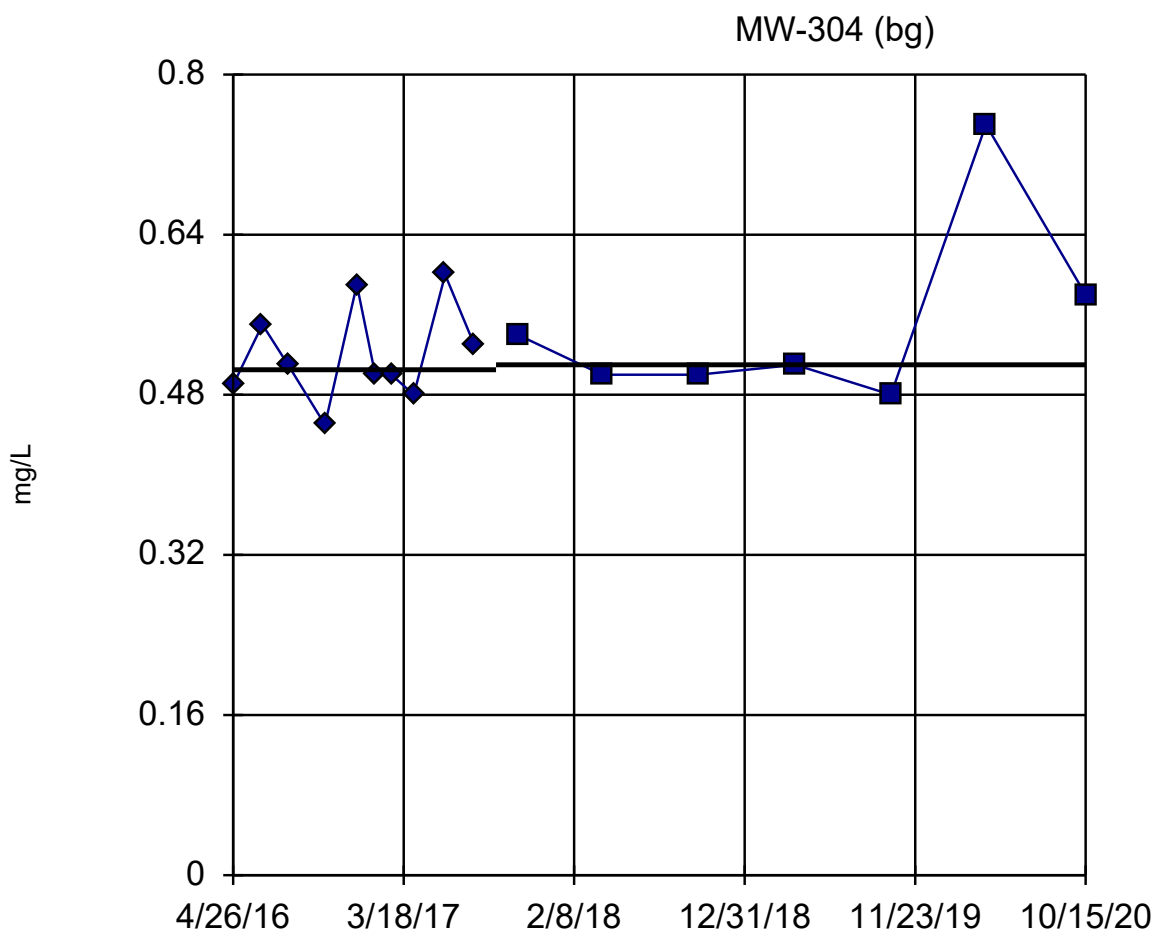
Alpha	Table	Sig.
0.1	1.397	No
0.05	1.86	No
0.025	2.306	No
0.01	2.896	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9554, critical = 0.748.

Constituent: Field pH Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

Welch's t-test



background median = 0.505

compliance median = 0.51

t = 0.8173

Alpha	Table	Sig.
0.1	1.397	No
0.05	1.86	No
0.025	2.306	No
0.01	2.896	No

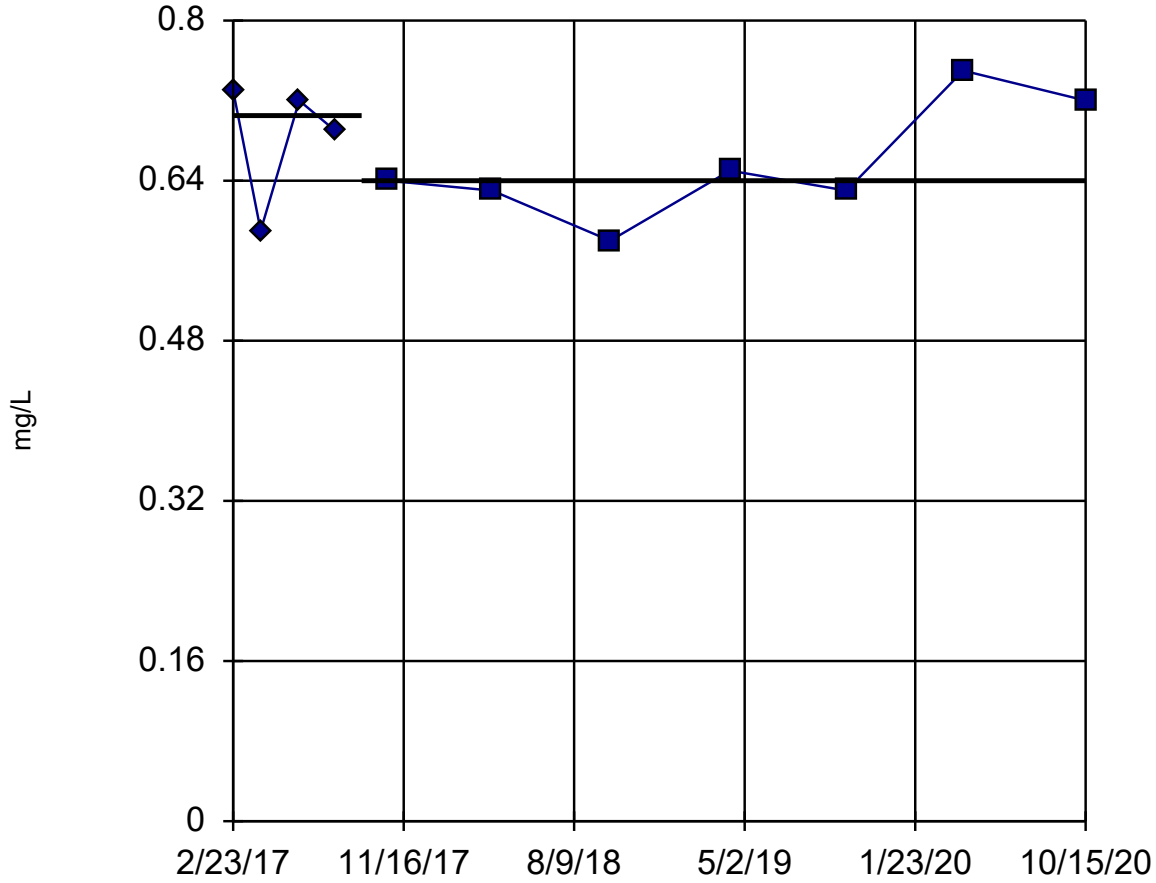
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9407, critical = 0.842.

Constituent: Fluoride Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

Welch's t-test

MW-305 (bg)



◆ MW-305 background

■ MW-305 compliance

background median = 0.705

compliance median = 0.64

t = -0.6531

Alpha	Table	Sig.
0.1	1.44	No
0.05	1.943	No
0.025	2.447	No
0.01	3.143	No

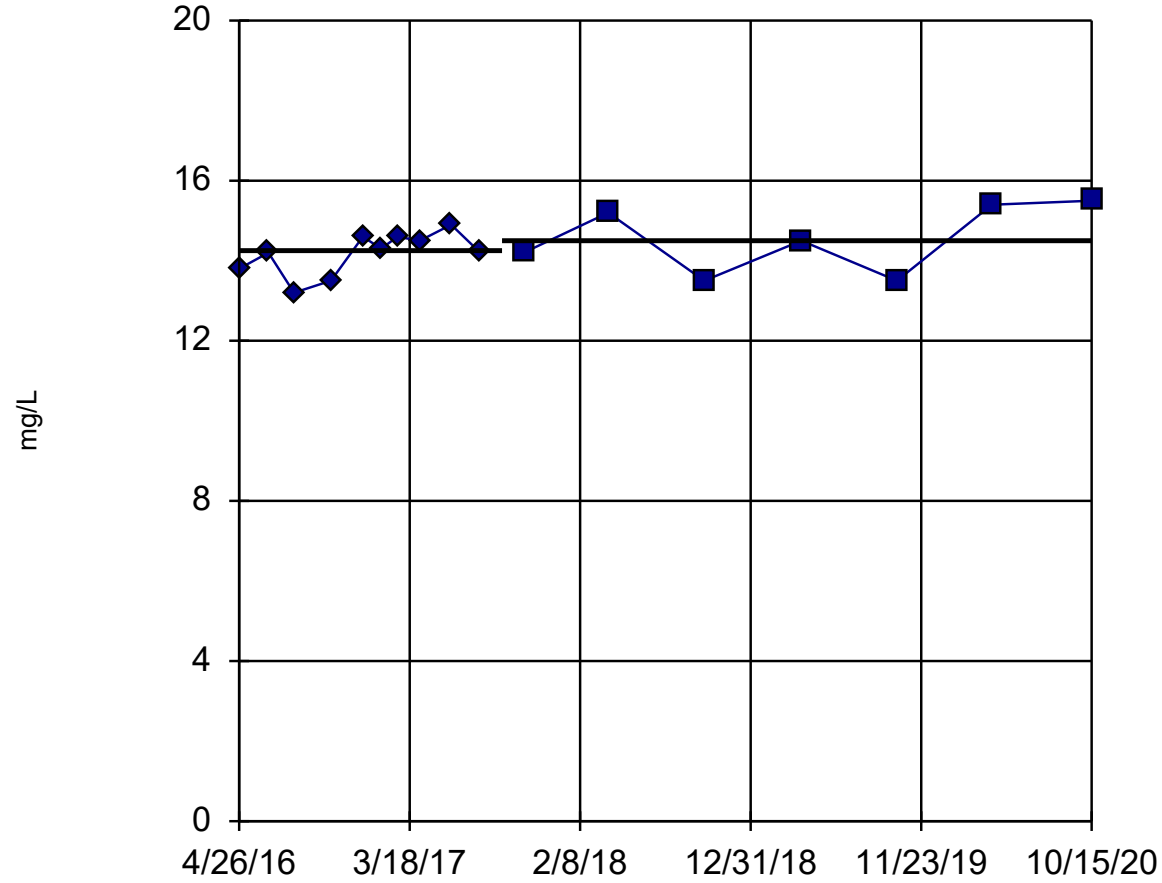
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.835, critical = 0.748.

Constituent: Fluoride Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

Welch's t-test

MW-304 (bg)



◆ MW-304 background

■ MW-304 compliance

background median = 14.25

compliance median = 14.5

t = 0.9964

Alpha	Table	Sig.
0.1	1.383	No
0.05	1.833	No
0.025	2.262	No
0.01	2.821	No

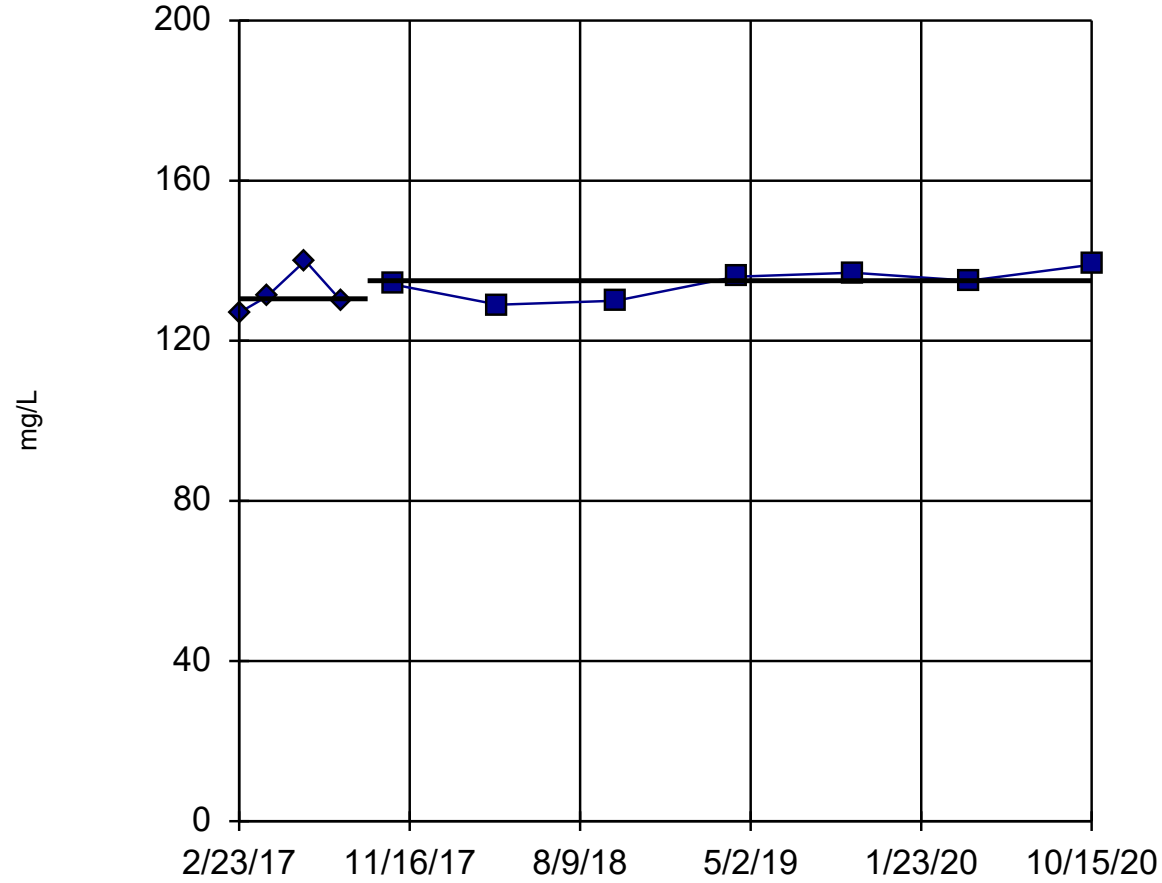
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9395, critical = 0.842.

Constituent: Sulfate Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

Welch's t-test

MW-305 (bg)



◆ MW-305 background

■ MW-305 compliance

background median = 130.5

compliance median = 135

t = 0.733

Alpha	Table	Sig.
0.1	1.533	No
0.05	2.132	No
0.025	2.776	No
0.01	3.747	No

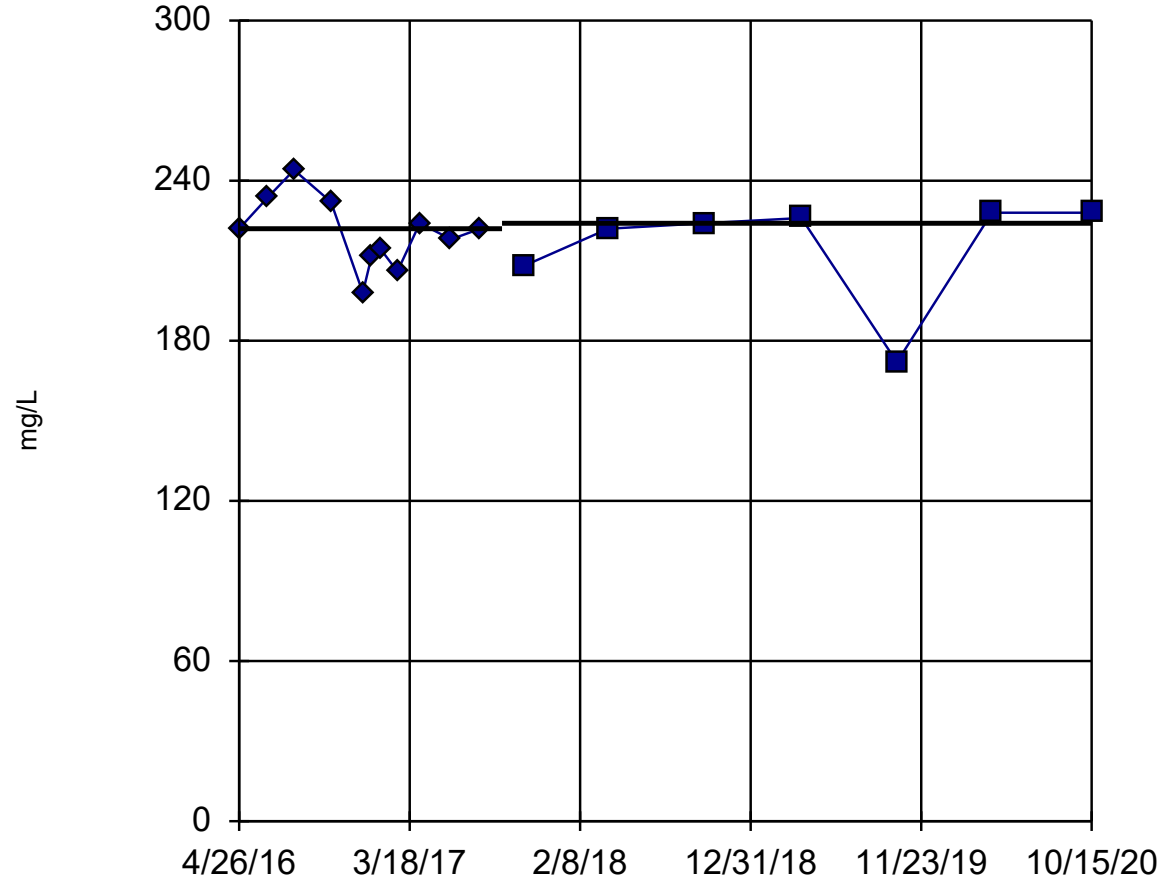
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8812, critical = 0.748.

Constituent: Sulfate Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

Welch's t-test

MW-304 (bg)



◆ MW-304 background

■ MW-304 compliance

background median = 222

compliance median = 224

t = -0.5915

Alpha	Table	Sig.
0.1	1.383	No
0.05	1.833	No
0.025	2.262	No
0.01	2.821	No

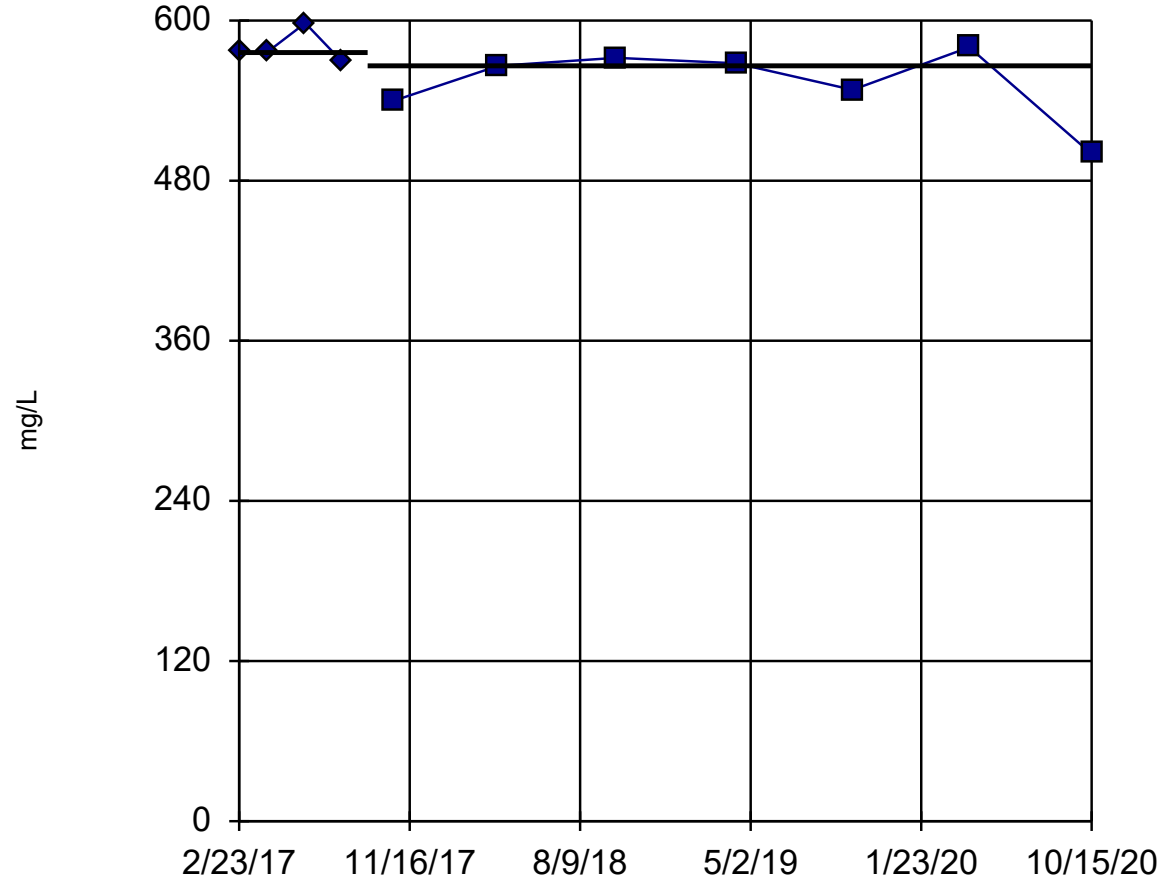
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.99, critical = 0.85.

Constituent: Total Dissolved Solids Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

Welch's t-test

MW-305 (bg)



◆ MW-305 background

■ MW-305 compliance

background median = 576

compliance median = 566

t = -2.208

Alpha	Table	Sig.
0.1	1.383	No
0.05	1.833	No
0.025	2.262	No
0.01	2.821	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8119, critical = 0.748.

Constituent: Total Dissolved Solids Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring

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

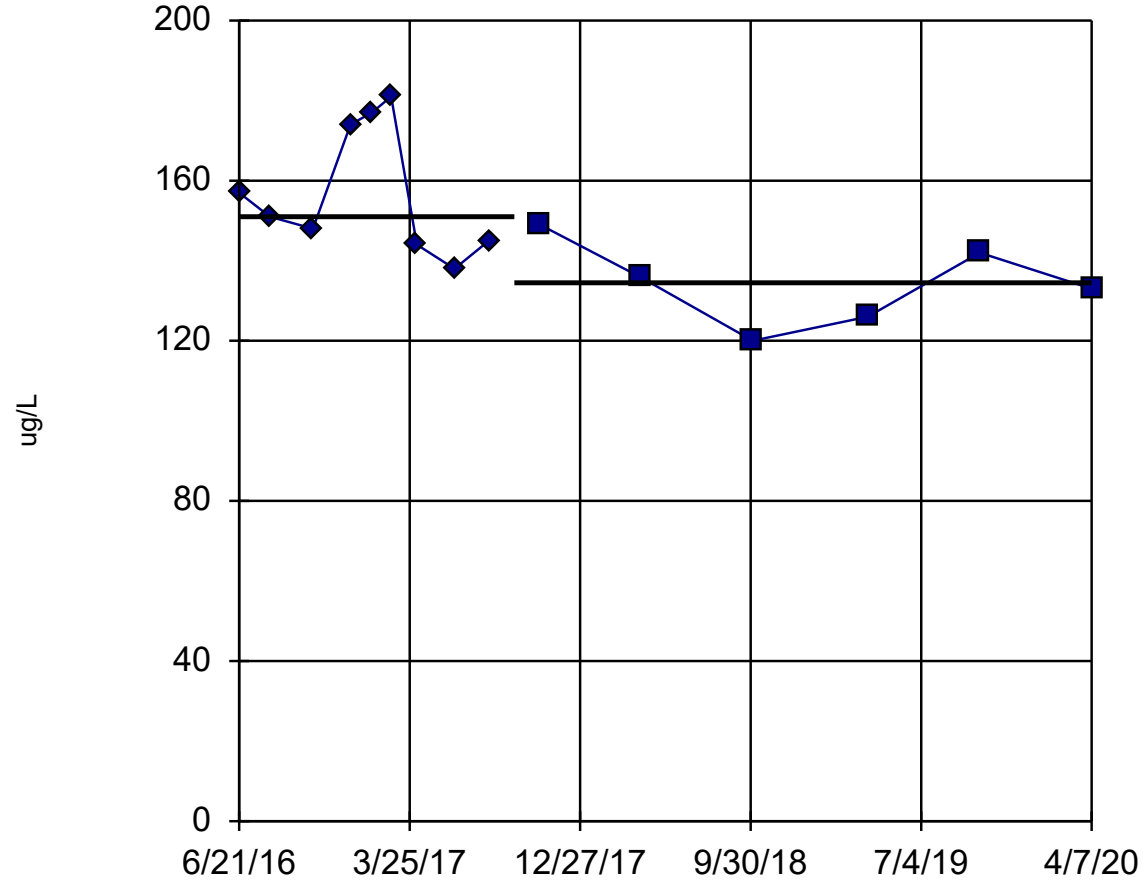
Welch's t-test/Mann-Whitney

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 1/3/2021, 5:35 PM

Constituent	Well	Calc.	0.1	0.05	0.025	0.01	Alpha	Sig.	Bg. Wells	Method
Boron (ug/L)	MW-301	-3.339	No	No	No	No	0.01	No	(intrawell)	Welch`s
Boron (ug/L)	MW-302	-2.486	No	No	No	No	0.01	No	(intrawell)	Welch`s
Boron (ug/L)	MW-303	-0....	No	No	No	No	0.01	No	(intrawell)	Welch`s

Welch's t-test

MW-301



◆ MW-301 background

■ MW-301 compliance

background median = 151

compliance median = 134.5

t = -3.339		
Alpha	Table	Sig.
0.1	1.35	No
0.05	1.771	No
0.025	2.16	No
0.01	2.65	No

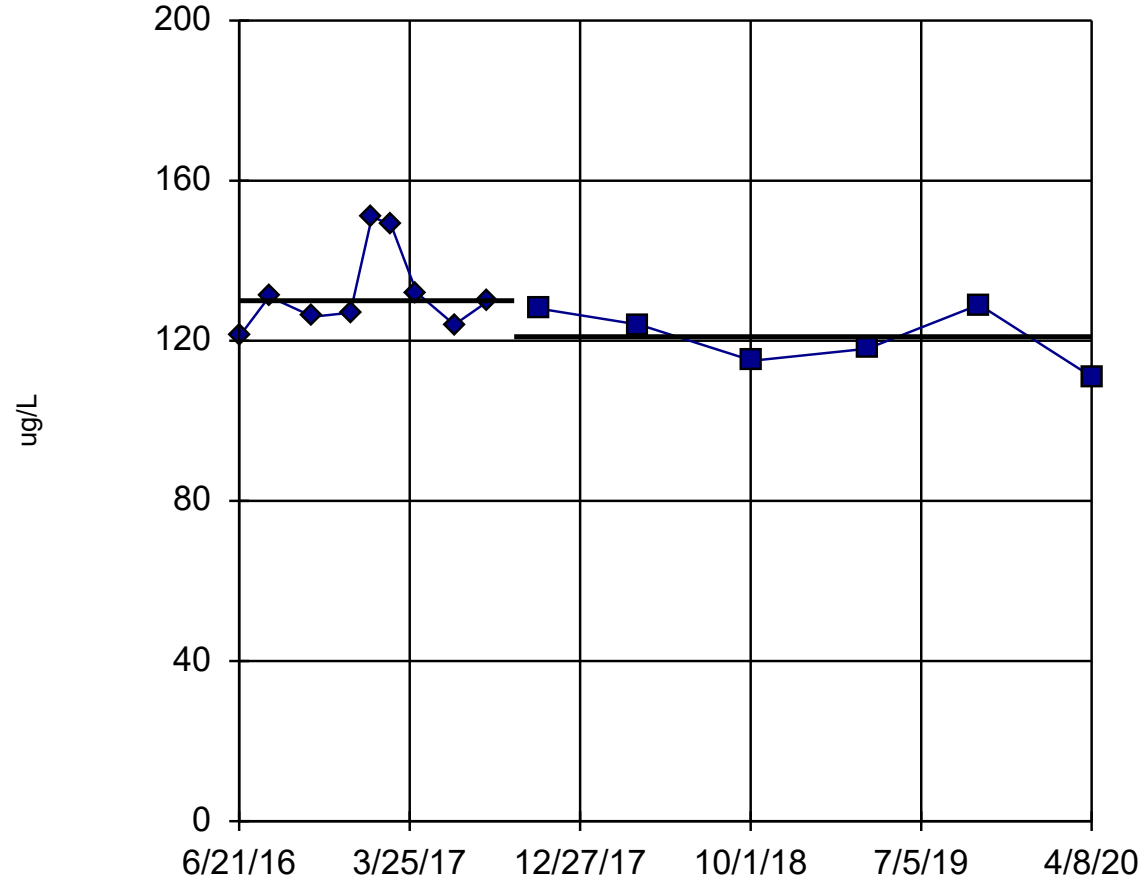
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8831, critical = 0.829.

Constituent: Boron Analysis Run 1/3/2021 5:34 PM View: I-43 LF Detection Monitoring

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

Welch's t-test

MW-302



MW-302 background

MW-302 compliance

background median = 130

compliance median = 121

t = -2.486

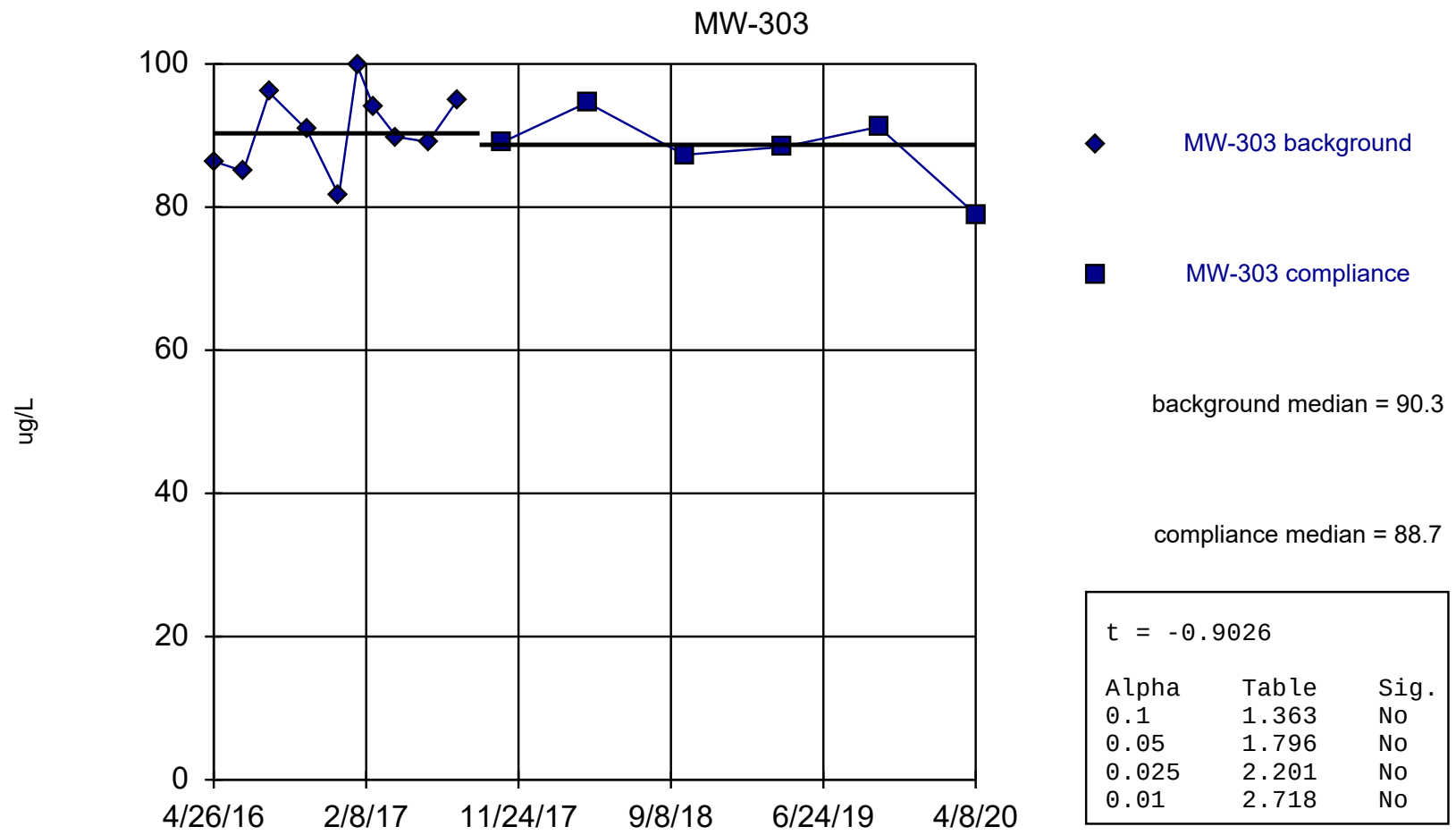
Alpha	Table	Sig.
0.1	1.35	No
0.05	1.771	No
0.025	2.16	No
0.01	2.65	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8304, critical = 0.829.

Constituent: Boron Analysis Run 1/3/2021 5:34 PM View: I-43 LF Detection Monitoring

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

Welch's t-test




```
t = -0.9026

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 = 0.9876, critical = 0.842.

Constituent: Boron Analysis Run 1/3/2021 5:34 PM View: I-43 LF Detection Monitoring

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

Attachment 5

Interwell Prediction Limit Analysis

Interwell Prediction Limit

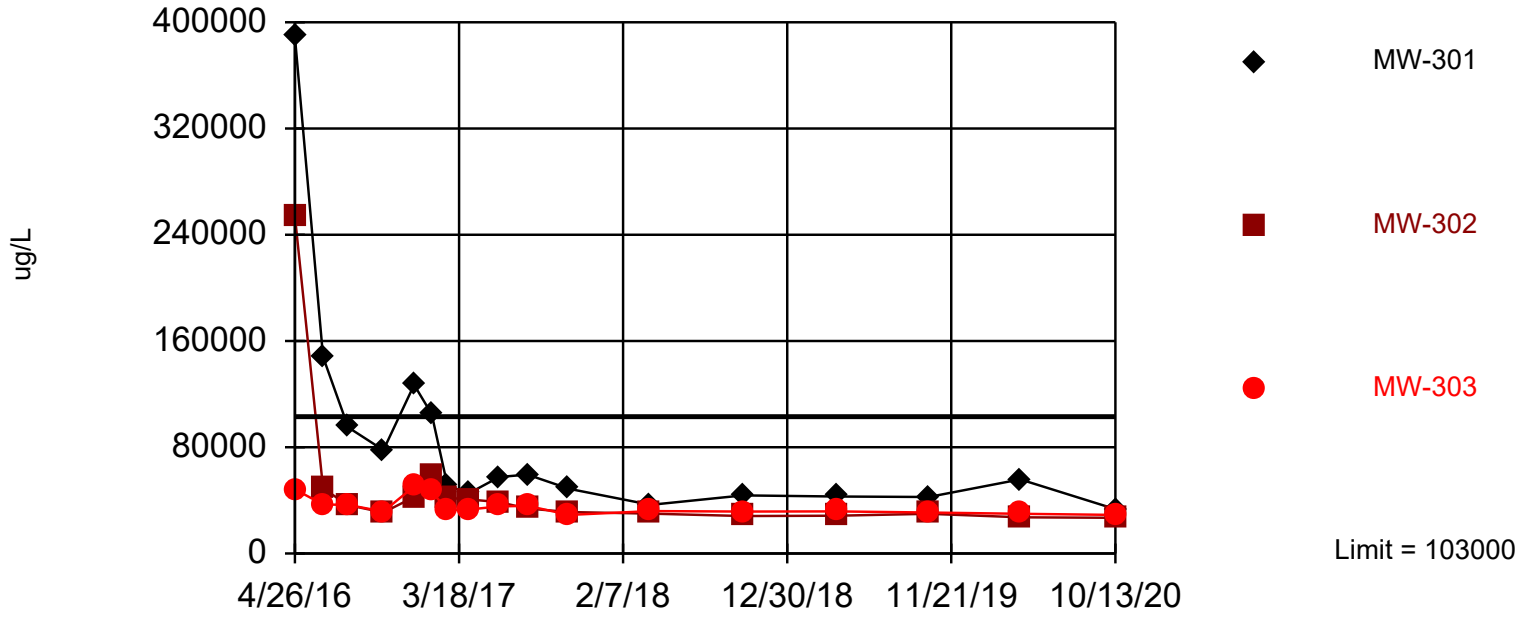
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 12/28/2020, 11:43 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Calcium (ug/L)	MW-301	103000	n/a	10/13/2020	33400	No	28	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002286	NP (normality) 1 of 2
Calcium (ug/L)	MW-302	103000	n/a	10/13/2020	26900	No	28	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002286	NP (normality) 1 of 2
Calcium (ug/L)	MW-303	103000	n/a	10/13/2020	29000	No	28	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002286	NP (normality) 1 of 2
Chloride (mg/L)	MW-301	24.9	n/a	10/13/2020	4.2	No	28	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002286	NP (normality) 1 of 2
Chloride (mg/L)	MW-302	24.9	n/a	10/13/2020	4.3	No	28	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002286	NP (normality) 1 of 2
Chloride (mg/L)	MW-303	24.9	n/a	10/13/2020	5.2	No	28	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002286	NP (normality) 1 of 2
Field pH (Std. Units)	MW-301	8.34	n/a	12/18/2020	7.64	No	27	MW-304,MW-305	7.85	0.2722	0	None	No	0.002505	Param 1 of 2
Field pH (Std. Units)	MW-302	8.34	n/a	12/18/2020	8.05	No	27	MW-304,MW-305	7.85	0.2722	0	None	No	0.002505	Param 1 of 2
Field pH (Std. Units)	MW-303	8.34	n/a	10/13/2020	8.31	No	27	MW-304,MW-305	7.85	0.2722	0	None	No	0.002505	Param 1 of 2
Fluoride (mg/L)	MW-301	0.753	n/a	12/18/2020	0.64	No	28	MW-304,MW-305	0.5854	0.09236	0	None	No	0.002505	Param 1 of 2
Fluoride (mg/L)	MW-302	0.753	n/a	12/18/2020	0.73	No	28	MW-304,MW-305	0.5854	0.09236	0	None	No	0.002505	Param 1 of 2
Fluoride (mg/L)	MW-303	0.753	n/a	10/13/2020	0.7	No	28	MW-304,MW-305	0.5854	0.09236	0	None	No	0.002505	Param 1 of 2
Sulfate (mg/L)	MW-301	140	n/a	10/13/2020	19	No	28	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002286	NP (normality) 1 of 2
Sulfate (mg/L)	MW-302	140	n/a	10/13/2020	19	No	28	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002286	NP (normality) 1 of 2
Sulfate (mg/L)	MW-303	140	n/a	10/13/2020	33.2	No	28	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002286	NP (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-301	598	n/a	10/13/2020	228	No	29	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002128	NP (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-302	598	n/a	10/13/2020	192	No	29	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002128	NP (normality) 1 of 2
Total Dissolved Solids (mg/L)	MW-303	598	n/a	10/13/2020	150	No	29	MW-304,MW-305	n/a	n/a	0	n/a	n/a	0.002128	NP (normality) 1 of 2

Within Limit

Calcium

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 28 background values. Annual per-constituent alpha = 0.01364. Individual comparison alpha = 0.002286 (1 of 2). Comparing 3 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Prediction Limit Analysis Run 12/28/2020 11:36 AM View: I-43 LF Detection Monitoring

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

Prediction Limit

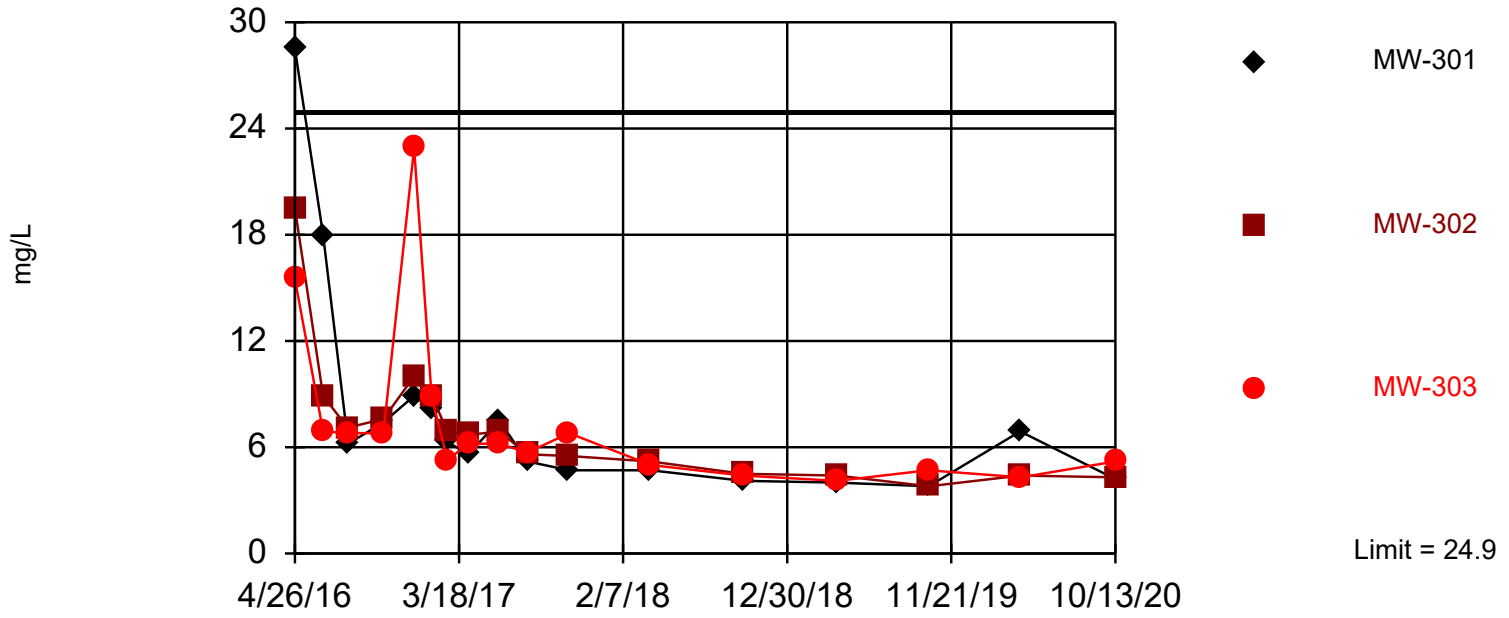
Constituent: Calcium (ug/L) Analysis Run 12/28/2020 11:43 AM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	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

Within Limit

Chloride

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 28 background values. Annual per-constituent alpha = 0.01364. Individual comparison alpha = 0.002286 (1 of 2). Comparing 3 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Prediction Limit Analysis Run 12/28/2020 11:36 AM View: I-43 LF Detection Monitoring

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

Prediction Limit

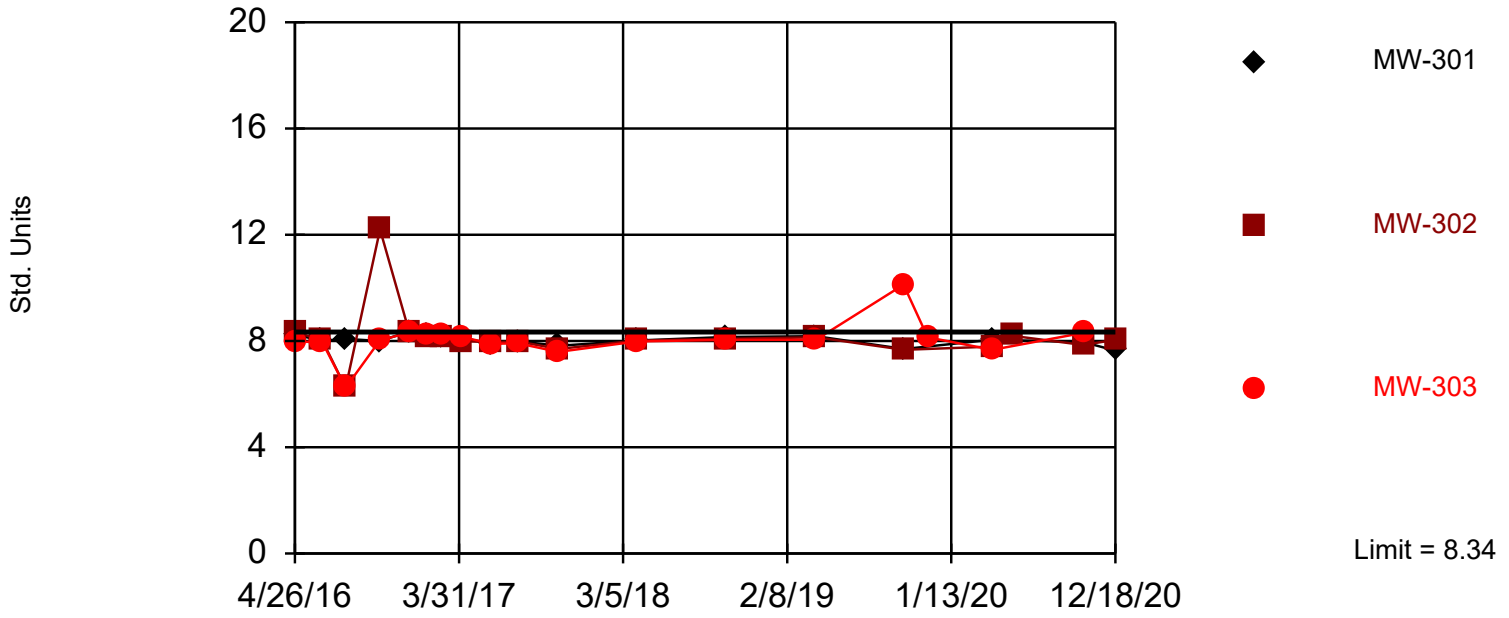
Constituent: Chloride (mg/L) Analysis Run 12/28/2020 11:43 AM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	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

Within Limit

Field pH

Interwell Parametric



Background Data Summary: Mean=7.85, Std. Dev.=0.2722, n=27. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9408, critical = 0.894. Kappa = 1.818 (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.

Prediction Limit Analysis Run 12/28/2020 11:36 AM 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 12/28/2020 11:43 AM View: I-43 LF Detection Monitoring

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

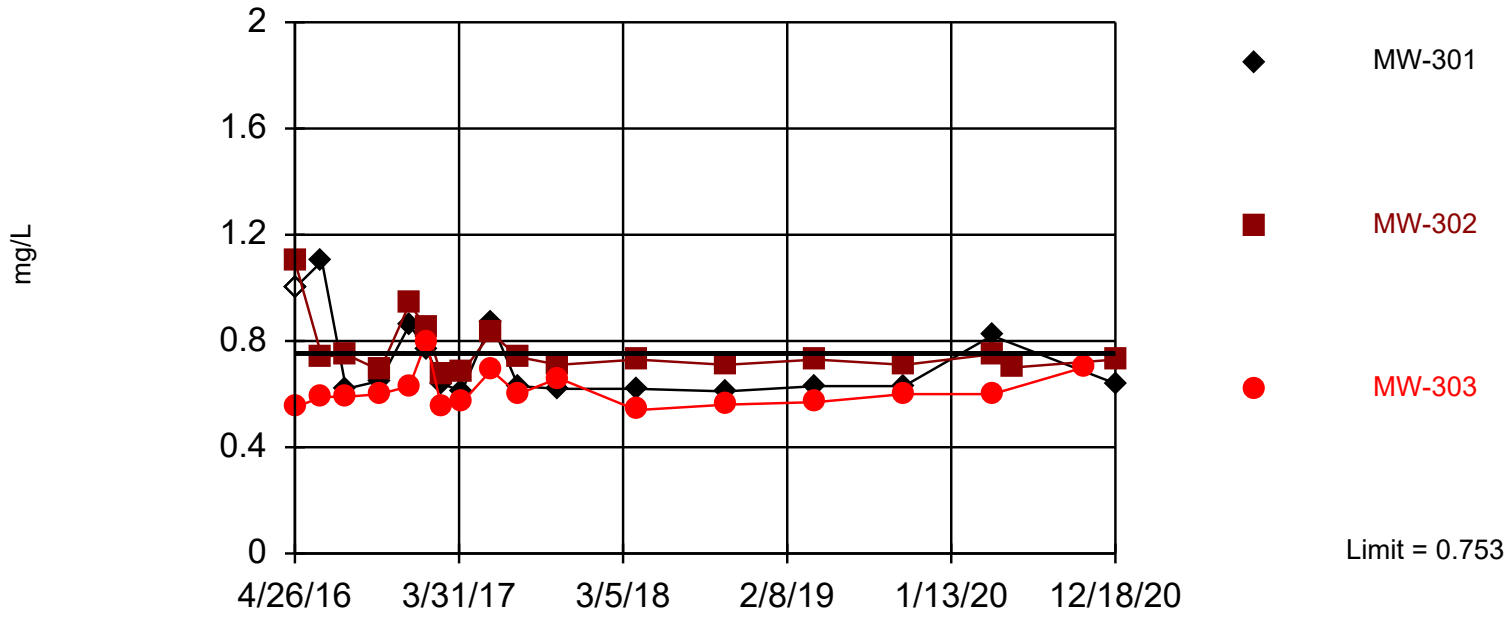
	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	8.24	8.33	7.96	8.16	
6/21/2016	8.01	8.05	7.98	8	
8/9/2016		6.24 (O)	6.24 (O)		
8/10/2016	8.08				
10/19/2016	8	12.2 (O)	8.03	8.17	
12/19/2016	8.36	8.31	8.32	8.29	
1/23/2017	8.21	8.16	8.23	8.14	
2/23/2017	8.14	8.16	8.24	8.22	7.75
4/6/2017	8.12	8			
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		7.79	7.67		
5/20/2020		8.19			
10/13/2020	7.96	7.85	8.31		
10/15/2020				8.12	7.63
12/18/2020	7.64	8.05			

Hollow symbols indicate censored values.

Within Limit

Fluoride

Interwell Parametric



Background Data Summary: Mean=0.5854, Std. Dev.=0.09236, n=28. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9156, critical = 0.896. Kappa = 1.81 (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.

Prediction Limit Analysis Run 12/28/2020 11:36 AM 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 12/28/2020 11:43 AM View: I-43 LF Detection Monitoring

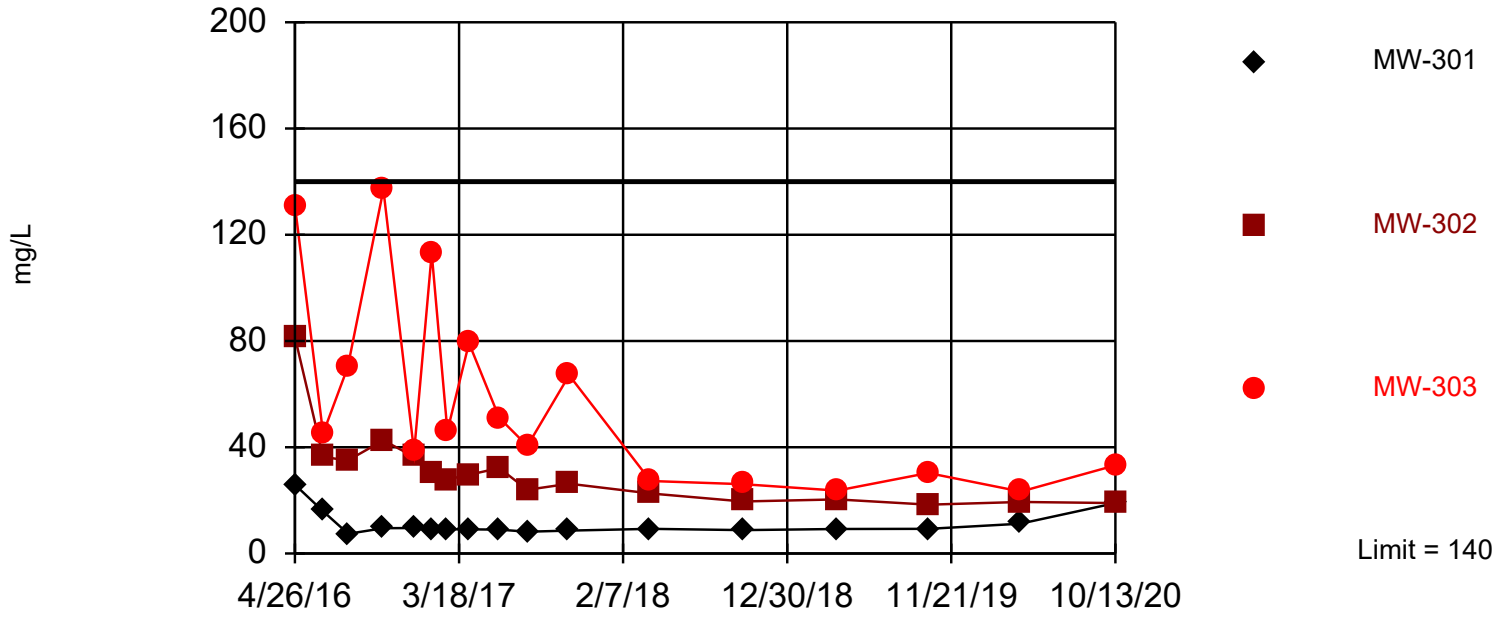
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	<2 (U)	1.1 (J)	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		0.75	0.6		
5/20/2020		0.7			
10/13/2020			0.7		
10/15/2020				0.58	0.72
12/18/2020	0.64 (R)	0.73 (R)			

Within Limit

Sulfate

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 28 background values. Annual per-constituent alpha = 0.01364. Individual comparison alpha = 0.002286 (1 of 2). Comparing 3 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Prediction Limit Analysis Run 12/28/2020 11:36 AM View: I-43 LF Detection Monitoring

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

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/28/2020 11:43 AM View: I-43 LF Detection Monitoring

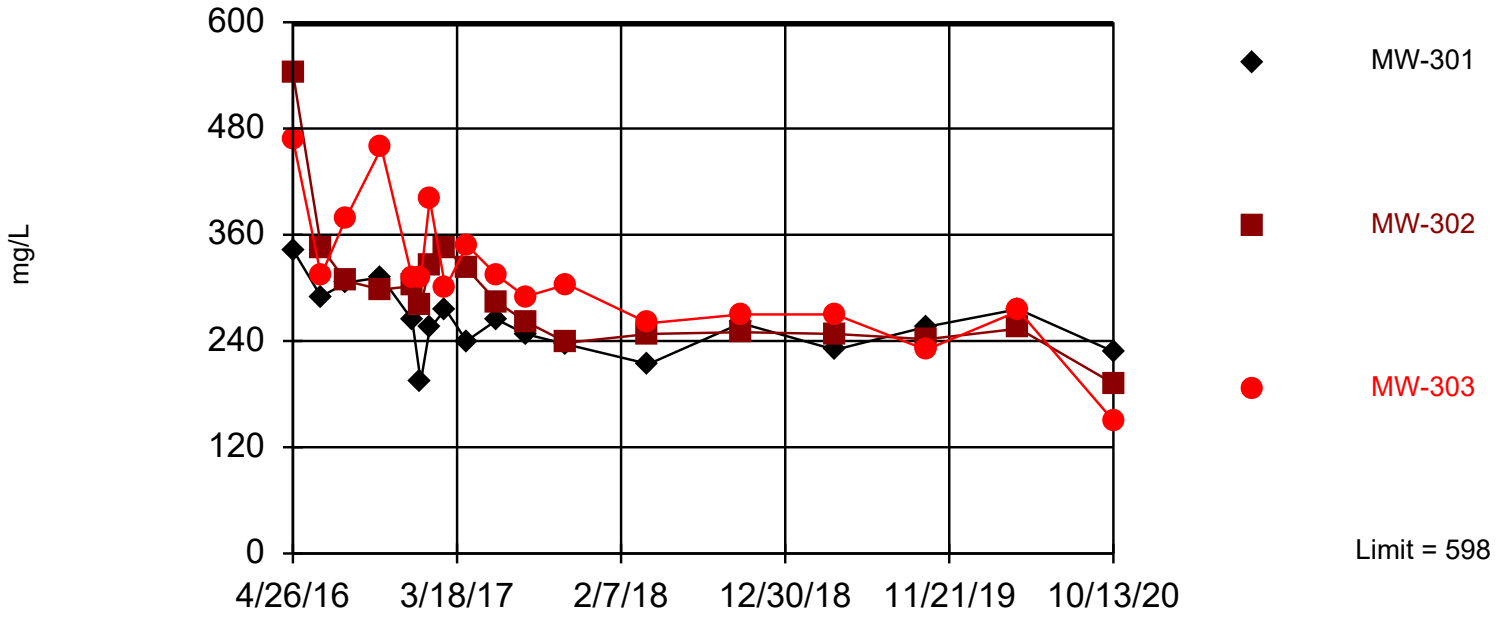
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	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

Within Limit

Total Dissolved Solids

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 29 background values. Annual per-constituent alpha = 0.0127. Individual comparison alpha = 0.002128 (1 of 2). Comparing 3 points to limit. Seasonality was not detected with 95% confidence.

Prediction Limit Analysis Run 12/28/2020 11:36 AM 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 12/28/2020 11:43 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	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

Attachment 6

Intrawell Prediction Limit Analysis

Intrawell Prediction Limit

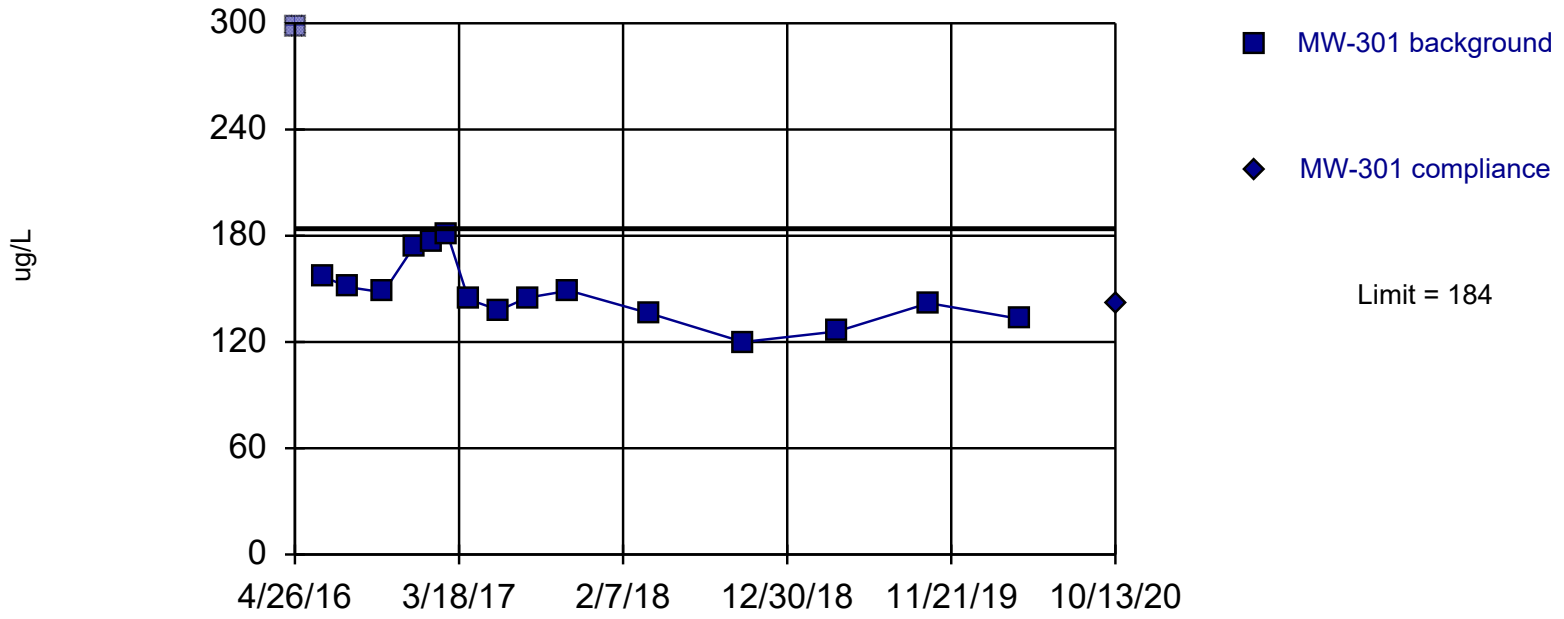
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All Printed 12/23/2020, 6:01 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (ug/L)	MW-301	184	n/a	10/13/2020	142	No	15	n/a	148.1	17.92	0	None	No	0.002505	Param 1 of 2
Boron (ug/L)	MW-302	149	n/a	10/13/2020	128	No	15	n/a	127.7	10.83	0	None	No	0.002505	Param 1 of 2
Boron (ug/L)	MW-303	100	n/a	10/13/2020	85.8	No	16	n/a	89.81	5.392	0	None	No	0.002505	Param 1 of 2

Within Limit

Boron

Intrawell Parametric



Background Data Summary: Mean=148.1, Std. Dev.=17.92, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9399, critical = 0.835. Kappa = 2.006 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/23/2020 6:01 PM View: I-43 LF Detection Monitoring

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

Prediction Limit

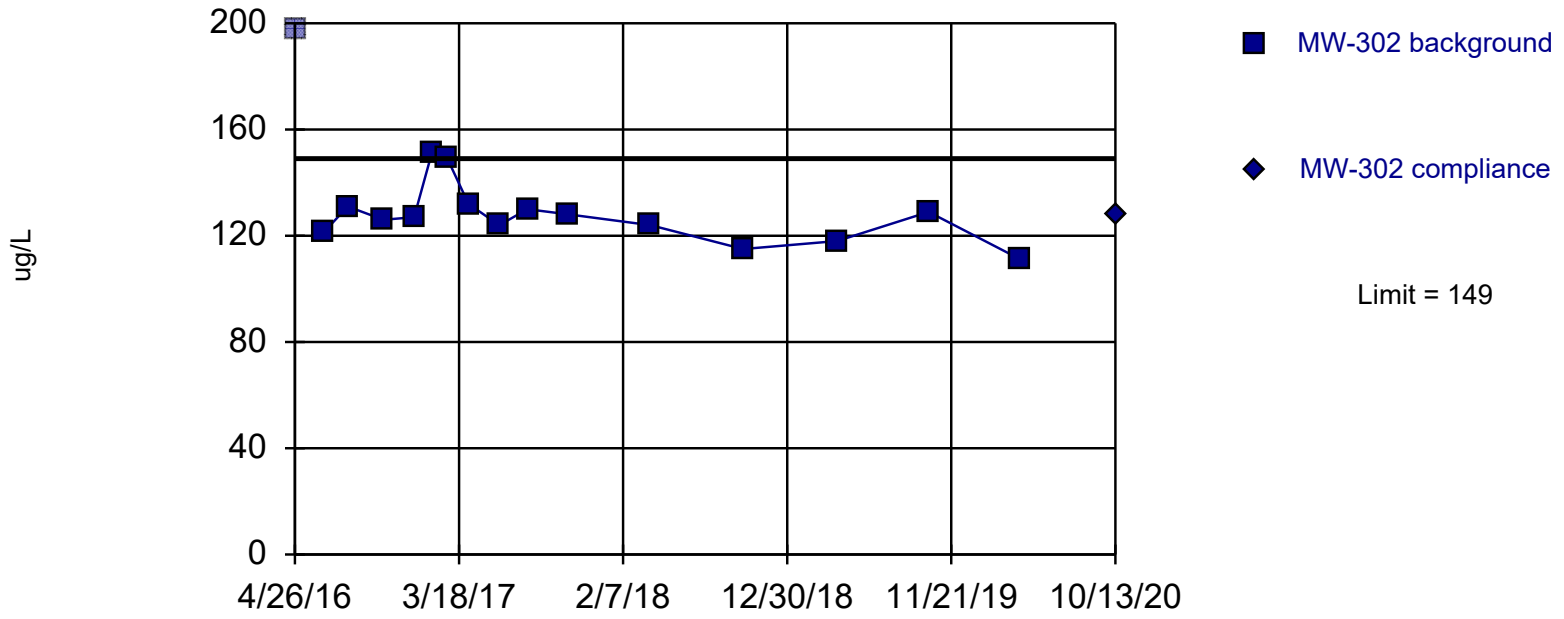
Constituent: Boron (ug/L) Analysis Run 12/23/2020 6:01 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-301	MW-301
4/26/2016	298 (R)	
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

Within Limit

Boron

Intrawell Parametric



Background Data Summary: Mean=127.7, Std. Dev.=10.83, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9045, critical = 0.835. Kappa = 2.006 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/23/2020 6:01 PM View: I-43 LF Detection Monitoring

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

Prediction Limit

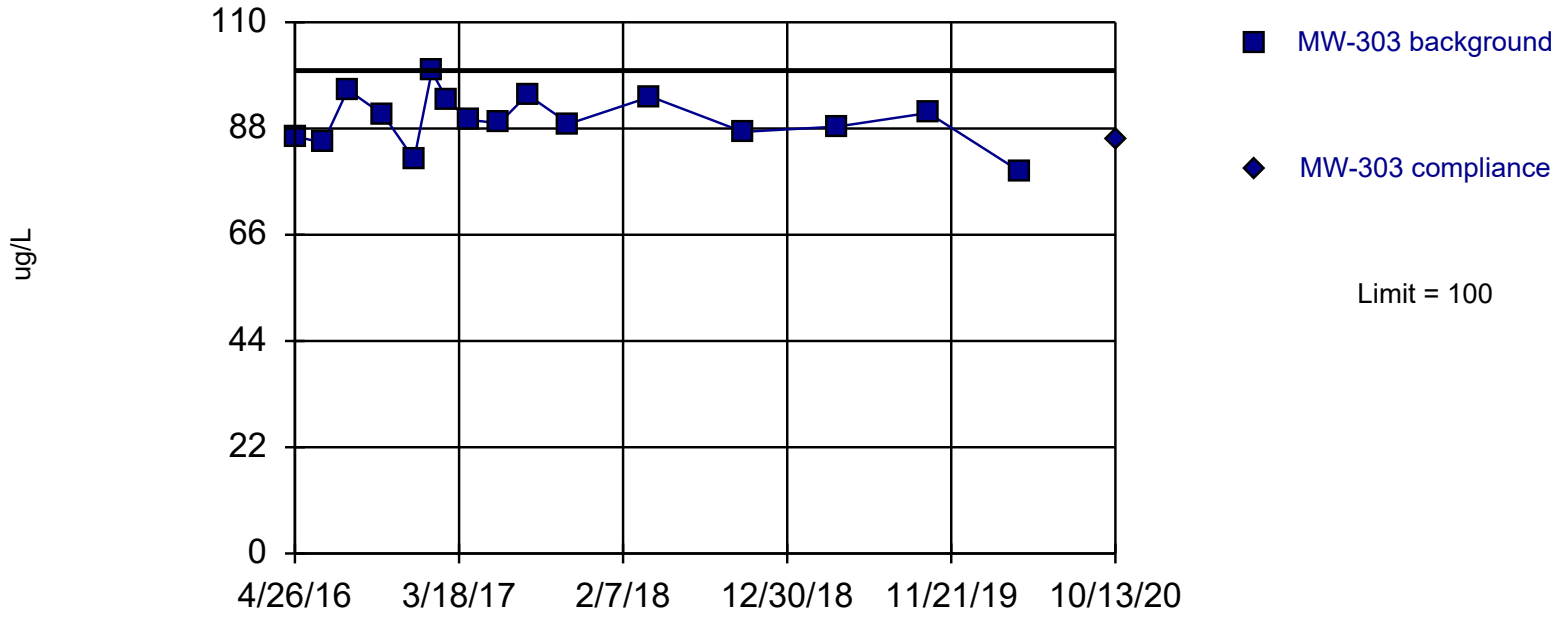
Constituent: Boron (ug/L) Analysis Run 12/23/2020 6:01 PM View: I-43 LF Detection Monitoring
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

	MW-302	MW-302
4/26/2016	198 (R)	
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

Within Limit

Boron

Intrawell Parametric



Background Data Summary: Mean=89.81, Std. Dev.=5.392, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9846, critical = 0.844. Kappa = 1.97 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/23/2020 6:01 PM View: I-43 LF Detection Monitoring

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