2020 Annual Groundwater Monitoring and Corrective Action Report

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

Prepared for:



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	<u>April/May 2020</u> None <u>October/December 2020</u> None
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	Assessment monitoring not required.

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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

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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 $\S257.90(e)(6)$ 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.

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Table 1. Groundwater Monitoring Well NetworkEdgewater 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 SummaryEdgewater Generating Station I-43 LandfillSCS Engineers Project #25220069.00

Sample Dates	Co	mpliance W	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

	Ground Water Elevation in feet above mean sea level (amsl)				
Well Number	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 Last rev. by: RM Checked by: NDK Date: 1/10/2020 Date: 12/18/2020 Date: 12/18/2020

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Table 3B, Page 1 of 1

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)	∆l (ft)	∆h/∆l (ft/ft)	V (ft/d)
4/7/2020	658.0	657.0	488	0.002	0.00
4/7/2020	660.0	658.0	880	0.002	0.09
10/12-15/2020	654.0	653.0	413	0.002	0.11
10/12-15/2020	656.0	654.0	761	0.003	0.11

	K Value	K Value
Wells	(ft/d)	(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: $V = [K^*(\Delta h/\Delta I)] / n$

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 ΔI = distance between location 1 and 2 $\Delta h/\Delta I$ = 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 2020Edgewater I-43 Ash Disposal Facility, Sheboygan, WI / SCS Engineers Project #25220069.00

		Backgrou	nd Wells			Co	mpliance We	lls		
		MW-304	MW-305	N	W-301		MW-302		MW-303	
Parameter Name	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

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

NA = Not Analyzed

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.

Created by: NDK	Date:	1/7/2021
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

		Backgrou	nd Wells	Compliance Wells							
		MW-304	MW-305		MW-301			MW-302		MW-303	
Parameter Name	Interwell UPL	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	1	4.2	NA		4.3	NA		5.2
Fluoride, mg/L	0.753	0.58	0.72	1	0.83	0.64		0.82	0.73		0.70
Field pH, Std. Units	8.34	8.12	7.63	1	7.96	NA		7.85	NA		8.31
Sulfate, mg/L	140	15.5	139	1	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 litermg/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
		0 1 1 0000 1 17 1 1 15

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

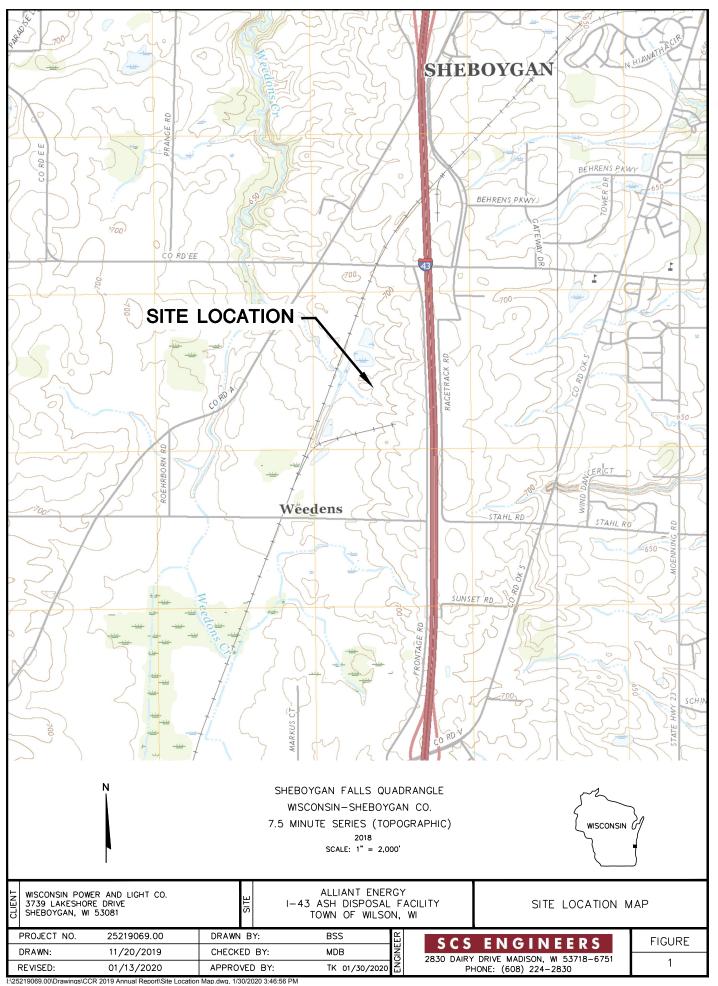
Well	Sample Date	Groundwater Elevation (feet)	Field Temperature (deg C)	Field pH (Std. Units)	Oxygen, Dissolved (mg/L)	Field Specific Conductance (umhos/cm)	Field Oxidation Potential (mV)	Turbidity (NTU)
MW-301	4/7/2020	656.59	9.50	8.05	0.30	384	-69.0	259.0
	10/13/2020	652.16	12.5	7.96	1.10	354	162.0	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

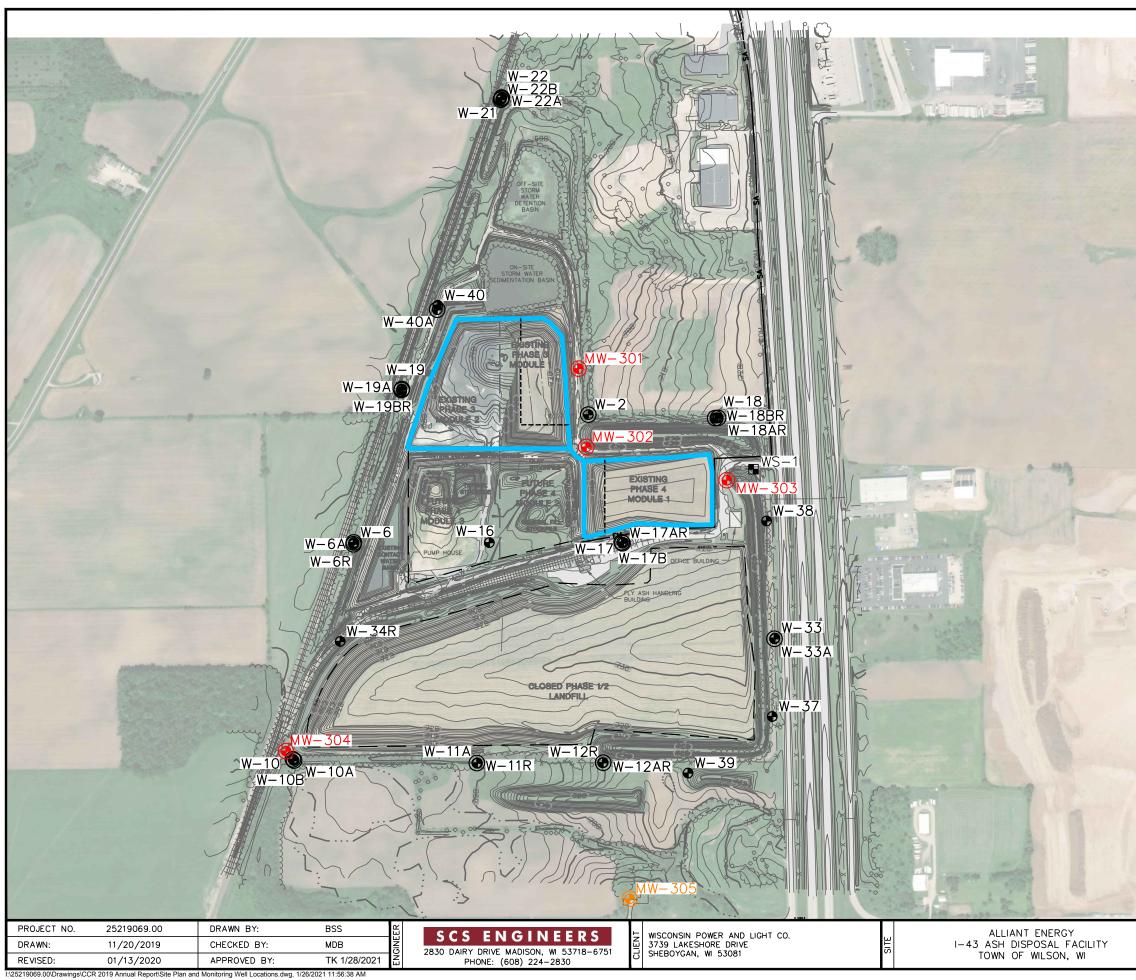
I:\25220069.00\Data and Calculations\Tables\field data\Table 6 - 2020 Groundwater Field Data Summary

Figures

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



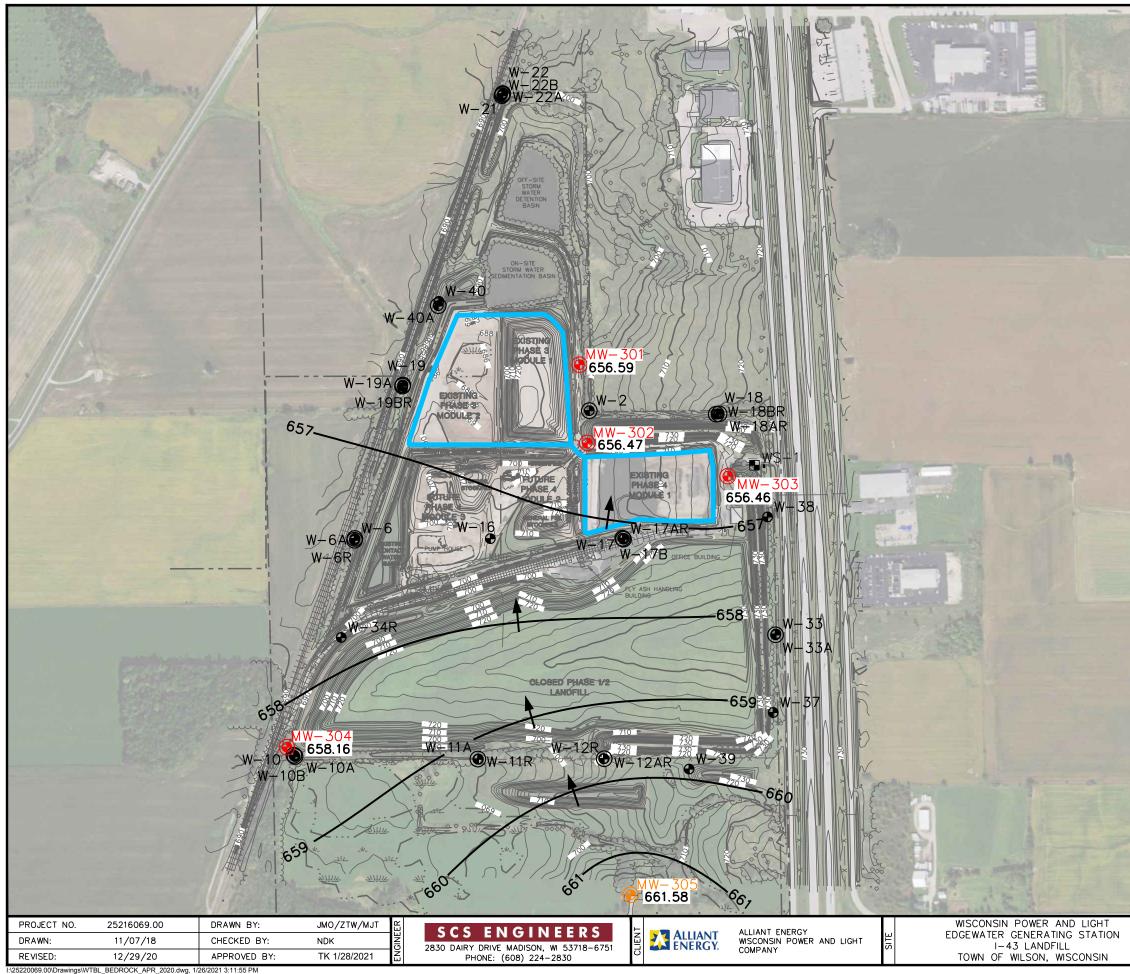
02/04/2021 - Classification: Internal - ECRM7850510



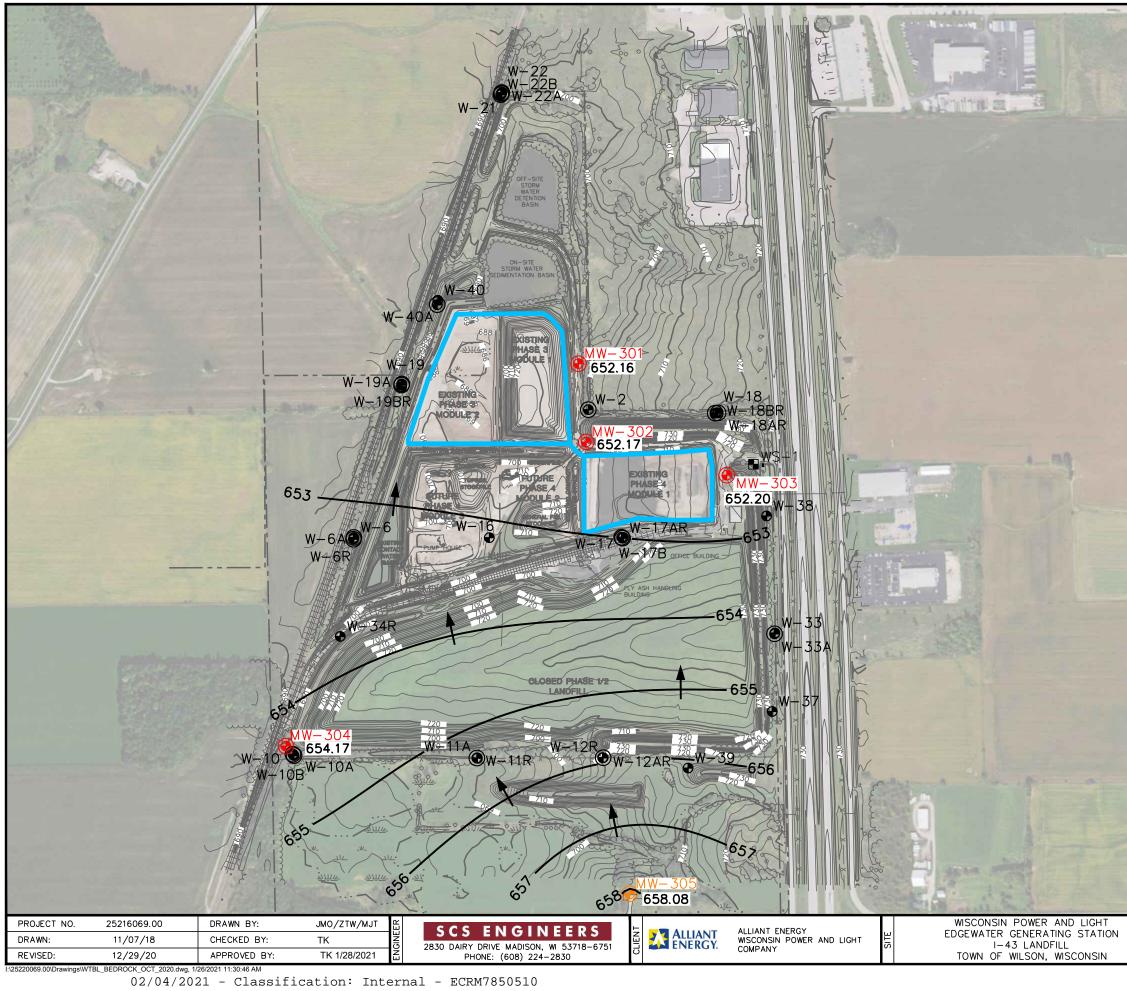
	LEGEND
	APPROXIMATE PROPERTY LINE
	MODULE LIMITS
	GRADE (2' CONTOUR)
	GRADE (10' CONTOUR)
· · · · · · · ·	EDGE OF WATER
	SWALE
<u> </u>	CULVERT
O MH	MANHOLE
W	CONTACT WATER TRANSFER PIPE
AB	ABANDONED 3" DIA. HDPE PIPE
····· »	TREELINE/TREES
	PAVED ROAD
	UNPAVED ACCESS ROAD
++++++++++++++++++++++++++++++++++++	RAILROAD TRACKS
x x x x	FENCE
Ø Þ	UTILITY/LIGHT POLE
•	MONITORING WELL (UNCONSOLIDATED)
۲	PIEZOMETER (UNCONSOLIDATED)
	PRIVATE WATER SUPPLY WELL
۲	CCR PIEZOMETER (BEDROCK)
۲	CCR BACL GROUND MONITORING WELL
	LIMITS OF FINAL COVER

NOTE:

1.	2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA USGS, AEX, GETMAPPING, AEROGRID, IGN, IG SWISSTOPO, AND THE GIS USER COMMUNITY	Ρ,				
2.	MONITORING WELLS MW-301, MW-302, MW- AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 201 BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SC ENGINEERS.	6 BY				
3.	3. MONITORING WELL MW-305 WAS INSTALLED FEBRUARY 2, 2017 BY BADGER STATE DRILLING, INC. N					
4.	THE BACKGROUND MONITORING WELL FOR TH I-43 ASH DISPOSAL FACILITY IS MW-305.	ΗE				
500 						
	SCALE: 1" = 500'					
	FIGURE					
	WELL LOCATIONS					



		LEGEND			
		APPROXIMATE PROPERTY LIN	ΙE		
		MODULE LIMITS			
		GRADE (2' CONTOUR)			
	-690	GRADE (10' CONTOUR)			
· ·	· · · · ·	EDGE OF WATER			
· ·	·	SWALE			
	\rightarrow	CULVERT			
	o Mh	MANHOLE			
	— W ———	CONTACT WATER TRANSFER	PIPE		
	— AB ———	ABANDONED 3" DIA. HDPE F	PIPE		
\sim	~~~~ °	TREELINE/TREES			
		PAVED ROAD			
===:		UNPAVED ACCESS ROAD			
+++++++	+++++++++++++++++++++++++++++++++++++++	RAILROAD TRACKS			
x	x x x	FENCE			
	Ø	UTILITY/LIGHT POLE			
	•	MONITORING WELL (UNCONSO)		
	۲	NEZOMETER (UNCONSOLIDAT			
PRIVATE WATER SUPPLY WELL					
	•	CCR RULE PIEZOMETER (BEE			
	e	CCR RULE BACKGROUND MC			
	Ŭ	CCR RULE UNIT			
	656	POTENTIOMETRIC SURFACE E	LEVATION		
		POTENTIOMETRIC SURFACE C	ONTOUR		
	->	APPROXIMATE GROUNDWATER	R FLOW		
	_	DIRECTION			
NOT					
1.	MW-304 WERE	ELLS MW-301, MW-303, AND INSTALLED BETWEEN NOVEME			
	STATE DRILLING	JANUARY 26, 2016 BY BADG G INC. DRILLING WAS PERFORM	MED		
		PERVISION OF SCS ENGINEER			
2.	AND MW-304	ELLS MW-301, MW-302, MW- Were surveyed on februar			
	8, 2016 BY SC				
3.		ELL MW-305 WAS SURVEYED 2017 BY CQM, INC.	on N		
4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM PIEZOMETERS ON APRIL 7, 2020.					
5.		IND MONITORING WELL FOR TH	ΗE		
	I-43 LANDFILL	IS MW-305.			
50	0	0 500			
╞═╼══╧═══					
SCALE: 1" = 500'					
BEDR		METRIC SURFACE MAP 7, 2020	FIGURE 3		



		LEGEND				
		APPROXIMATE PROPERTY LIN	IE			
		MODULE LIMITS	-			
		GRADE (2' CONTOUR)				
	-690	GRADE (10' CONTOUR)				
		EDGE OF WATER				
		SWALE				
	<u> </u>	CULVERT				
	оMн	MANHOLE				
	— W ———	CONTACT WATER TRANSFER	PIPE			
	— AB ———	ABANDONED 3" DIA. HDPE F	PIPE			
\sim	~~~~ °	TREELINE/TREES				
		PAVED ROAD				
		UNPAVED ACCESS ROAD				
+++++++	+++++++++++++++++++++++++++++++++++++++	RAILROAD TRACKS				
x	x x x	FENCE				
	Ø \$	UTILITY/LIGHT POLE				
	•	MONITORING WELL (UNCONSO	LIDATED)			
	۲	PIEZOMETER (UNCONSOLIDATED)				
		PRIVATE WATER SUPPLY WELL				
	•	CCR RULE PIEZOMETER (BEDROCK)				
	•	CCR RULE BACKGROUND MONITORING WELL				
		CCR RULE UNIT				
	652	POTENTIOMETRIC SURFACE E				
		POTENTIOMETRIC SURFACE C APPROXIMATE GROUNDWATER				
	-	DIRECTION	, FLOW			
NOT	E:					
1.	MW-304 WERE 30, 2015 AND STATE DRILLIN	ELLS MW-301, MW-303, AND INSTALLED BETWEEN NOVEME JANUARY 26, 2016 BY BADG G INC. DRILLING WAS PERFORI IPERVISION OF SCS ENGINEER	ER MED			
2.		ELLS MW-301, MW-302, MW- WERE SURVEYED ON FEBRUAF CS ENGINEERS.				
3.		ELL MW-305 WAS SURVEYED 2017 BY CQM, INC.				
4.	GROUNDWATER	ELEVATIONS WERE COLLECTED TERS ON OCTOBER 12-15, 20				
5.		JND MONITORING WELL FOR TI				
50(C	0 500				
SCALE: 1" = 500'						
BEDR	OCK POTENTIC	METRIC SURFACE MAP	FIGURE			
22011	OCTOBER 12–15, 2020 4					

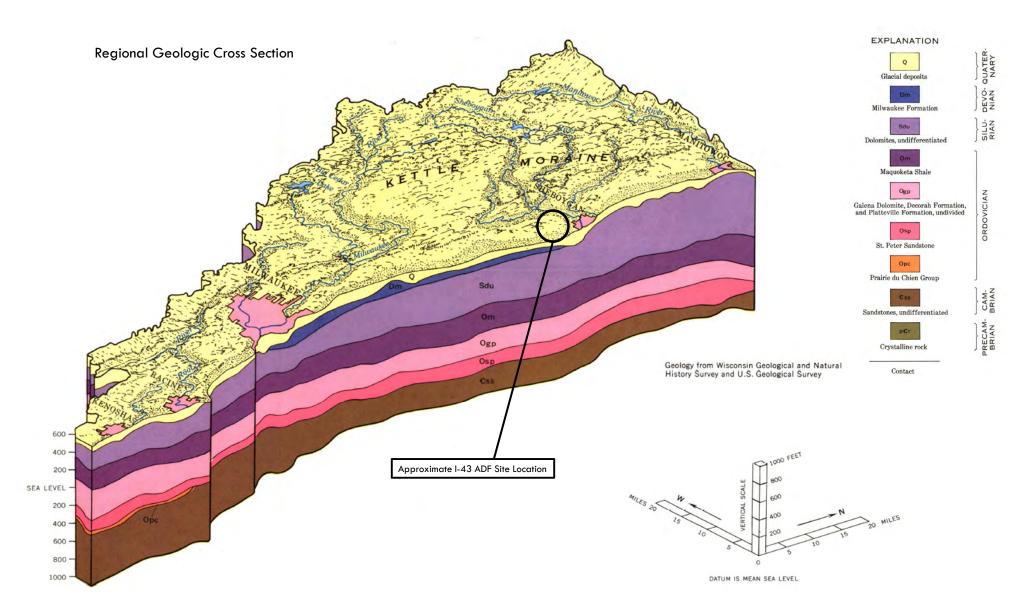
Appendix A

Regional Hydrogeologic Information

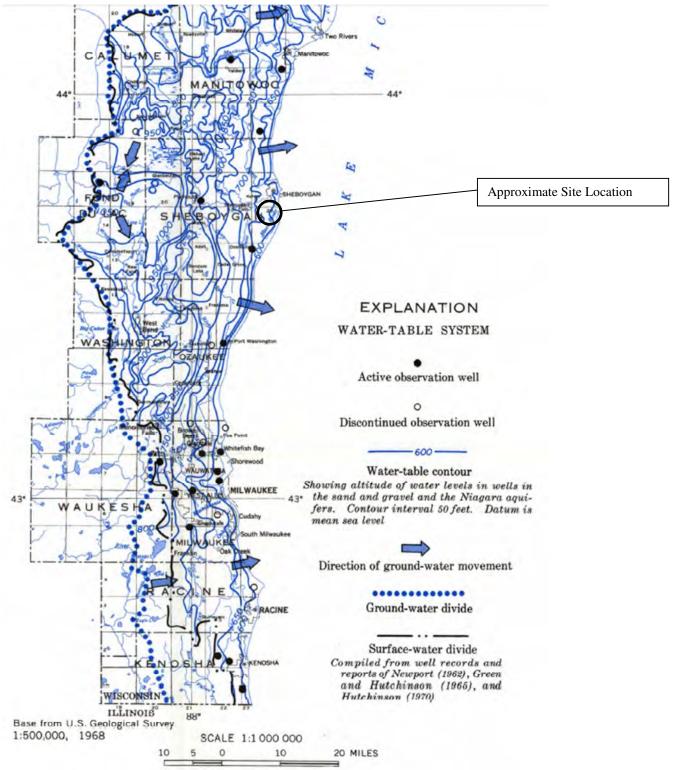
2020 Annual Groundwater Monitoring and Corrective Action Report

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02/04/2021 - Classification: Internal - ECRM7850510



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 StratigraphyEdgewater I-43 Landfill / SCS Engineers Project #25216069

Age	Hydrogeologic Unit	General Thickness (feet)	Name of Rock Unit*	Predominant Lithology
Quaternary	Sand and Gravel	0 to 235	Surface sand and gravel	Sand and Gravel
	Aquifer	0 to 300	Buried sand and gravel	
Devonian	Niagara Dolomite	0 to 750	Dolomite	Dolomite
Silurian	Aquifer	010730	(undifferentiated)	Dolonine
	Confining Unit	0 to 400	Maquoketa Shale	Shale and dolomite
Ordovician		100 to 340	Galena Decorah Platteville	Dolomite
		0 to 330	St. Peter	Sandstone
	Sandstone Aquifer	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_143.doc

Appendix B

Boring Logs and Well Construction Documentation

2020 Annual Groundwater Monitoring and Corrective Action Report <u>www.scsengineers.com</u>

02/04/2021 - Classification: Internal - ECRM7850510

State of Wisconsin Department of Natural Resources

SOIL BORING	LOG INFORMATION
form 4400-122	Rev. 7-98

Form 4400-122

Route To:

Watershed/Wastewater Remediation/Redevelopment

Waste Management Other 🗌

17. 112			40			11: 7	n '					D 1	Pa		of	6
	ity/Proje PL-Edg				SCS#- 25215125 20	License/	Permit	/Moni	toring	Numbe	r	Boring	Numb		W-30	1
				of crew chief (first, last) a	SCS#: 25215135.20 and Firm	Date Dri	lling S	tarted		IT	Date Drill	ing Cor	npleted			ing Method
Ke Ba	vin Du dger S	urst tate					12/1	5/201				12/19/			H: (n	SA/rotary nud)
WIU	nique V			DNR Well ID No.	Common Well Name	Final Sta			vel	Surf	ce Eleva			B		Diameter
		/864					Fe	eet	_			40 Fe		8.0 in.		
	Grid O Plane 1/4	of N	626	stimated:) or Bo ,196 N, 2,559,679 1/4 of Section 8,		La		0		-		Grid Lo Feel				Feet 🗌 E
Facili				County Sheboygan		County Co 60		· · · · · · · · · · · · · · · · · · ·	Town/ son T		Village					
Sa	mple							1				Soil	Prope	erties		
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	And G	Rock Description eologic Origin For ch Major Unit		uscs	Graphic	Well	Diagram PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
Г			-1	LEAN CLAY, brown	(fill).	2	ci.									
S1	17	25 78 47	2	LEAN CLAY, red bro fine to coarse sand, fir fractures, diamicton (t	own (7.5YR 4/6), moist, he gravel, stiff, gray coati ill).	with ngs on					3.0	м				
S3	24	911 45 88	6								2.25					
F			-8	Softer, brittle, crumble	28.		CL.									
S 4		24 55	-9								1.5					
L			10	Color changes to (10.5	YR 4/2).											
S5	22	34 77	12	LEAN CLAY, dark re coarse sand, fine crum	ddish gray (5YR 4/2), tra bly texture.	ice:					2.25					

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

_	g Num nple			V-301 Use only as an attachment to Form 4400-			-	-	()	Soil	Prop	ge 2 erties		
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	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			16	LEAN CLAY, red brown, trace coarse sand and fine gravel. Same as above.										
6	24	35 88	18 19 20 21	Same except dark brown (7.5YR 4/4).					2.5	М				
,	14	55 88	22	Dark brown (7.5YR 4/2).					1.0					
8	24	45 88	26 27 28 29	LEAN CLAY, dark brown (7.5YR 4/4), trace medium to coarse sand, few fine sand partings, massive, diamicton (till).	сі,				1.5					
П			-30 -31 -32 -33	Same, massive to indistinctly laminated, trace fine gravel (dolomite), subrounded (till).										
	23	45 910	-34 -35 -36 -37						1.0	Μ				
o	24	55 810		Same					1,25					

_	g Num nple			W-301 Use only as an attachment to Form		-	1			Soil	Prop	ge 3 erties		-
and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	uscs	Graphic Loe	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
11	24	55 119	-41 -42 -43 -44 -45 -46	LEAN CLAY, red brown (7.5YR 4/2). Same as above.					1.75	М				
2	24	57 99	47	Same.					0.75					
, []	24	67 1011	52 53 54 55 56		ci.				1.75					
4	24	57 1010	60						1.75					
5	24	56 78	62 63 64 64	Same, except less sand and fine gravel					2.0					

San	nple	ber		V-301 Use only as an attachment to Form 4400-1				-		Soil	Pag Prope		of	1.
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	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			66	LEAN CLAY, same as above.	¢1.									
6	24	38 814	69	SILT, light grey (5YR 6/1), laminated (lake sediment).					2.5					
			71		ML									
7	18	77 22	-74	SILTY SAND grey fine with medium to coarse					0.5					
3	12	16 18 23	75	SILTY SAND, grey, fine, with medium to coarse sand, trace fine gravel, mostly very fine sand (outwash).	SM									
ļ	24	13 9 12 14	78	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	М				
П				Same, except less sand and gravel										
	. 24	14 20 23			ci.				4.5	М				
Π	24	9 14	87						10					
1	24	9 14 19							4.0					

_	g Num		T	W-301 Use only as an attachment to Form 4400						Soil	Pag Prope		of	
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	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/
2	24	10 1:	91 92 93 2 94	LEAN CLAY, same as above. Same.	cL				2.5					
		14	-95 -96 -97											
3	22	9 11 15	-98 -99 -100 -101 -102	LEAN CLAY, dark grayish brown (10YR 4/2), massive to very indistinctly laminated, very plastic.					3.0	М				
ł	24	78 10	103	LEAN CLAY, dark grayish brown (10YR 4/2), massive to indistinclty laminated, very plastic (lake sediment).					1.5	M				
,	22	8 10 12	-110		α.				2.0	М				
5	NR		112											

San		-	- 1				-		-	Soil	Prope	erties	_	
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	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
27	24	WOR	1117 1117 1118 1119 120	LEAN CLAY, same as above. Thinly laminated (lake sediment).	CL.				3.5	М				Rods dropped
8	22	17 20 21	121	SILT, greyish brown (10YR 5/2), with clay (lake sediment).	ML				2.0	М				
9	9	19 50/3	123 124 125 125 126 127 128 129 129 130 131 131 132 133	SILTY GRAVEL, dolomite fragments, grey, with clayey silt (weathered bedrock). DOLOMITE (bedrock).	GM									S30 sampled chips from 124-128'. Lost circulation no water/mud returning.
			- 135 -	End of boring @ 135.0' Checked and edited by: BJS 3/30/2016				-						

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management Other 🛛

Facilit	y/Proje	ct Nan	ne		CONTRACTOR OF STREET	License/I	Permit	Monit	oring N	umber		Boring	Pa	er	of		
	L-Edge				SCS#: 25215135.20					_		1.5			N-30		
1.00			Name o	of crew chief (first, last)	and Firm	Date Dril	lling S	tarted		Da	te Drill	ing Cor	npleted		11 220	ing Method	
	vin Du															SA/rotary	
	lger S			DND W-II ID N-	Common Well Name	They I Char	/2015		IC. C.	e Eleva	12/7/2	2015	D.		nud)		
VIU	ique W	7863).	DNR Well ID No.	Common well Name	Final Stat	uc wa Fe		el	Surfac		.24 Fe	at	Во	orehole Diameter 8.0 in.		
ocal	Grid O			stimated: 🔲) or Bo	ring Location	<u> </u>	ге	et	-	-		Grid Lo			0.	.0 m.	
	Plane			,788 N, 2,559,719		La	t	•			Liberti			r.	- 4	Feet 🗌 E	
NE	1/4	of S		1/4 of Section 8,	T 14 N, R 23 E	Long		0	'		1.	100					
acilit				County		County Co		Civil 7	Fown/C	ity/ or	Village	1	-	-			
				Sheboygan		60		Wils	on Tr	ι.							
San	nple											Soil	Prop	erties		_	
	& in)	20	to	Soil/	Rock Description												
a	Att.	ount	Fe	And C	eologic Origin For		1.1.1				Tion			>		nts	
Typ	gth /	V Cc	h Ir		ch Major Unit	10	CS	hic	Tam	E	darc	sture	pi ti	x	0)/	
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet			and the second	U S I	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid	Plasticity Index	P 200	RQD/ Comments	
- 0	H H	14	E	LEAN CLAY, strong	brown (7.5YR 4/6) to da	ark			117	-	AT HA	~ 0					
			E_1	brown (7.5YR 3/2) m	ottled, trace fine to coars	e sand.											
П			E.														
51	13	36	-2								3.7	м					
1	15	8 10	E								5.7	IVI					
-		10.5	-3	LEAN CLAY beau	(7.5YR 4/4), trace small	finato											
_11			F	coarse sand and fine	gravel, possible clay and	gravel					1.0						
52	11	36 911	-4	fill @5' very hard, dry	, diamicton (till).						3.5	M					
11	100	2.11	E.								-						
			=5														
			E-6														
	100		Ē								10.1						
53	18	58 1014	-7	brown, trace fine to c	d, strong brown (7.5YR - barse sand, fine gravel, ve	4/6) and erv					2.5-	M					
		10 14	Ē	slightly moist (till).		-	CL				4.0						
H			-8														
_	1.1																
54	15	44 78	=9								2.0	M					
- U			E-10							1	1.1						
1.1			E														
			Eu					1									
			E														
			-12														
			Ē														
П			-13		t brown (7.5YR 4/4), ver	y hard,											
		26	Ē	cohesive (till).				1				5.0			1.1		
55	19	$\begin{smallmatrix}&3&6\\10&12\end{smallmatrix}$	=14								2.0-4.0	M					
Ш	_		E-15														
		-		rmation on this form is t					1			-	-		-		

Signature	no 1 ales	Firm	SCS Engineers	Tel: (608) 224-2830
Meghan Blodgett	Mul		2830 Dairy Drive Madison, WI 53718	Fax:

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	g Num nple			W-302 Use only as an attachment to Form 4400-1			-	1		Soil	Pag Prope		of	
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	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/
6	24	34	16 17 18 18	LEAN CLAY, brown (7.5YR 4/4), trace fine to coarse sand, fine gravel, as above (till).					1.5	М				
П			20											
7	24	23 56	-24 -25 -26 -27 -28	Same as above, except dark brown (7.5YR 4/2), more moist (till).					1.5	М				
•	20	78 79	28 29 30 31 32 33	LEAN CLAY, brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel (till).	CI.				1.0					
, []	6	56 88	33 34 35 36 37						1.0					
σ	24	58 1011	37						1.0					

-	g Num nple			W-302 Use only as an attachment to Form 4400-1		1	1	1		Soil	Prop	ge 3 erties		
and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	uscs	Graphic 1 og	Well	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
.11	19	79 11 12	41 42 43 44 45 46	LEAN CLAY, brown (7.5YR 4/2), trace fine to coarse sand, fine gravel (till).					1.5- 2.75	w				
12	18	6 10 12 12	47		a.				1.5	w				
3	24	77 1010	-52 -53 -54 -55 -56	Same as above, except less sand and gravel.					1.25	W				
14	24		57	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).	-ct				1.5	W				
15	24	79 1212	63	SILT, brown (7.5YR 5/2), massive, little clay (lake sediment).	ML				1.5	w				

 ∠Ength Att. & Recovered (in) 	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For									10.5			
18	1 ···· · · · · · ·	ğ	Each Major Unit	uscs	Combin	Log	Well	Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	14 18 30 26	66	SILT with sand, brown, massive, sand is very fine to fine.	ML						1	w				
		E-67	SILTY SAND, fine, massive. SILT WITH SAND, fine, loose, mostly very fine sand	SM	-	Ц									
20	14 25	68	(lake sediment).								M-W				Sand annear
20	14 25 38 32	E									IVI- VV				Sand appear barely wet.
		F					1								
18	21 30 34 34	-70									w				
	1.1	-71	Same.												
18	14 12	-72													
		-73	Same												
18	19 27	-74	Sante.	MI.											
10	28 28	Ē					ß								
		E					J								
18	21 29 33 30	-76													
		- 77					ł								
16	23 32 30 28	-78													
		-79													
16	1921	80			Ш	Ц					w				
10		-	POORLY GRADED SAND WITH SIL1, fine with medium, brown to gray, loose (outwash).	12.			R								
		2		SP-SM											
14	9 19 19 16	82	SILT brown little fine sand massive to indistinctly	1	-	Щ					W				
		-83	laminated (lake sediment).												
		-84					ł	K							
		85		ML											
		-86													
		Ē													
		E I	LEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel, very stiff,												
18	10 20 23 24	-89	cohesive, diamicton (till).	-CL						3.0- 4.5	W				
	18 18 18 18 16 16 14	18 21 30 34 34 18 14 12 25 24 18 19 27 28 28 18 21 29 33 30 16 23 32 30 28 16 19 21 21 27 14 9 19 19 16	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	18 21 30 34 34 -70 70 Same. 18 14 12 25 24 -71 71 Same. 18 14 12 25 24 -71 73 Same. 18 19 27 28 28 74 75 Same. 18 19 27 23 32 78 75 Same. 16 19 21 21 27 80 79 POORLY GRADED SAND WITH SILT, fine with medium, brown to gray, loose (outwash). 14 9 19 19 16 81 84 SILT, brown, little fine sand, massive to indistinctly laminated (lake sediment). 14 9 19 19 16 82 85 SILT, brown, little fine sand, massive to indistinctly laminated (lake sediment). 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).	18 21 30 34 34 69 70 Same. 18 14 12 25 24 72 Same. 18 14 12 25 24 73 Same. M. 18 19 27 33 30 74 Same. M. 18 19 27 33 30 76 Same. M. 18 19 27 30 28 78 POORLY GRADED SAND WITH SILT, fine with medium, brown to gray, loose (outwash). sr-sss 16 19 21 21 27 80 POORLY GRADED SAND WITH SILT, fine with medium, brown to gray, loose (outwash). sr-sss 14 9 19 19 16 82 -81 SILT, brown, little fine sand, massive to indistinctly laminated (lake sediment). sr-sss 18 10 20 23 24 -86 -87 st. st. 18 10 20 23 24 -88 LEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel, very stiff, cohesive, diamicton (till). -7.	3832 -69 18 2130 -70 3434 -70 18 1412 -72 18 1422 -73 18 1927 -74 18 1927 -74 18 1927 -77 18 1927 -77 18 1927 -77 16 1921 -80 77 -77 16 1921 -80 77 -78 16 1921 -80 79 -78 79 -79 16 1921 -80 79 -78 81 -79 16 1921 -80 81 -79 -78 81 -79 -79 84 -78 -79 84 -78 -79 84 -88 -79 84 -88 -79 <td>38 32 -69 18 21 30 18 14 12 18 14 12 18 19 27 71 Same. 18 19 27 73 Same. 18 19 27 73 Same. 18 19 27 74 Same. 18 19 27 74 Same. 18 21 29 76 -77 16 23 32 79 -77 16 19 21 81 -77 81 -77 81 -78 919 -82 79 -79 16 19 21 81 -79 82 -79 83 -79 84 -79 85 -79 919 -82 84 -79 84 -79 84 -79 85 -79 919 <</td> <td>38 32 -69 18 21 30 -70 38 434 -70 18 14 12 -71 18 14 12 -72 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -76 18 19 27 -76 18 19 27 -76 18 19 21 -77 16 19 21 -77 16 19 21 -78 18 19 19 -82 19 -78 -78 14 9 19 -82 18 10 20 -84 18 10 20 -84 18 10 20 -89 18 10 20 -89 18 10 20 -89</td> <td>38 32 69 18 21 30 70 34 34 70 34 34 71 18 14 12 72 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 21 29 76 74 33 30 76 77 74 18 21 27 80 POORLY GRADED SAND WITH SILT, fine with medium, brown to gray, loose (outwash). medium, brown to gray, loose (outwash). SP-SM 14 9 19 82 15 SILT, brown, little fine sand, massive to indistinctly aminated (lake sediment). 84 85 84 85 86 87 18 10 20 19 23 24 89 LEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel, very st</td> <td>38.32 69 18 21.30 70 34.34 71 18 14.12 12.5.24 72 18 19.27 18 19.27 18 19.27 18 19.27 18 19.27 18 19.27 18 19.27 18 19.27 16 23.32 17 80 16 19.21 81 9.19 14 9.19 82 81 18 81 19.16 82 19.16 83 SIL.T, brown, little fine sand, massive to indistinctly laminated (lake sediment). 83 IEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to carse sand, fine gravel, very stiff, cohesive, diamicton (till). 18 10.20 18 10.20 18 10.20 19 23.24</td> <td>38 32 69 18 21 30 70 18 14 12 72 18 14 12 72 18 12 27 74 18 12 27 74 18 12 32 74 18 12 32 75 18 21 27 74 28 28 75 18 21 27 18 21 27 16 23 32 79 16 19 21 80 POORLY GRADED SAND WITH SILT, fine with medium, brown to gray, loose (outwash). 18 9 19 18 19 21 81 81 14 9 19 82 83 18 10 20 83 SILT, brown, little fine sand, massive to indistinctly laminated (lake sediment). 84 85 85 86 86 87 88 LEAN CLAY, dark brown (7,5YR 4/2), massive, trace fine to coarse sand, fine gravel, very stiff, cohesive, diamicton (lill). 88 LEAN CLAY, dark brown (0,5YR 4/2), massive, trace fine to</td> <td>$\begin{array}{c ccccccccccccccccccccccccccccccccccc$</td> <td>13 32 69 w 18 13 34 54 69 18 14 12 77 Same. w 18 19 77 Same. M. w 18 19 77 Same. M. w 18 19 77 Same. M. w 16 19 77 Frag. W W 16 19 77 Same. Same. W 14 919 6 81 SILT, brown, little fine sand, massive to indistinctly aminated (lake sediment). SF-SM W 18 10 20 88 EEAN CLAY, dark brown (7.5 YR 4/2), massive, race fine to coarse sand, fine gavel, very stiff, cohesive, diamicton (uill). ct. 3.0- W</td> <td>18 ³³ 32 ⁻⁶⁹ ⁻⁷⁰ ^{5anne.} Same. W 18 ¹⁴ 12 ⁵² 28 ⁻⁷⁷ ⁻⁷³ ^{5anne. Same. M. 18 ¹⁴ 12 ⁵² 28 ⁻⁷⁷ Same. M. W 18 ¹² 22 ⁻⁷⁴ ⁻⁷⁷ Same. M. W 18 ¹² 22 ⁻⁷⁷ ⁻⁷⁷ ^{M. W 16 ²¹ 22 ⁻⁷⁸ ^{M. ^{M. ^{M. ^W 16 ²¹ 22 ^{R0} ^{M. ^{SP.SM ^W 14 ^{9,19} ^{88,4} ^{M. ^{M. ^W 88 ^{IIII.T. brown, little fine sand, massive to indistinetly ^{M. ^{M. ^W 18 ^{10.2.4}}}}}}}}}}}}}</td> <td>18 13 2 69 W 18 13 70 Same. W 18 14 12 72 Same. ML 18 14 12 72 Same. ML 18 12 25 74 ML ML 18 12 25 76 ML ML 18 12 25 76 ML ML 16 19 21 76 ML W 16 19 21 78 ML W 14 9 19 52 78 W 14 9 19 52 54 ML W 14 9 19 52 54 ML W 14 9 19 52 54 ML ML W 18 10 68 LEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to coarse and, fine gravel, very stoff, ct Ct 3.0- W</td>	38 32 -69 18 21 30 18 14 12 18 14 12 18 19 27 71 Same. 18 19 27 73 Same. 18 19 27 73 Same. 18 19 27 74 Same. 18 19 27 74 Same. 18 21 29 76 -77 16 23 32 79 -77 16 19 21 81 -77 81 -77 81 -78 919 -82 79 -79 16 19 21 81 -79 82 -79 83 -79 84 -79 85 -79 919 -82 84 -79 84 -79 84 -79 85 -79 919 <	38 32 -69 18 21 30 -70 38 434 -70 18 14 12 -71 18 14 12 -72 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -74 18 19 27 -76 18 19 27 -76 18 19 27 -76 18 19 21 -77 16 19 21 -77 16 19 21 -78 18 19 19 -82 19 -78 -78 14 9 19 -82 18 10 20 -84 18 10 20 -84 18 10 20 -89 18 10 20 -89 18 10 20 -89	38 32 69 18 21 30 70 34 34 70 34 34 71 18 14 12 72 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 19 27 18 21 29 76 74 33 30 76 77 74 18 21 27 80 POORLY GRADED SAND WITH SILT, fine with medium, brown to gray, loose (outwash). medium, brown to gray, loose (outwash). SP-SM 14 9 19 82 15 SILT, brown, little fine sand, massive to indistinctly aminated (lake sediment). 84 85 84 85 86 87 18 10 20 19 23 24 89 LEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel, very st	38.32 69 18 21.30 70 34.34 71 18 14.12 12.5.24 72 18 19.27 18 19.27 18 19.27 18 19.27 18 19.27 18 19.27 18 19.27 18 19.27 16 23.32 17 80 16 19.21 81 9.19 14 9.19 82 81 18 81 19.16 82 19.16 83 SIL.T, brown, little fine sand, massive to indistinctly laminated (lake sediment). 83 IEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to carse sand, fine gravel, very stiff, cohesive, diamicton (till). 18 10.20 18 10.20 18 10.20 19 23.24	38 32 69 18 21 30 70 18 14 12 72 18 14 12 72 18 12 27 74 18 12 27 74 18 12 32 74 18 12 32 75 18 21 27 74 28 28 75 18 21 27 18 21 27 16 23 32 79 16 19 21 80 POORLY GRADED SAND WITH SILT, fine with medium, brown to gray, loose (outwash). 18 9 19 18 19 21 81 81 14 9 19 82 83 18 10 20 83 SILT, brown, little fine sand, massive to indistinctly laminated (lake sediment). 84 85 85 86 86 87 88 LEAN CLAY, dark brown (7,5YR 4/2), massive, trace fine to coarse sand, fine gravel, very stiff, cohesive, diamicton (lill). 88 LEAN CLAY, dark brown (0,5YR 4/2), massive, trace fine to	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	13 32 69 w 18 13 34 54 69 18 14 12 77 Same. w 18 19 77 Same. M. w 18 19 77 Same. M. w 18 19 77 Same. M. w 16 19 77 Frag. W W 16 19 77 Same. Same. W 14 919 6 81 SILT, brown, little fine sand, massive to indistinctly aminated (lake sediment). SF-SM W 18 10 20 88 EEAN CLAY, dark brown (7.5 YR 4/2), massive, race fine to coarse sand, fine gavel, very stiff, cohesive, diamicton (uill). ct. 3.0- W	18 ³³ 32 ⁻⁶⁹ ⁻⁷⁰ ^{5anne.} Same. W 18 ¹⁴ 12 ⁵² 28 ⁻⁷⁷ ⁻⁷³ ^{5anne. Same. M. 18 ¹⁴ 12 ⁵² 28 ⁻⁷⁷ Same. M. W 18 ¹² 22 ⁻⁷⁴ ⁻⁷⁷ Same. M. W 18 ¹² 22 ⁻⁷⁷ ⁻⁷⁷ ^{M. W 16 ²¹ 22 ⁻⁷⁸ ^{M. ^{M. ^{M. ^W 16 ²¹ 22 ^{R0} ^{M. ^{SP.SM ^W 14 ^{9,19} ^{88,4} ^{M. ^{M. ^W 88 ^{IIII.T. brown, little fine sand, massive to indistinetly ^{M. ^{M. ^W 18 ^{10.2.4}}}}}}}}}}}}}	18 13 2 69 W 18 13 70 Same. W 18 14 12 72 Same. ML 18 14 12 72 Same. ML 18 12 25 74 ML ML 18 12 25 76 ML ML 18 12 25 76 ML ML 16 19 21 76 ML W 16 19 21 78 ML W 14 9 19 52 78 W 14 9 19 52 54 ML W 14 9 19 52 54 ML W 14 9 19 52 54 ML ML W 18 10 68 LEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to coarse and, fine gravel, very stoff, ct Ct 3.0- W

_	g Num nple			V-302 Use only as an attachment to Form 4400-	1					1	Soi		ge 5 erties	of	1
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	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Commente
526	20	12 18 21 25	91 92 93 94 94	LEAN CLAY, brown, massive, trace fine to coarse sand, fine gravel, as above (till). Same.	CL					-2.5	w				
27	14	17 20 22 12	96 97 98 99 100	LEAN CLAY, brown (7.5YR 5/2), massive to indistinctly laminated, trace fine gravel, red/gray laminations (lake sediment).						2.5					
28	24	8 10 13 14	101 102 103 104 105 106	LEAN CLAY, grayish brown (10YR 5/2), laminated, with very thin silt partings, very stiff, hard (lake sediment).	ĆL.					2.0					
29	24	79 1214	107 108 109 110	Same as above, except silt is concentrated in 1mm layers spaced 2-6" apart.						1.5					
30			112	Same except dark grayish brown (10YR 4/2), laminated, fewer silt partings, very plastic (lake sediment).											

San	g Num nple			V-302 Use only as an attachment to Form 4400-		1	1				,	Soil	Prop	ge 6 erties	of	
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	PID/FID	Standard	reneutation	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			116	LEAN CLAY, same as above, very plastic, laminated (lake sediment).												
·	24	78 1012	-118 -119 -120		CL.					1.0	1					S30 was not collected
2	24	9 10 12 13	-121	Same.						0.5- 1.0						
3	24	11 13 18 18	123	Same as above, very plastic, laminated, few silt partings (lake sediment).						2.0						
5 5 5	24	14 22 30/5	124	LEAN CLAY WITH SAND, grayish brown, sand is fine.	a					0.5						
, ,	24	30 25 28 24	-126 -127	SILT WITH SAND, grayish brown, mostly very fine sand, cohesive. LEAN CLAY WITH SAND, grayish brown, sand is	ML					0.5						
3 =			128	fine, some silt, laminated to thinly bedded clay and silt (lake sediment).												
	24		129	Thinly bedded silty fine sand and clay.	CL.					0.5- 1.0						
°Ц	6	21 19 50/3	-131	With dolomite gravel.												
			-133	DOLOMITE, light gray and brownish gray, dark and light laminations, massive, some pitted and vuggy, mostly without mineralization, vertical fractures common.			7									
			135		DOLOMIT	1	/									
	0	50/3	-137			1	1									Generation
	0		-139	Shaly zone (6') at ~138.5. gray, mineralized fractures below 139'.		1										Convert to re coring. Run 133'-143'-No water return below 139'.

Sam	y Numb		MW	V-302 Use only as an attachment to Form 4400-						Soil	Prope		of	
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	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			141	DOLOMITE (bedrock). Very vuggy and mineralized vugs and fractures below 142'.	DOLOMIT									TCR=126/120 TCR=100% SCR=103/120 SCR=86% MCR=68.5/12 MCR=57%
			- 144	Blind drilled 144-148'										RQD=57% Fair
				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										
	9													

SOIL BORING LOG INFORMATION

Fax:

Form 4400-122 Rev. 7-98

Route To:

 Watershed/Wastewater
 Waste Management

 Remediation/Redevelopment
 Other

1000		ct Nan			Canada and a second	License/I	Permit	/Monito	oring N	umber		Boring	Numb		U DA	2
	L-Edge			for the first of the second se	SCS#: 25215135.20	Den					- D 11				V-30	
Key	in Du	irst	Name of	f crew chief (first, last) a	nd Firm	Date Dril			-	Da	te Drilli				HS	ing Method SA/rotary
	ger St			DNR Well ID No.	Comment Well Mente	Final Stat		0/201		1Curfage	e Eleva	12/4/2	2015	ID.		ud) Diameter
WIUR		7865		DNK well ID No.	Common Well Name	Final Sta	fe Wa		ei	Surfac		60 Fe	at	BO		.0 in.
ocal	Grid Or			timated: 🗌) or Bo	ring Location	1	FC	ci	-	-	Local C				0.	.0 m.
	Plane	of S	625,	616 N, 2,560,451 /4 of Section 8,		La		0			Locuix				1	Feet 🗆 E
acilit		01 5		County		County Co				'ity/ or '	Village	-				w
San	ple			Sheboygan		60		WIIS	on Tr	1.	1	Soil	Prope	erties		-
r Je	Att. & red (in)	ounts	n Feet		cock Description cologic Origin For				-		d tion	p		ty		ants
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Ead	ch Major Unit	-	USCS	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid	Plasticity Index	P 200	RQD/ Comments
			10	LEAN CLAY, strong plasticity, mottled colo	brown (7.5YR 4/6), mec oring, trace coarse sand.	1						1				
Π									81							
51	14	12 24	-2				CL				1.5	м				
Ц			-3													
			E-4								1.0					
S2 , B	14	41 22	-5	SILTY SAND layer, fi	ine to coarse @ 5-5.5'.		SM	h			0.75	M				
П			6	LEAN CLAY, (7.5YR	4/4), trace sand, fine to	coarse,										
53	24	47	7	fine gravel, very stiff,	firm, massive, diamicton	(till).					2.8-	w				
L		1011	-8								4.0		(
П			-9													
S4	18	25 79	10	Same.							3.0	w				
Ц			-11				CL.									
			-12													
			13													
Π			-14					1				5				
S5	22	23 46	-15								1-1.8	w				

 Zach Watson
 Multiple
 For 7.400
 2830 Dairy Drive Madison, WI 53718
 F

 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.

_	g Numl nple			V-303 Use only as an attachment to Form 440			1-			Soil	Prop	ge 2 erties	51	1
and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic I oo	Well	Diagram PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
5	24	34 68	16 17 18 19 20 21 21	LEAN CLAY, (7.5YR 4/4), as above.					2.0	w				
,[]	24	35 67	23 24 25 26 27	Same.					1.5- 2.0	w				
	24	36 78	27 28 29 30 31 31	Same.	CI.				1.5	w				
	24	35 79	33						2.2	w				
o	6	69 11 13	-37 38 39 40	Same as above, except very soft and saturated.					NA	w				

_	g Numi nple		T	V-303 Use only as an attachment to Form 4400-				1	11.2	Soil	Prop	ge 3 erties		-
and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Wcll Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1	6	10 12 12 16	41 42 43 44 45 46 47	LEAN CLAY, (7.5YR 4/4).						w				
2	24	56 810	48 49 50 51	(no sample retained)					1.3	w				
3	21	37 79	-53	LEAN CLAY (7.5YR 4/4), fine to coarse sand, fine gravel, firm, massive, diamicton (till).	CI.				1.0	w				
+	19	10 11 13 10	56 57 58 59 60 61 62	Same.					1.0	w				
Π	11	46 911	63 64 65						0.5	w				

loring San	ple		1	V-303 Use only as an attachment to Form 4400-1			1		1	Soil	Prop	ge 4 erties	of	7
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	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Commente
16	4	9 34 50/5	66 67 68 69 70 71 71	Same. LEAN CLAY WITH SAND, brown (7.5YR 4/4), soft, sand fine to coarse.					0	w				
17	7	8 12 12 13	73	Some as above, except trace fine to coarse sand.	CL.				0	w				
8	24	36 57	-77 -78 -79 -80 -81 -82	Same as above except, soft in some areas and stiff in others.					0.5	w				
9	15	19 22 25 31	-83 -84 -85	SANDY SILT, (10YR 5/4), fine sand, very uniform grains, loose, mostly very fine sand, non-plastic.						w				
D	3	16 16 23 25			ML					w				
	20	20 18 13 14	88	LEAN CLAY, brown (7.5YR 4/4), trace coarse sand, massive to indistinctly laminated (lake sediment).	ci.					w				

_	g Num nple			V-303 Use only as an attachment to Form 4400-						-	Soil		ge 5 erties		-
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	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
22	18	35 38 23 30 19 12 12 13	-95	Same with layers of SANDY SILT, yellowish brown (10YR 5/4), fine, loose (lake sediment).	CL					1.0	w				
24		24 28 34 50/- 36 50/:	103 104 4 105	SANDY SILT, yellowish brown (10YR 5/4) fine, mostly very fine sand, loose (lake sediment).	ML						w				
6	23	32 22 20 24	108 109 110 111 111 112	LEAN CLAY, with layers of SILT, SAND (lake sediment as above).	CL.					3.2	w				
7	3	50/5	-114	SILTY SAND, (10YR 5/4).	SM	11				1.2	w				

San	g Num nple		MW		-122.	T			1	1	Soil	Pag Prop		of	
and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Granhic	Log	Well	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Commente
28	5	50/4	116	LEAN CLAY, 7.5 YR 5/2, trace gravel.	CL.					2.5	w				
29	5	50/5	119	SILTY SAND WITH GRAVEL, fine, with medium and coarse sand, greys, blues whites and browns, gravel is fine and coarse.							w				
30	8	41 50/-	122	SILTY SAND, fine to coarse grained, trace fine gravel, fine (outwash).							w				
31	2	50/4	-123 -124 -125		SM						w				
12	10	31 50/4	126	Same.							w				
ы а	3	50/5	128								w				
4	4	50/4	131	SILT, some gravel, very dense/stiff (weathered bedrock).	MI.					4.5	w				
			-133 -134 -135	DOLOMITE (bedrock).											
			135		DOLOMITI		/ /								
			138				Ľ								
			E_140					E							

_	y Numb	115		V-303 Use only as an attachment to Form		1	1	1	1	Soi		ge 7 erties	of	
and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Wcll Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			141	DOLOMITE (bedrock).	DOLOMIT									
			- 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 Remediation/Redevelopment

Waste Management Other 🗌

				_			1								-	Pag	-	of	6
	y/Proje L-Edg					SCS#. 25215125 20		ense/Per	rmit	Monit	oring	Num	ber	1.1.1	Boring	Numb		N-30	14
				f crew c	hief (first, last) a	SCS#: 25215135.20		te Drillin	ng S	tarted	-	-	Dat	te Drilli	ng Con	npleted		a section of the	ling Method
Ke	vin Du iger S	irst	Turne o	a crew c	iner (mai, ital) i		Du			5/2010	5				1/26/2			H	SA/rotary nud)
WIU	nique W			DNR	Well ID No.	Common Well Name	e Fina	al Static			/el	Sı	irface	e Elevat			Bo		Diameter
_		/866		1					Fe	et					48 Fe			8	.0 in.
	Grid O Plane	rigin	[] (e	204 N	: []) or Bor I, 2,558,156	ing Location 🖂 E S/C/N	1	Lat .		ø	$(0)_{ij}$			Local C					
SW		of S		/4 of Se		T 14 N, R 23 E		Long		ò	τ.,		"		Feel				Feet 🗌 E
Facilit		or o		174 01 50	County	1 11 H, K 25 E		ty Code		Civil	Fown/	City	or V	/illage		-			
					Sheboygan		60				son T						_		£
Sar	nple								T.						Soil	Prope	erties		
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet		And Ge	ock Description cologic Origin For ch Major Unit			USCS	Graphic Los	Well	Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S1	14	25 611		LEAN sand,	N CLAY, brown fine gravel.	(7.5YR 4/6), with fine	e to coa	rse	a	0				3.5	M			I	
S2	14	46 59	4 4 4 5	LEAN	as above, except N CLAY, brown ive, stiff.	dark brown. (7.5YR 4/6), with silt	layers,			-				3.5	M				
\$3	24	25 811	16 17 17 18	LEAN	ICLAN brown	(7.5YR 4/4), with fine								3.25	М				
S4	24	45 910	10 10 11 11	sand,	fine gravel, mass	fine to medium grain	ill).		CL.					3.25	М				
Só	24	24 45	13	-	NCLAY, as abov									1.5	М				
	· · · · · · ·	y that	the info	rmation	on this form is tr	ue and correct to the b	best of n	ny know	vled	ge.	-							-	
Signat	ure Larsoi	/	n.l.	710	r for J		CS Eng			45	111 62	710					Πđ	Tel: (6	08) 224-2830
106	Laisoi	1 /	XVV	MI	100 0	283	30 Dairy	y Drive	Ma	alson,	WI 53	0/18	-						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.

	g Numl nple			V-304 Use only as an attachment to Form 440		1	1	T			Soil	Prop	ge 2 erties		
and Type	Length Att. & Recovered (in)	Blow Counts	T Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic	Well	Diagram	PID/FID	Standard Penetration			ty.	P 200	RQD/ Comments
7	22	34 46	16 17 18 19 20 21	LEAN CLAY, brown (7.5YR 4/4), as above (till).						1.25	М				
3	22	23 56	22 23 24 24 25 26												
, []	24	24 67	-27 -28 -29 -30		CL.					1.0	М				
o []	24	35 69	-32 -33 -34 -35 -36							1.0	М				
ı	24	36 812	-36 -37 -38 -39 -40	Same with fine silt partings.						2.5	м				

	ple	ber		V-304 Use only as an attachment to Form 4400-		-				100	Soil	Prop		of	
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	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			41	LEAN CLAY, brown.	cī.										
2	24	4 4 5 8	-43 -44	CLAYEY SILT, brown (7,5YR 4/6).	ML						м				
			45	LEAN CLAY WITH SAND, brown (7.5YR 4/6), fine to coarse.	CL.										
3	24	24 46	48	LEAN CLAY, brown (7.5YR 4/6).						0.75	w				
			51		cL										
	24	45 811	54	SILTY SAND, brown, fine to medium grained.	SM	\vdash	4			1.5	М				
I			55	CLAYEY SAND, fine to coarse.	sc										
n			58												
	16	5 13 23 25	59 60	POORLY GRADED SAND WITH SILT, grey (10YR 4/2), fine to medium grained (outwash).			T			0.5	w				
	12	8 LI 18 20	61	Same.	SP-SM						w				
	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										

_	ple									-	Soil	Prop	erties		6
and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Wall	Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Commente
8	20	14 19 15 15	66	LEAN CLAY, brown (7.5YR 4/6).						2.5	М				
			67		CL.										
,	8	50/5	69	LEAN CLAY, with layers of SILT, fine to coarse sand (lake sediment).						4.5	м				
U			70												
			72												
		8 10 15 17	73	LEAN CLAY, dark brown (7.5YR 4/2), laminated, very plastic (lake sediment).						1.25	м				
U			75		ci.										
			77		. Cu										
Π	24	7 11 14 15	-78	Same with few silt partings, very stiff.						2.75					
l		14 15	80												
			81												
d		25.50/5	83	×	-		1								
_	12	25 50/5	-84	SILTY SAND, grey, fine to coarse grained, dense, trace gravel.						>4.5					
	16	21 34 42 46			SM						w				
	i	50/2	87	Limestone rock fragments, with fine and coarse gravel.											
H			89												

_	g Num nple	-		V-304 Use only as an attachment to Form 4400-		1	- 1				1	Soil	_	ge 5 erties		
s number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit Same, diamicton.	USCS	Graphic	Log	Well	Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			-91	Sunty dumeton.												
26	2	50/5	-92		SM											S26 was skippe
7	24	34 31 42 52/:	-93 -94	SILTY SAND and SILT, except dark grayish brown (10YR 4/2), sandstone fragments, fine sand, fine gravel, cohesive, brittle.					and the second se			w				
-	14	30 39 50/3	95		SM							w				
-	12	20 34 50/5	97									w				
0	12	37 50/4	- 99 	FAT CLAY WITH GRAVEL, brown (7.5 4/3), sandstone fragments, fine to coarse sand, fine gravel.	СН				ł		4.5	w				
a	12	16 35 50/4	101	SILTY SAND, dark grayish brown (10YR 4/2).	SM				ľ		1.5	w				
Н			-103	LEAN CLAY, very dark brown (7.5 YR 2.5/2). SILTY SAND, dark grayish brown (10YR 4/2), fine	CL	T	-		ł			0				
2	18	17 35 50/4	104	grained.	SM							w				
3	8	17 50/2	105	SANDY LEAN CLAY, dark brown (7.5YR 3/2), trace gravel.	cı						4.0	w				Bedrock at 100 ft bgs.
4	2	50/3	107	SILTY SAND, dark grayish brown (10YR 4/2), fine grained, (weathered bedrock).	SM											
H	\subset		E-109	DOLOMITE, gray (7.5YR 6/1), angular fragments.	1	1						8				
5	NA		110													
			112		DOLOMIT			1111								
V			-113			-										
Ň			-115			-	1	TITT								

le	er		Use only as an attachment to Form 4400		1			1	Soil		ge 6 erties		1
Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
NA		116	DOLOMITE, gray (7.5YR 6/1), angular fragments.	DOLOME									
		-118	End of boring @ 118' Logged by: Joe Larson: 0-93' Kyle Kramer: 93-118' Checked and edited by: BJS 3/30/2016										
			*										
	Yr Recovered (in)	PA Recovered (in) Blow Counts	Ar Recovered (in) Blow Counts	Image: Selection of the second of the sec	Soil/Rock Description And Geologic Origin For Each Major Unit SA III6 DOLOMITE, gray (7.5YR 6/1), angular fragments. III7 III8 End of boring @ 118' Logged by: Joe Larson: 0-93' Kyle Kramer: 93-118' Checked and edited by: BJS 3/30/2016	Image: Second state	Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description High DOLOMITTE, gray (7.5YR 6/1), angular fragments. DOLOMITTE, gray (7.5YR 6/1), angular fragments.	Soli/Rock Description Soli/Rock Description And Geologic Origin For S Each Major Unit S Soli/Rock Description S Hild DOLOMITE, gray (7.5YR 6/1), angular fragments. Solowith OLOMITE, gray (7.5YR 6/1), angular fragments. Solowith Image: Solowith Introduction Image: Solowith Image: Solowith Image: Solowith	Soil/Rock Description Soil/Rock Description And Geologic Origin For SO Each Major Unit SO Barbon DOLOMITE, gray (7.5YR 6/1), angular fragments. DOLOMITE, gray (7.5YR 6/1), angular fragments. Dotom Hift Logged by: Logged by: Joe Larson: 0-93' Kkyle Krame: 93-118' Checked and edited by: BJS 3/30/2016	Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description And Geologic Origin For Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/R	Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description And Geologic Origin For Soli/Rock Description Soli/Rock Description Image: Soli/Rock Description DoLOMITE, gray (7.5YR 6/1), angular fragments. Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description Image: Soli/Rock Description	Soil/Rock Description Soil/Rock Description And Geologic Origin For S Each Major Unit S Soil/Rock Description S High DOLOMITE, gray (7.5YR 6/1), angular fragments. Ling Dolomite (2) Ling Ling Ling Dolomite (2) Ling Dolomite (2) Ling Ling Ling Ling Ling Dolomite (2) Ling Ling Ling Ling	Soil/Rock Description Soil/Rock Description And Geologic Origin For Back Major Unit Each Major Unit Soil/Rock Description MA Image: Construction of the second

State of Wisconsin Department of Natural Resources

SOIL BORING	LOG	INFORMATION
Form 4400-122		Rev. 7-98

Form 4400-122				
	Form	n 44	-00-	122

Rev. 7-98

Route	To:	W

atershed/Wastewater Remediation/Redevelopment Waste Management Other 🗌

													Pag		of	7
	y/Projec	et Nam	e			License/	Permit/	Monito	ring N	umber		Boring				
	L I43	- Dr. 7	Nama of	f crew chief (first, last) a	SCS#: 25217032.00	Date Dri	Iling St	artad			te Drilli		MW-	.303		ling Method
	in Du		vanie of	i crew cilier (first, last) a	uiu riim	Date Dri	ning SI	aneu			ue Drill	ng Con	ipieled			mig wiethou
			rilling	I .			1/30	/2017				2/2/2	017		Н	SA/Rotary
	ique W	ell No		DNR Well ID No.	Common Well Name	Final Sta	tic Wa	ter Leve		Surfac	e Elevat	ion		В	orehole	Diameter
		<u>7819</u>			MW-305		Fe	et				46 Fe			6	.3 in.
Local State	Grid Or Plana	rigin		timated: 🗌) or Bo ,435 N, 2,559,946		La	t	0			Local C	brid Loc				
State		of SI		/4 of Section 8 ,	T 14 N, R 23 E	Long		0	,			Feet				Feet E E
Facilit				County		County Co		Civil T	own/C	ity/ or	l Village					
·				Sheboygan		60		Wilse		-	U					
San	nple				······································			1				Soil	Prope	erties		
	& (in)	s	et	Soil/I	Rock Description											
. o	Att. ed (ount	n Fe	And G	eologic Origin For						ion	0		~		nts
Typ	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Ea	ch Major Unit		CS	Graphic Log	l gran	PID/FID	ndard	Moisture Content	it it	Plasticity Index	200	
Number and Type	Len Rec	Blo	Dep				US	Grap Log	Well Diagram	L DID	Standard Penetration	Moisture Content	Liquid Limit	<u>Plastic</u> Index	P 2(RQD/ Comments
				TOPSOIL.				11 2								
			÷.					<u>4 44</u>								
Π				LEAN CLAY, strong	brown (7.5YR 4/6).											
S 1	8	22 4									1.75					
01	Ŭ	4	-2						NM N	2				1		
			-3											1		
Π			E													
		48	-4													
S2	14	48 11									4.5+					
			-5													
							2 2									
П			-6				ŀ									
			E				CL									
S3	18	711 14	-7								4.5+					
			Ē													
			-8													
-			-													
			-9													
S4	18	4 10 9	- 7								4.5+					
		,	- 10													
			-10													
								ļ								
			-12				<u> </u>									

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

Signature DI D 11/	Firm	SCS Engineers	Tel: (608) 224-2830
hyle flow -		2830 Dairy Drive Madison, WI 53711	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. 02/04/2021 - Classification: Internal - ECRM7850510

Boring Num Sample			7-305 Use only as an attachment to Form 440	0-122.	1	1	1	C - 1	Pag Prope		of	/
Number and Type Lengtl. Att. & Recovered (in)	Blew Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log Well	Diagram PID/FID	Stardard Penetration			2	P 200	RQD/ Comments
55 18	468		Same as above except, brown (7.5 YR4/3).				2.5					Mud Roatary (15 ft bgs.
36 18	469	-17 -18 -19 -20 -21	Same as above except, trace gravel.	CI.			4.5+					
57 18	467	-23 -24 -25 -26 -27					3.0					
18	4 6 7	-29 -30	,				2.0					

	g Numl	ber	MW	7-305	Use on	ly as an at	tachment	to Form 44	400-122.							P	ıge	3	of	7
San	nple														Soil	Prop	ertie	es		
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet		And G	Rock Desc eologic Or ch Major I	igin For		USCS	Granhic	Log	Well	PID/FID	Standard Penetration	Moisture Content	Liquid	Plasticity	Index	P 200	RQD/ Comments
59	18	5 8 9												2.5						
S10	18	4 7 9							CL					2.5						
S11	18	37 8	-42 43 44 44 45 46						ct.					2.5						
S12	18	3 9 13	-47 -48 -49 -50 -51											2.0						
			-52	02/04/	2021	- Clas	sific	ation:	Inter	nal		EC	RM785	50510						

Samp	Numt ole			V-305 Use only as an attachment to Form 4400	<u>J-122.</u>						Soil	Pag Prope		of	/
	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic	LOG	Diagram	PID/FID	Standard Penetration			A.	P 200	RQD/ Comments
	18	55 8	- 53 - 54 - 55 - 56	Same as above except, brown (7.5YR 4/3).						2.5					
is an anticept interaction of the second sec	18	55 6	- 57 - 58 - 59 - 60 - 61		CL					1.5					
	12	55 16								3.0					
		13 16 16		POORLY GRADED SAND, gray (10YR 5/1), medium to coarse grained.	SP										
	20	14 19 20 22	— 71 	SILTY SAND, brown (7.5YR 4/3), fine grained.	GM .										
			-72	SIL1Y SAND, brown (7.5YR 4/3), fine grained.	SM										

Borin	g Numl	ber	MW	√-305 Use only as an attachment to Form 4400-1	22.							Pag	ge 5	of	7
	nple										Soil	Prope			
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Fcet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic	Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S18	16	99 1016	-73	LEAN CLAY, brown (7.5YR 4/3).	SM					5					
S19	18	8 16 18 21	74 75 76	POORLY GRADED SAND, gray (10YR 5/1), fine to medium grained.	CL		-								
S20	16	8 18 20 23	77												
S21 _	16	15 20 23 30	- 79												
S22	16	15 23 26 31	81												
S23	18	21 18 29 31			SP										
S24	18	17 30 33 33													
S25	16	15 20 30 30		02/04/2021 - Classification: In	ltern	nal		ECI	RM785	50510					

	g Numl	oer	MW	7-305 Use only as an attachment to Form 440	0-122.	montant				T			More throat too			ge 6	of	7
San	nple			0.105 t 25 1 1									Soi	I P	rop	erties		-
0	Length Att. & Recovered (in)	unts	Depth In Feet	Soil/Rock Description And Geologic Origin For								on						its
Number and Type	igth A	Blow Counts	oth In	Each Major Unit	CS	- iqu	Log		Diagram	PID/FID	Standard	etrati	Moisture	- Print	Limit	Plasticity Index	00	RQD/ Comments
Nur and	Len Rec	Blo	Der		U S C	1	Log Log	LIe/W	Dia	DIG	Star	Pen	Cor Cor		<u>7</u> <u>-</u>	Plastic Index	P 200	CorRQ
			-93															
0.24	10	18 23						5 	si									
S26	18	18 23 25 29						A										
			- 95															
			- 96															
			-97							- 								
			-98	and the set of the						4 1 2 7 7 4 1 2 7 7 4 1 2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7								
S27	14	10 22 24 25	-99	Same as above except, trace coarse gravel.				i) Stario		19 14								
		2123																
18_16									Barrit Resort	2								
			-101		SP													
					5													
			- 102 -															
			-103	Same as above except, trae coarse gravel.				 6										
								1										
S28	12	13 13 10 18	- 104 -						- - -									
			-105															
			-															
			- 106 -															
			-107															
			-															
			- 108 -						· · · · ·									
S29	12	23 42 50/0.5	-109															
		50/0.5	E															
			-111	DOLOMITE, gray (10YR 5/1), weathered.														
ļ			-112	02/04/2021 - Classification:	 : Inte:	 rr	/ nal	-	• E(CRM7	 '850)51	 10					

	ig Numł	ber	MW	V-305 Use only as an attachment to Form 4400-12	2.		1				Pa	ge 7	of	7
Sar	nple			Soil/Rock Description						Soil	Prop	erties		
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S30 —			113 114 115 116 117 118 119 120 121	End of boring at 121 ft bgs. 02/04/2021 - Classification: Int	zern			RM785	0510					

PP : Edgewater 143 $C259679 n.$ $WW : Will contine to the contrasted: VW : WW : Unique Well No. [DNR Well ID NO. [DN$	And the second s	Vatershed/Wastewater	Waste Managemen	Form 4400-113A Rev: 7-98
Billing Lease, Permit or Monitoring No. Least	Facility/Project Name WPL-Edgewater 143	Local Grid Location of Well 626196.3 ft	XN. 2559679 ft. W	Well Name MVV-301
Calling 460022090 Section 10003 at $N_1 = 255073.0$ fr. E. SC/MDate Well resulting $1.1 + 14./ - 2016$ med $2.550673.0$ fr. E. SC/MDate Well resulting $1.4 + 2.2016$ Well Code $12_/ P2$ Will a of ScouresThe Well code $12_/ P2$ Will a of ScouresThe Well code $0.7 + 14$ N. R. 23 B fr.Well code $12_/ P2$ Well code $0.7 + 2.7$ fr. Mat.Control Well Code $0.7 + 2.7$ fr. Mat.Sector Code Well Ration code $0.7 + 2.7$ fr. Mat.Protective or pipe:Code $0.97 + 2.21$ fr. Mst.Intermediate classionCode $0.97 + 2.21$ fr. Mst.Intermediate classion0.97 + 2.21 fr. Mst.Intermediat		Local Grid Origin (estin	mated:) or Well Location	VV864 DNR Well ID No.
pe of Well Section Location of Walf/Source Surface Section Surface Section <td>Facility ID 460022090</td> <td>St. Planc 626196.3 ft.</td> <td>N. 2559679.0 ft. E. S/C/</td> <td>N1/14/2016</td>	Facility ID 460022090	St. Planc 626196.3 ft.	N. 2559679.0 ft. E. S/C/	N1/14/2016
Batting from Wate/ End. Stats. u Upgradient. Badger State Drilling Protective pipe, top elevation 697. 21. ft. MSL. 1. Cap and lock? 2. Protective cover pipe: 1. Cap and lock? 2. Surface seal, battom 694. 40 n. MSL. -7. ft. 2. USCS classification of goil reserver: 694. 40 n. MSL. -7. ft. 2. Material: Other 0. Additional protection? EX Yes Nt. 2. USCS classification of goil reserver:	Type of Well	SW1/4 of NE 1/4 of Se	c. 8, T. 14 N, R. 23	E Well Installed By: Name (first, last) and Fin
Well casing, top elevation 666 96 ft. MSL2. Protective cover pipe: a. Totic defameter:4 in b. Landthild immeter:Land surface levation 694 40 ft. MSL7.0Surface stal, bottom 593 .90 ft. MSL or 0.5 ft.2. USCS dessification of soil near ecreant: CPStelStel2. USCS dessification of soil near ecreant: CPStelStel2. USCS dessification of soil near ecreant: CPStelStel2. USCS dessification of soil near ecreant: CPStelStel3. Sicve analysis performed?VesNo4. Drilling method used: Hollow Stem Auger CoherAttriate space stal: CoherCoher3. Sirve analysis performed?VesNo4. Drilling fluid used: Water $X = 0.2$ Air $D = 0.1$ Coher0.1 Cher5. Drilling fluid used: 		u Upgradient s	Sidegradient	Badger State Drilling
Well casing, top elevation 0.01 <th< td=""><td>A. Protective pipe, top elevation -69</td><td></td><td></td><td></td></th<>	A. Protective pipe, top elevation -69			
Link subject closum693 $90 \text{ fr. MSL or } 0.5 \text{ fr.}$ Surface seal;Surface seal	. Well casing, top elevation69	5. 96 ft. MSL		Λ
Surface seal, bottomSee \mathbb{X} C. Material:See \mathbb{X} C. Material:See \mathbb{X} C. Material:See \mathbb{X} C. Material:See \mathbb{X} See \mathbb{X} See \mathbb{X} Concrete \mathbb{Y} See \mathbb{X}	Land surface elevation 69	4. 40 ft. MSL		7 a.
2. USCS classification of soil near screen: CP _ CM _ CC _ CW _ SW _ SY _ SP _ Kin		Service	c. Material:	Steel 🗶 04
CIP SMCRCCWHSWSPBetrockMHCLCHHBetrockSteve analysis performed?YesNo3. Siver canalysis performed?YesNo4. Drilling method used:RotaryS 04. Drilling method used:RotaryS 05. Drilling fluid used:Water0 1Drilling fluid used:Water0 2Air []OtherBentonite5. Drilling additives used?YesNoCoscreteTermie0 06. Drilling additives used?YesNoCoscreteTermie0 07. Source of water (attach analysis, if required):Site Supply Well8. Bentonite seal, top566.40 ft. MSL or125 ft.Filter pack, top569.40 ft. MSL or122 ft.Filter pack, top562.40 ft. MSL or132 ft.Filter pack, top562.40 ft. MSL or132 ft.Filter pack, bottom562.40 ft. MSL or132 ft.Borehole, diameter-60 in.O.D. well easing-24 in.O.D. well easing-24 in.I.D. well casing-19 in.<		1 K		
Bedrock \boxtimes 3. Surface seal:Concrete03. Sieve analysis performed?YesNo4. Drilling method used:Rotary \boxtimes 50Hollow Stem Auger \boxtimes 41OtherOtherImage: Step Sign and protective piece5. Drilling fluid used:Water \boxtimes 02Air \square 01Diffing method used:5. Drilling fluid used:Water \boxtimes 02Air \square 01Diffing additives used?DescribeImage: Step Sign Add of the MSL or2. Step Supply WellStep Sign Add ft, MSL orFilter pack, top569.40 ft, MSL orFilter pack, top562.40 ft, MSL or562.40 ft, MSL or132 ft.Filter pack, bottom562.40 ft, MSL or569.40 ft, MSL or132 ft.Filter pack, bottom562.40 ft, MSL orStereen joint, top562.40 ft, MSL orStereen type:Factory cutI. D. well casing1.9 in.O. D. well casing2.4 in.I. D. well casing1.9 in.O. D. well casing1.9 in.I. D. well casing1.9 in.D. D. well casing1.9 in.Derehole, diameter8.0 in.O. D. well casing1.9 in.D. Sec		w SP I	If yes, descr	ribe: ves, bumper posts (3)
4. Drilling method used: Rotary ≥ 30 4. Drilling method used: Rotary ≥ 30 Hollow Stem Auger ≥ 41 Other Stem Stem Auger ≥ 9 Stem Stem Auger ≥ 9 6. Drilling additives used? Yes $\ge No$ Describe Bentonite starry ≥ 3 7. Source of water (atach analysis, if required): Tremie ≥ 0 Site Supply Well Tremie ≥ 0 Bentonite seal, top $= 566.40$ ft. MSL or $= 123$ ft. Tremie ≥ 0 Filter pack, top $= 567.40$ ft. MSL or $= 127$ ft. Stem Stem added $= 0.5185$ ft. Screen joint, top $= 562.40$ ft. MSL or $= 132$ ft. Stem of the added $= 0.5185$ ft. Filter pack, bottom $= 562.40$ ft. MSL or $= 132$ ft. Stem of the added $= 0.5185$ ft. Borehole, bottom $= 562.40$ ft. MSL or $= 132$ ft. Stem of the added $= 0.5185$ ft. Borehole, bottom $= 562.40$ ft. MSL or $= 132$ ft. Stem of the added $= 0.5185$ ft. Borehole, bottom $= 562.40$ ft. MSL or $= 132$ ft. Stem of the added $= 0.5185$ ft. Borehole, bottom $= 562.40$ ft. MSL or $= 132$ ft. Stem of the			3. Surface scal:	
Hollow Stem Auger $[] 41$ Other $]$ Bentonite $] 3$ Other $]$ 5. Drilling fluid used: Water $[] 02$ Drilling Mud $] 03$ None $] 99$ 6. Drilling additives used? $] Yes [] No] 996. Drilling additives used?] Yes [] No] 99] Use [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Use [] Mud weight Bentonite salary] 33] 0. 200 [] Mud weight Bentonite salary] 33] 0. 200 [] Mud weight Bentonite salary] 33] 0. 200 [] Mud weight Bentonite salary] 33] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Bentonite salary] 34] 0. 200 [] Mud weight Multicaturer, product name & mesh sin and material: Munufacturer, product name & mesh si$	and a second state of the second s			
OtherImage: constraint of the stand stan		00	4. Material betwee	
5. Drilling fluid used: Water 🔊 0 2 Air 0 1 Drilling fluid used: Water 🖄 0 2 Air 0 1 Drilling fluid used: Water 🖄 0 2 Air 0 1 Drilling fluid used: Water 🖄 0 2 Air 0 1 Diriling fluid used: Water 🖄 0 2 Air 0 1 Diriling fluid used: Water 🖄 0 2 Air 0 1 S. Drilling additives used? Yes 🕅 None Describe			Ohio	
5. Drilling fluid used: Water X0 2 Air 0 1 Drilling Mud 0 3 None 999 0 1 0 3 None 999 6. Drilling additives used? Yes X No Describe			A 652	
Drilling Mud0 3None9 96. Drilling additives used?YesNoDescribe7. Source of water (attach analysis, if required):Site Supply WellBentonite seal, top 566.40 ft. MSL orFilter pack, top 569.40 ft. MSL orFilter pack, top 569.40 ft. MSL orScreen joint, top 567.40 ft. MSL orScreen joint, top 562.40 ft. MSL orStel burgWell bonom 562.40 ft. MSL orScreen joint, top 562.40 ft. MSL orStereen joint, bottom <td>15. Drilling fiuid used: Water X 0 2</td> <td>Air 01</td> <td></td> <td></td>	15. Drilling fiuid used: Water X 0 2	Air 01		
6. Drilling additives used? Yes No 6. Drilling additives used? Yes No Describe F1 avolume added for any of the above 7. Source of water (attach analysis, if required):	Drilling Mud 0 3 N	one 99		
e r1 violate add to if y of the added to if added to if the added to added to if the added to added to if the added to i			d% Beni	tonite Bentonite-cement grout 50
Describe Tremie pumped 0 7. Source of water (attach analysis, if required): Tremie pumped 0 Site Supply Well 6. Bentonite seal; a. Bentonite sganules 3 Bentonite seal, top 566.40 ft. MSL or 118 ft. 112 ft. Fine sand, top 571.40 ft. MSL or 125 ft. 5. 2 Bags Other 3 Filter pack, top 567.40 ft. MSL or 125 ft. 5. Volume added 0.5 lbs ft. ³ Screen joint, top 567.40 ft. MSL or 127 ft. 5. Volume added 3.5 ft. 5. Well borom 562.40 ft. MSL or 132 ft. 132 ft. 10. Screen material: Manufacturer, product name & mesh si a. Borehole, bottom 562.40 ft. MSL or 132 ft. 10. Screen material: PVC a. Screen type: Factory cut 2 Borehole, diameter -8.0 in. in. 0. <t< td=""><td>16. Drilling additives used?</td><td>es X No</td><td>e</td><td></td></t<>	16. Drilling additives used?	es X No	e	
7. Source of water (attach analysis, if required): If remue pumped $X = 0$ Site Supply Well Gravity Bentonite seal, top 566,40 ft. MSL or 118 ft. Fine sand, top 571.40 ft. MSL or 123 ft. Filter pack, top 569.40 ft. MSL or 125 ft. Screen joint, top 567.40 ft. MSL or 127 ft. Screen joint, top 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Filter pack, bottom 559.40 ft. MSL or 132 ft. Filter pack, bottom 559.40 ft. MSL or 132 ft. Borehole, diameter 8.0 in. O.D. well casing 24 in. 0. O.D. well casing 24 in. 0. I.D. well casing 1.9 in.	December		f. How install	
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Bentonite seal, top $566.40 \text{ ft.} \text{ MSL or} = 118 \text{ ft.}$ Fine sand, top $571.40 \text{ ft.} \text{ MSL or} = 123 \text{ ft.}$ Filter pack, top $569.40 \text{ ft.} \text{ MSL or} = 125 \text{ ft.}$ Filter pack, top $567.40 \text{ ft.} \text{ MSL or} = 127 \text{ ft.}$ Screen joint, top $567.40 \text{ ft.} \text{ MSL or} = 127 \text{ ft.}$ Well bourom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Filter pack, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, bottom $562.40 \text{ ft.} \text{ MSL or} = 132 \text{ ft.}$ Borehole, diameter $= 8.0 \text{ in.}$ O.D. well casing $= 2.4 \text{ in.}$ O.D. well casing $= 2.4 \text{ in.}$ I.D. well casing $= 1.9 \text{ in.}$ I.D. well casing $= 0.0 \text{ in.}$ I.D. well casing $= 0.0 \text{ in.}$ I.D. well casing $= 0.0 \text{ in.}$ I.D. well casing <td></td> <td>neu).</td> <td></td> <td></td>		neu).		
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Prite saild, up It wish of	Bentonite seal, top 566.40 ft, MS	Lor 118 A.	A Bool /	
Screen joint, top 567.40 ft. MSL or 127 ft. Well borrom 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Filter pack, bottom 559.40 ft. MSL or 135 ft. Borehole, bottom 559.40 ft. MSL or 135 ft. O.D. well casing 2.4 in. 0 ther I.D. well casing 1.9 in. in. I.D. well casing <			7. Fine sand mote	
Screen joint, top 567.40 ft. MSL or 127 ft. Well borrom 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Filter pack, bottom 562.40 ft. MSL or 132 ft. Borehole, bottom 559.40 ft. MSL or 135 ft. Borehole, diameter 8.0 10. Screen material: PVC a. Continuous slot 0 b. Manufacturer Monoflex 0.01 ft. Continuous slot 0.01 ft. Borehole, diameter in. Other 10. Screen material: PVC a. Continuous slot 0 D. well casing in. 0.01 ft. I.D. well casing in. I.D. well casing in. I.D. well casing in. 11. Backfill material (below filter pack): None Bedrock cuttings/slough Other 1 Bedrock cuttings/slough Other 1	Filter pack, top569.40 ft. MS	or 125 ft.		
Well botrom $562.40 \text{ ft.} \text{ MSL or} = -\frac{132 \text{ ft.}}{132 \text{ ft.}}$ 9. Well casing:Flush threaded PVC schedule 402Filter pack, bottom $562.40 \text{ ft.} \text{ MSL or} = -\frac{132 \text{ ft.}}{132 \text{ ft.}}$ 9. Well casing:Flush threaded PVC schedule 802Borehole, bottom $-\frac{559.40}{10.5 \text{ creen material:}}$ PVCBorehole, diameter $-\frac{8.0}{}$ in.10. Screen material:PVCO.D. well casing $-\frac{2.4}{}$ in.0. Other1I.D. well casing $-\frac{1.9}{}$ in.0. Other0. OtherI.D. well casing $-\frac{1.9}{}$ in.11. Backfill material (below filter pack):NoneI.D. well casing $-\frac{1.9}{$	I. Screen joint, top567.40 ft. MS.	L or127_ft		Ohio #5
Filter pack, bottom $562.40 \text{ fr. MSL or}$ 132 fr. Image: Non-Addition of the state of the	. Well boutom 562.40 ft. MS	or132ft.	b. Volume ad 9. Well casing:	Flush threaded PVC schedule 40 23
Borehole, bottom ft. MSL or 135 ft. Borehole, diameter				Other 🔂 🛶
Borehole, diameter = 8.0 = in. Other Other . O.D. well casing = 2.4 = in. b. Manufacturer Monoflex . O.D. well casing = 2.4 = in. 0. 01 0. I.D. well casing = 1.9 = in. 11. Backfill material (below filter pack): None 1 Bedrock cuttings/slough Other 1 1 Bedrock cuttings/slough 0	Borehole, bottomft. MS	or135ft.		Factory cut 11
O.D. well casing - 2.4 in. in. 0. 01 i I.D. well casing - 1.9 in. in. - 5 I.D. well casing - 1.9 in. 11. Backfill material (below filter pack): None 1 Bedrock cuttings/slough Other X 1	. Borehole, diameter 8.0 in.			Other 🗌 🐘
I.D. well casing 1.9 in. 11. Backfill material (below filter pack): Bedrock cuttings/slough None 1 tereby certify that the information on this form is true and correct to the best of my knowledge. Other X 1	1. O.D. well easing -2.4 in.		c. Slot size:	001 in
tereby certify that the information on this form is true and correct to the best of my knowledge.	I. I.D. well casing $-\frac{1.9}{-1}$ in.		11. Backfill mater	ial (below filter pack): None 1 4
law-	hereby certify that the information on this	form is true and correct to th		
SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751	gnature all a th	Firm		

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and hureau. 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.

	Remediation/Redevelopment C	Other	
Facility/Project Name WPL-143	Local Grid Location of Well N. 625788.4 ft. S.		
Facility License, Permit or Monitoring No 02853	Local Grid Origin (estimated:		Well No. DNR Well ID No.
Facility ID 460022090	St. Planc 625788.4 ft. N. Section Location of Waste/Source	2539719.0 ft. E. S/C/N Date Well In	stalled $\underline{-1}/\underline{-15}/\underline{-2016}$ $\underline{-1}/\underline{-15}/\underline{-2016}$
Type of Well Well Code <u>12 / PZ</u>		TN, RW Keyin Du	d By: Name (first, last) and Firm
Distance from Waste/ Enf. Stds. Sourceft. Apply	u Upgradient s Sid	angediant	State Drilling
A. Protective pipe, top elevation -2	0281 ft. MSL	1. Cap and lock?	X Yes No
B. Well casing, top elevation 7	02. 57 ft. MSL	2. Protective cover pipe: a. Inside diameter:	⁴ in.
C. Land surface elevation7	00. 24 ft. MSL	b. Length:	<u> </u>
D. Surface seal, bottom69974 ft. M	SL or 0.5 ft.	c. Material:	Steel 🔀 04
		d. Additional protection? If yes, describe: yes, bum	
Bedrock X 13. Sieve analysis performed?		3. Surface scal:	Bentonite X 30 Concrete 01
The second s	Yes No htary X 50	4. Material between well casing an	
Hollow Stem A	uger 🔀 41 🛛 🖉 🕅		Bentonite 30
	Other una	Ohio #5 sand- 2 bag	gs Other 23 ular/Chipped Bentonite 33
15. Drilling fluid used: Water X0 2	Air 01	5. Annular space seal: a. Grant bLbs/gal mud weight	
Drilling Mud 0 3	None 99	c. 200 Lbs/gal mud weight	Bentonite slurry 🔀 31
16. Drilling additives used?	Yes X No		Sentonite-cement grout 50 of for any of the above
		f. How installed:	Tremie X 01
Describe	wind)	1. 1000 0000000	Tremie pumped 🔀 02
Site supply well	uneu).	6 Bentindia and	Gravity 08 a. Bentonite granules 33
		 Bentonite seal: b	
	SL or128 ft.	/ c 2 Baos	Other 🗌 🚛
F. Fine sand, top 567.24 ft. M	SL or133 ft.	7. Fine sand material: Manufactu 1 bag Oh	
G. Filter pack, top 565.24 ft. MS	SL or 135 ft.	b. Volume added	0.5 ft ³
H. Screen joint, top563.24 ft. M		8. Filter pack material: Manufactu Ohio	urer, product name & mesh size
558 24	SLor 142ft.	b. Volume added	<u>3 ft³</u>
EE0 04			led PVC schedule 40 23 led PVC schedule 80 24
Filter pack, bottom 558.24 ft. M		10. Screen material:	Other
K. Borehole, bottom ft. M	SL or148 ft.	a. Screen type:	Factory cut 11
L. Borehole, diameter $-\frac{8.0}{-1}$ in.			Other 🗌 🔬
M. O.D. well casing -2.4 in.		b. Manufacturer <u>M</u> c. Slot size; d. Slotted length:	001_in. 5 ft.
N. I.D. well casing $-\frac{1.9}{-1.9}$ in.		11. Backfill material (below filter p Limestone Chip	back): None 14
hereby certify that the information on this	s form is true and correct to the best of		
Signature	Firm		T
Mala Ela for N.H.		EERS, 2830 Dairy Drive, Madison, W	1 50740 0754

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.

P	emediation/Redevelopment Ot	hor	
Facility/Project Name WPL-143	Local Grid Location of Well N. 625615.5 ft. S.	2560451 ft. W.	Well Name MW-303
Facility License, Permit or Monitoring No. 02853	Local Grid Origin (estimated: Lat Long.) or Well Location X	Wis. Unique Well No. DNR Well ID No. VV865
Facility ID 460022090	St. Plane 625615.5 ft. N, Section Location of Waste/Source	2560451.0 ft. E. S/C/N	Date Well Installed $\frac{12}{m}$ $\frac{12}{d}$ $\frac{03}{y}$ $\frac{2015}{y}$
Type of Well Well Code <u>12</u> / <u>PZ</u>	SW1/4 of NE 1/4 of Sec. 8. Location of Well Relative to Waster		Well Installed By: Name (first, last) and Firr Kevin Durst
Distance from Waste/ Enf. Stds. Sourceft. Apply	u Upgradient s Side d Downgradient n Not	egradient Known	Badger State Drilling
A. Protective pipe, top elevation $2 - 719$		1. Cap and lock?	
B. Well casing, top elevation	9. 25 ft. MSL	x. Inside diameter:	6
C. Land surface elevation71	6. 60 ft. MSL	b. Length:	<u> </u>
D. Surface seal, bottom71610 ft. MS		c. Material:	Steel 🔀 04
	Restoration 100		
		11	ection? X Yes No : Ves. bumper posts (3) Bentonite X 30
Bedrock X		3. Surface scal:	Concrete 01
	res No	N	Other 🗌 🛄
	ary X 50	Material between	well casing and protective pipe: Bentonite 30
Hollow Stem Au	her	Ohi	o #5 sand Other 🔀
		5. Annular space sea	STRATE.
15. Drilling fiuid used: Water X0 2	Air 01	bLbs/gal m	ud weight Bentonite-sand slurry 35
Drilling Mud 0 3 N	fone 99 88	c150_Lbs/gal m	ud weight Bentonite slurry 🔀 31
16. Drilling additives used?	les 🕅 No		te Bentonite-cement grout 50
			volume added for any of the above Tremie 1 01
Describe	📓 📓	f. How installed:	Tremie pumped X 02
17. Source of water (attach analysis, if requ	ired):		Gravity 08
Site supply well		6. Bentonite seal:	a. Bentonite granules 33
E. Bentonite seal, top588.60 ft. MS.	Lor 128 ft.	b /4 in. X3	8/8 in. 1/2 in. Bentonite chips 32
	or133 ft.	7. Fine sand material	l: Manufacturer, product name & mesh size
		/ a	Ohio #7
G. Filter pack, top581.60 ft. MS	Lor135 ft.	b. Volume added	
H. Screen joint, top 579.60 ft. MS	or137 ft	8. Filter pack materia	al: Manufacturer, product name & mesh size Ohio #5
574 60	142 .	b. Volume added	
I. Well boutom 574.60 ft. MS		9. Well casing:	Flush threaded PVC schedule 40 2 3 Flush threaded PVC schedule 80 X 24
I. Filter pack, bottom 574.60 ft. MS			Other
K. Borehole, bottom ft. MS	Lor143ft.	10. Screen material: B. Screen type:	Factory cut X 11
L. Borehole, diameter $-\frac{6.0}{-1}$ in.		\	Continuous slot 0 1
M. O.D. well casing -2.4 in.		b. Manufacturer c. Slot size: d. Slotted length:	Model flex 001_ in.
N. I.D. well casing $\frac{1.9}{-}$ in.		11. Backfill material (
I hereby certify that the information on this	form is true and correct to the best o	f my knowledge.	
Signature	Firm		

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Section Location of Waste/Source mmdd vy Type of Well Well Code 12 PZ Section Location of Waste/Source Molecan Participation Well Installed By: Name (first, last) a Kevin Duerst Distance from Waste/ Enf. Sids. Location of Well Relative to Waste/Source Sidegradient Well Installed By: Name (first, last) a Kevin Duerst Budger State Drilling Downgradient n Nor Known Gov. Lot Number Weil Installed By: Name (first, last) a Kevin Duerst B. Well casing, top elevation 691. 97 ft. MSL I. Cap and lock? Xes Badger State Drilling C. Land surface clevation 689. 48 ft. MSL Nor Known I. Cap and lock? Xes I. Cap and lock? Xes Restore C. Land surface clevation 689. 48 ft. MSL Yes Nor Known I. Cap and lock? Xes Xes B. Other Side clevation 689. 48 ft. MSL Yes No Op GM GC GW Symptotic CH Symptotic CH Symptotic CH Symptotic CH I. Surface seal, bottom	2016 y y nd Fim 5 ft. 3 0 4 No 3 0 3 1 3 3 3 1 3 1
02853 Lat. Long. For Facility ID St. Plane 624204.0 ft. N. 2558156.0 ft. E. S/C/N Type of Well Swild of ME 1/4 of Sec. 8. T. 14 N. R. 23 Weil Installed By: Name (first, last) a Weil Code 12 / PZ Swild of NE 1/4 of Sec. 8. T. 14 N. R. 23 Weil Installed By: Name (first, last) a Source ft. Apply Upgradient s Sidegradient Badger State Drilling Source ft. Apply 0 Owngradient n Not Known A. Protective pipe, top elevation 691. 97 ft. MSL 1. Cap and lock? Image: Concert is the first is	2016 y y nd Fim 5 ft. 3 0 4 No 3 0 3 1 3 3 3 1 3 1
Facility ID 460022090 St. Plane 624204.0 ft. N. 2558156.0 ft. E. St.C/N Date Well installed 1/26/2/2/2/2/2 Type of Well Well Code 12 / PZ Sw1/4 of NE 1/4 of Sec. 8.T. 14 N. R. 23 Well installed 1/26/2/2/2 Vell Code 12 / PZ Well Installed 1/26/2/2 Well Installed 1/26/2/2 Vell Rotation of Waste/Source Well Installed 1/26/2/2 Vell Rotation of Waste/Source Well Installed No Kevin Duerst Badger State Drilling Source ft. Apply 1 Opengradient No No Kevin Duerst Badger State Drilling A. Protective pipe, top elevation 691.97 97 ft. MSL 1. Cap and lock? 2. Protective cover pipe: a. Inde d invector: b. Length: c. Material: 0. Unter 1/2 1/2 Yes No D. Surface seal, bottom 689.48 ft. MSL 97 0. If Yes No 1/2 Yes No SM SC ML MH CL CH Badger State Drilling 1/2 Yes Yes Yes No No 1/2 <td>y y nd Fim 5 ft. 3 0 4 No 3 0 1 3 0 3 3 3 3 3 5 3 1</td>	y y nd Fim 5 ft. 3 0 4 No 3 0 1 3 0 3 3 3 3 3 5 3 1
Type of Well Section Location of Waste/Source Swit4 of NE 1/4 of Sec. 8. T. 14 N. R. 23 Well Installed By: Name (first, last) a Keyin Duerst Distance from Waste/ Enf. Stds. U Upgradient s Stdegradient n Not Known Source ft. Apply d Downgradient n Not Known n A. Protective pipe, top elevation 691. 97 ft. MSL 1. Cap and lock? X Yes B. Well casing, top elevation 691. 97 ft. MSL 2. Protective cover pipe: a. Inside diameter: b. ength: D. Surface seal, bottom 689. 48 ft. MSL - 0. Sterilitie: ves. bumper posts SM SC ML MH CL CH Bedrock X Steel 2. Steel X 0. Additional protection? X ves Downgradient 13. Sieve analysis performed? Yes No None X 9. 0. Additional protection? Sentonite Sentonite 14. Drilling fluid used: Water X of 2 Air 0.1 Sentonite	nd Fim No 6 in. 5 ft. 0 4 No 3 0 1 30 3 3 3 3 3 3 3 1
Distance from Waste/ Sourceft Applyd DowngradientSidegradientBadger State Drilling A. Protective pipe, top elevation692 38 ft. MSL B. Well casing, top elevation69197 ft. MSL B. Well casing, top elevation69197 ft. MSL C. Land surface clevation68898 ft. MSL or0.5 ft. D. Surface seal, bottom68898 ft. MSL or0.5 ft. 12. USCS classification of soil near screen: OPGMGCGWSWSP Bedrock ⊠ 13. Sieve analysis performed?Yes ∑No 14. Drilling method used: Rotary ∑ 5 0 Hollow Stem Auger ∑ 41 Other 15. Drilling fluid used: Water ∑0 2 Air0 1 Drilling Mud0 3 None ∑ 9 9 16. Drilling additives used?Yes ∑No Describe 17. Source of water (attach analysis, if required): Site supply well Site supply well Site supply well Site supply well Site supply well Distance from Waster Zign and protective is a. Bentomite seal: a. Bentomite seal: Bentomite seal: Bentomite seal: Bentomite seal: Bentomite seal:	6 in. 5 ft. 0 4 No 3 0 1 30 3 10 3 10 10 10 10 10 10 10 10 10 10
B. Well casing, top elevation 691. 97 ft. MSL C. Land surface elevation 689. 48 ft. MSL D. Surface seal, bottom68898 ft. MSL or0.5 ft. b. Length; c. Material: Other 12. USCS classification of soil near sereen: OP OP GM GC Bedrock ≥ MH 13. Sieve analysis performed? Yes ≥ No 14. Drilling method used: Rotary ≥ 50 Hollow Stem Auger ≥ 41 Other Other Store seal: a. Granular/Chipped Bentonite b	6 in. 5 ft. 0 4 No 3 0 1 30 3 10 3 10 10 10 10 10 10 10 10 10 10
B. Well casing, top elevation 0.51. 1. 1. 1. MSL a. Inside diameter:	<pre>30 30 30 30 33 33 35 31</pre>
D. Surface seal, bottom68898 ft. MSL or0.5 ft. 12. USCS classification of soil near screen: OPGMGCGWSWSP SMSCMLMHCLCH Bedrock Z 13. Sieve analysis performed?Yes XNo 14. Drilling method used: Rotary X 5 0 Hollow Stem Auger X 4 1 Other 15. Drilling fluid used: Water X0 2 Air0 1 Drilling Mud0 3 None X 9 9 16. Drilling additives used?Yes XNo Describe 17. Source of water (attach analysis, if required): Site supply well Ste Ste Ste Ste Ste Ste Ste Ste Ste Ste	<pre>30 30 30 30 33 33 35 31</pre>
D. Surface seal, bottom68898 ft. MSL or0.5 ft. 12. USCS classification of soil near screen: GPGMGCGWSWSP SMSCMLMHCLCH Bedrock \boxtimes If yes, describe:yes, bumper posts 13. Sieve analysis performed?Yes \bigotimes No 14. Drilling method used: Rotary \bigotimes 5 0 Hollow Stem Auger \bigotimes 4 1 OtherG. Annular space scal:Granular/Chipped Bentonite 5. Annular space scal:Granular/Chipped Bentonite 6C200 Lbs/gal mud weight Bentonite-sand slurry cGBentonite Bentonite-cement grout 6Ft ⁻² volume added for any of the above f. How installed:Tremie \boxtimes Tremie \boxtimes Gravity 6. Bentonite scal: a. Bentonite scal: a. Bentonite scal: Bentonite chips /	No 01 01 30 30 33 33 33 31
12. USCS classification of soil near screen: GP GW SW SP GP GW GC GW SW SP SM SC ML MH CL CH Bedrock X If yes, describe: ves. bumper posts 3. Sieve analysis performed? Yes X No 14. Drilling method used: Rotary X 50 Hollow Stem Auger X 41 Other Other Sand Other X 5. Drilling fluid used: Water X 02 Air 0 1 Drilling mudd 0 3 None X 99 S. Annular space seal: a. Granular/Chipped Bentonite b.	30 01 30 30 33 33 35 31
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 Other Sand Other X 15. Drilling fluid used: Water X 0 2 Air 0 1 Drilling Mud 0.3 None X 99 S. Annular space seal: a. Granular/Chipped Bentonite b.	01 30 33 33 35 31
Bedrock X 3. Surface seal: Bentonite Z 13. Sieve analysis performed? Yes X No 14. Drilling method used: Rotary X 50 Hollow Stem Auger X 41 Bentonite Other Sand Other X 15. Drilling fluid used: Water X0 2 Air 0 1 Drilling Mud 0 3 None X 9 9 16. Drilling additives used? Yes X No Describe	01 30 33 33 35 31
13. Sieve analysis performed? Yes X No 14. Drilling method used: Rotary X 50 Hollow Stem Auger X 41 Bentonite Other Sand Other Sand 15. Drilling fluid used: Water X 0 2 Material between well casing and protective pipe: Sand Other Sand Other Sand Other Sand Drilling fluid used: Water X 0 2 Material between well casing and protective pipe: Sand Other Sand Other Sand Drilling fluid used: Water X 0 2 Material between well casing and protective pipe: Sand Stepsile Stepsile 16. Drilling additives used? Yes X No Describe	30 33 33 35 31
14. Drilling method used: Rotary × 50 Hollow Stem Auger × 41 Bentonite Other Bentonite 15. Drilling fluid used: Water × 02 Air 01 Drilling Mud 03 None × 99 Sentonite 16. Drilling additives used? Yes × No Describe	33 35 31
Other	33 35 31
15. Drilling fluid used: Water ≥ 0 2 Air □ 0 1 Drilling Mud □ 0 3 None ≥ 9 9 16. Drilling additives used? Yes ≥ No Describe	33 35 31
15. Drilling fluid used: Water ≥ 0 2 Air 0 1 Drilling Mud 0 3 None ≥ 99 16. Drilling additives used? Yes ≥ No Describe Fi ³ volume added for any of the above f. How installed: Tremie pumped Gravity Site supply well 6. Bentonite seal: a. Bentonite granules bL/4 in. ≥ 3/8 in. 1/2 in. Bentonite chips >	35
Drilling Mud 0 3 None 99 c. 200 Lbs/gal mud weight Bentonite slurry 16. Drilling additives used? Yes No Describe	
16. Drilling additives used? Yes XNO Describe	1 0 0
Describe PT volume added for any of the above Describe PT volume added for any of the above 17. Source of water (attach analysis, if required): FT Volume added for any of the above Site supply well FT Volume added for any of the above b. FT Volume added for any of the above f. How installed: Tremie [X] Gravity	50
Describe	10 1
Site supply well 6. Bentonite seal: a. Bentonite granules b. 4 in. 3/8 in. 1/2 in. Bentonite chips	02
b /4 in. X 3/8 in. 1/2 in. Bentonite chips	08
	33
E. Bentonite seal, top586.48 ft, MSL or103 ft.]
F. Fine sand, top581.48 ft. MSL or108 ft. aOhio #5	sh size
G. Filter pack, top579.48 ft. MSL or10 ft. b. Volume added0.5 ft.	
H. Screen joint, top577.48 ft. MSL or12 ft8. Filter pack material: Manufacturer, product name & me	sh size
I. Well bottom 572.48 ft. MSL or 117 ft b. Volume added ft. 3 9. Well casing: Flush threaded PVC schedule 40 Flush threaded PVC schedule 80	23
J. Filter pack, bottom572.48 ft. MSL or117 ftOtherOther	24
K. Borehole, bottom ft. MSL or ft Factory cut	
L. Borehole, diameter 6.0 in.	01
	01 in.
N. I.D. well casing in in 11. Backfill material (below filter pack): None 🔀	_5ft.
I hereby certify that the information on this form is true and correct to the best of my knowledge.	(54) E0-14

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SCS # 2517032.00

1

	Watershed/Wastewater	waste Managemen For	DNITORING WELL CONSTRUCTION m 4400-113A Rev. 7-98
Facility/Project Name	Remediation/Redevelopment	Other	11 N
WPL - Edgewater 143	Local Grid Location of Well	Sft. W.	MW-305
Facility License, Permit or Monitoring No	Local Grid Origin (estimated to the state of	a 1 11	is. Unique Well No. DNR Well ID No. VY819
Facility ID	St. Plane 623435.13 ft. N. Section Location of Waste/Sour	2559945.85 ft. E. S/C/N Da	the Well Installed $\frac{2}{m} \frac{d}{m} \frac{2}{d} \frac{2}{d} \frac{2}{v} \frac{2017}{v}$
Type of Well	Provide a contractor of the second second		ell Installed By: Name (first, last) and Firm
Well Code 12 / PZ	1/4 of1/4 of Sec	,TN, KW	Kevin Duerst
Distance from Waste/ Enf. Stds. Sourceft. Apply	Location of Well Relative to W u Upgradient s d Downgradient n	aste/Source Gov. Lot Number Sidegradient	Badger State Drilling
A. Protective pipe, top elevation	717.88 ft. MSL	1. Cap and lock?	X Yes No
B. Well casing, top elevation	717.67 ft. MSL	2. Protective cover pipe	
$\mathbf{D}_{\mathbf{r}}$ is the contraction $\mathbf{r} = -$	11000	a. Inside diameter:	
C. Land surface clevation	715.46 ft. MSL	b. Length:	5 n.
D. Surface seal, bottom 713.46 ft. M	SL or2 ft.	c. Material:	Steel 🗙 04
	Real Provide Aug	J	Other
12. USCS classification of soil near scree		d. Additional protect	
	SW SP	If yes, describe:	yes, bumper posts (3)
	сг Сн 🗆 🛛 📈	3. Surface scal:	Bentonite 30
			Concrete X 01
	Yes No	×	Other
14. Drilling method used: Ro	otary 🔀 50	4. Material between we	I casing and protective pipe:
Hollow Stem A			Bentonite 30
0	Other	#5 R.W. Sidley	Other 🗶
		5. Annular space seal:	a. Granular/Chipped Bentonite 33
15. Drilling fluid used: Water X0 2	Air 01	bLbs/gal mud	weight Bentonite-sand slurry 35
Drilling Mud 0 3	None 99 8		weight Bentonite slurry 🔀 31
17 B 30 - 10 - 10 - 10		d % Bentonite	Bentonite-cement grout 50
16. Drilling additives used?	Yes X No	8 9.4 Ft ³ vo	lume added for any of the above
	100	f. How installed:	Tremie 01
Describe	🔛		Tremie pumped 02
17. Source of water (attach analysis, if req	uired):	88	Gravity 08
Site Supply Well		6. Bentonite seal:	a. Bentunite granules 33
		b /4 in. × 3/8	n. $1/2$ in. Bentonite chips 32
E. Bentonite seal, top 609.46 ft. MS	SL or106 ft.	/ c.100 lbs	Other
F. Fine sand, top 603.46 ft. MS	SL or112 ft.	7. Fine sand material:	Manufacturer, product name & mesh size
F. Fine sand, top003.40 ft. MS	storn	MA /	
		#7 R.W. Sidley	
G Filternack ton 602.46 fr MS	I or 113 m	a. #7 R.W. Sidley	
G. Filter pack, top 602.46 ft. MS	SL or113 ft.	b. Volume added	<u> </u>
		b. Volume added 8. Filter pack material:	0.5 ft ³ Manufacturer, product name & mesh size
G. Filter pack, top602.46 ft. MS H. Screen joint, top600.46 ft. MS		b. Volume added 8. Filter pack material: a	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley
H. Screen joint, top 600.46 ft. MS	SL or ft.	b. Volume added 8. Filter pack material: a b. Volume added	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³
	SL or ft.	b. Volume added 8. Filter pack material: a b. Volume added 9. Well casing: Fil	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 2 3
H. Screen joint, top600.46 ft. MS . Well bottom595.46 ft. MS	SL or115 ft.	b. Volume added 8. Filter pack material: a b. Volume added 9. Well casing: Fil	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 [2 3] ush threaded PVC schedule 80 [2 4]
H. Screen joint, top600.46 ft. MS . Well bottom595.46 ft. MS	SL or ft.	a b. Volume added 8. Filter pack material: a b. Volume added 9. Well casing: FI FI	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 2 3 ush threaded PVC schedule 80 24 Other
H. Screen joint, top600.46 ft. MS . Well bottom595.46 ft. MS . Filter pack, bottom594.46 ft. MS	SL or 115 ft. SL or 120 ft. SL or 121 ft.	ab. Volume added 8. Filter pack material: a b. Volume added 9. Well casing: Fil Fil 10. Screen material:	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 2 3 ush threaded PVC schedule 80 24 Other PVC
H. Screen joint, top600.46 ft. MS . Well bottom595.46 ft. MS . Filter pack, bottom594.46 ft. MS	SL or115 ft.	a b. Volume added 8. Filter pack material: a b. Volume added 9. Well casing: FI FI	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 2 3 ush threaded PVC schedule 80 24 Other PVC Factory cut 11
H. Screen joint, top 600.46 ft. MS Well bottom 595.46 ft. MS Filter pack, bottom 594.46 ft. MS C. Borehole, bottom 594.46 ft. MS	SL or 115 ft. SL or 120 ft. SL or 121 ft.	ab. Volume added 8. Filter pack material: a b. Volume added 9. Well casing: Fil Fil 10. Screen material:	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 [23] ush threaded PVC schedule 80 [24] Other PVC Factory cut [11] Continuous slot [X] 01
H. Screen joint, top 600.46 ft. MS Well bottom 595.46 ft. MS Filter pack, bottom 594.46 ft. MS C. Borehole, bottom 594.46 ft. MS	SL or 115 ft. SL or 120 ft. SL or 121 ft.	a b. Volume added 8. Filter pack material: a b. Volume added 9. Well casing: Fil Fil 10. Screen material: a. Screen type:	O.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 2 3 ush threaded PVC schedule 80 24 Other PVC Factory cut 11 Continuous slot 🗵 01 Other
H. Screen joint, top 600.46 ft. MS Well bottom 595.46 ft. MS Filter pack, bottom 594.46 ft. MS Borehole, bottom 594.46 ft. MS Borehole, diameter 6.25 in.	SL or 115 ft. SL or 120 ft. SL or 121 ft.	ab. Volume added8. Filter pack material: ab. Volume added9. Well casing: File 10. Screen material:a. Screen type: b. Manufacturer	O.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 2 3 ush threaded PVC schedule 80 24 Other PVC Factory cut 1 1 Continuous slot 🗵 01 Other
I. Screen joint, top 600.46 ft. MS Well bottom 595.46 ft. MS Filter pack, bottom 594.46 ft. MS Borehole, bottom 594.46 ft. MS Borehole, diameter 6.25 in.	SL or 115 ft. SL or 120 ft. SL or 121 ft.	ab. Volume added 8. Filter pack material: a 9. Well casing: Fil 9. Well casing: Fil 10. Screen material: a. Screen type: b. Manufacturer c. Slot size:	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 □ 2.3 ush threaded PVC schedule 80 □ 2.4 Other □ ++ PVC Factory cut □ 11 Continuous slot ⊠ 01 Other □ 001 in.
H. Screen joint, top 600.46 ft. MS Well bottom 595.46 ft. MS Filter pack, bottom 594.46 ft. MS Borehole, bottom 594.46 ft. MS Borehole, diameter 6.25 in. M. O.D. well casing 2.4 in.	SL or 115 ft. SL or 120 ft. SL or 121 ft.	 a b. Volume added 8. Filter pack material: a b. Volume added 9. Well casing: File 10. Screen material: 10. Screen material: a. Screen type: b. Manufacturer b. Manufacturer b. Manufacturer	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 □ 2.3 ush threaded PVC schedule 80 □ 2.4 Other □ PVC Factory cut □ 11 Continuous slot ⊠ 01 Other □ 001 in. 5 ft.
H. Screen joint, top 600.46 ft. MS Well bottom 595.46 ft. MS Filter pack, bottom 594.46 ft. MS K. Borehole, bottom 594.46 ft. MS Borehole, diameter 6.25 in.	SL or 115 ft. SL or 120 ft. SL or 121 ft.	ab. Volume added 8. Filter pack material: a 9. Well casing: Fil 9. Well casing: Fil 10. Screen material: a. Screen type: b. Manufacturer c. Slot size:	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
H. Screen joint, top 600.46 ft. MS Well bottom 595.46 ft. MS Filter pack, bottom 594.46 ft. MS Borehole, bottom 594.46 ft. MS Borehole, diameter 6.25 in. M. O.D. well casing 2.4 in.	SL orft. SL orft. SL orft. SL orft.	 a	0.5 ft ³ Manufacturer, product name & mesh size #5 R.W. Sidley 1.5 ft ³ ush threaded PVC schedule 40 □ 2.3 ush threaded PVC schedule 80 □ 2.4 Other □ PVC Factory cut □ 1.1 Continuous slot ⊠ 0.1 Other □ 001 in. 5 ft.

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State of Wisconsin Department of Natural Resources

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Wast	ewater	Waste Management	X			
Remediation/Re	levelopment	Other				
Facility/Project Name	County Name	······	Well Name			
Alliant Energy I-43	Sh	eboygan		MW-	301	
Facility License, Permit or Monitoring Number	County Code 59	Wis. Unique Well N <u>VV-86</u>		DNR Well ID	Number	
	es 🗙 No	11. Depth to Water (from top of			ter Development 46 34 ft.	
2. Well development method		well casing)	a	<u>- +5 ft.</u>	<u></u> II.	
· · ·	41	wen dasmg)				
surged with block and bailed	61 42 62 70				$\frac{02}{m m} \frac{16}{d} \frac{16}{y}$	<u>2016</u> уууу
compressed air	20 10	Time	c . <u>12</u> : <u>50</u>	a.m. × p.m	$16: 00 \qquad \texttt{x} \text{ p.m.}$	
pumped only	51	12. Sediment in well	— — · -	_ inches	inches	
pumped slowly	50	bottom				
Other		13. Water clarity	Clear 10 Turbid X 15		r 🗙 2 0 bid 🗌 2 5	
3. Time spent developing well	<u>190 min.</u>		(Describe)		cribe)	
1 (1)	2.9_ft.		Medium brown o Very turbid		um brown color tly to moderately turbid	
5. Inside diameter of well $-\frac{2}{-}$.	0 in.					
6. Volume of water in filter pack and well casing18	2 gal.	Eill is if deilling fluid			d waste facility	
7. Volume of water removed from well 31	5 gal.	Fill in if drilling fluid			-	
8. Volume of water added (if any)	<u></u> gal.	14. Total suspended solids	• ·	mg/l	mg/l	
9. Source of water added		15. COD		mg/l	mg/l	
		16. Well developed by	•	·		
10. Analysis performed on water added? Y (If yes, attach results)	es 🗙 No	First Name: Nate		ast Name: Har		
		Firm: SCS ENGIN	IEERS, 2830 D	airy Drive, M	adison, WI 53718	

17. Additional comments on development:

Name an First Name:	d Address of Facility Contact /Owner/Responsible Party Jim Last Name: Jakubiak	I hereby certi of my knowle	fy that the above information is true and correct to the best edge.
Facility/F	im: WP&L Alliant Energy	Signature:	Matt 1
Street:	3739 Lakeshore Drive	Print Name:	Nate Havins
City/Stat	e/Zip: <u>Sheboygan, WI 53082</u>	Firm: SC	S ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

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

02/04/2021 - Classification: Internal - ECRM7850510

State of Wisconsin Department of Natural Resources

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Wastev	vater	Waste Management	X			
Remediation/Rede	velopment	Other				
Facility/Project Name	County Name		Well Name		· · · · · · · · · · · · · · · · · · ·	
Alliant Energy I-43	Sh	eboygan		٨	/IW-302	
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Nu VV-863		DNR Wel	1 ID Number 	
 Can this well be purged dry? Yes Well development method surged with bailer and bailed 4 surged with bailer and pumped 6 surged with block and bailed 	1	well casing)	a. <u>51</u> .	<u>23</u> ft.	After Development51,24 ft.	2016
surged with block and pumped 6 surged with block, bailed and pumped 7 compressed air 2 bailed only 1 pumped only 5 pumped slowly 5	2 0 0 0 1	Time 12. Sediment in well bottom	c. <u>11 ; 55</u>	x a.m. p.m.	$\frac{016}{y} \frac{02}{m} \frac{16}{d} \frac{16}{y}$ $\frac{14}{z} \cdot \frac{20}{x} p.m.$ $\frac{14}{z} \cdot \frac{20}{z} \frac{16}{z} p.m.$	<u>_2016</u> уууу
Other Image: Second	4 <u>5</u> min.	13. Water clarity	Clear 1 Turbid 1 (Describe)	5	Clear 🔀 2 0 Turbid 🗌 2 5 (Describe)	
4. Depth of well (from top of well casisng) $- \frac{143}{2}$	8 ft.		Medium browr Very turbid		Medium brown color Very slight turbidity	
5. Inside diameter of well $-\frac{2}{2}$. $\frac{0}{2}$	in.					
 6. Volume of water in filter pack and well19 7. Volume of water removed from well296 		Fill in if drilling fluid	s were used an	d well is at	solid waste facility:	
8. Volume of water added (if any)		14. Total suspended solids		mg/l	mg/l	
9. Source of water added		15. COD		mg/l	mg/l	
		16. Well developed by	: Name (first. la	st) and Firm		
10. Analysis performed on water added? Yes (If yes, attach results)	X No	First Name: Nate		Last Name		3

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party First Last Name: Jim Name: Jakubiak	I hereby certify that the above information is true and correct to the best of my knowledge.
Facility/Firm: WP&L Alliant Energy	Signature:
Street: 3739 Lakeshore Drive	Print Name: 1/att 4/avms
City/State/Zip: Sheboygan, WI 53082	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.

State of Wisconsin Department of Natural Resources

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Wastew	ater	Waste Management	X			
Remediation/Redev	elopment	Other				
Facility/Project Name	County Name		Well Name			
Alliant Energy I-43		eboygan		N	/W-303	
Facility License, Permit or Monitoring Number	County Code 59	Wis. Unique Well N VV-86		DNR Well	ID Number	
 Can this well be purged dry? Yes Well development method surged with bailer and bailed surged with bailer and pumped surged with block and bailed 		 Depth to Water (from top of well casing) Date 	a. <u>67</u>	<u>86</u> ft.	After Development $- 67 \cdot 86$ ft.	2016
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 0	2)))		c. <u>15</u> : <u>10</u>	a.m. p.m. inches	$\frac{0.16}{y} \frac{0.2}{m} / \frac{16}{d} / \frac{16}{y} / \frac{16}{y} = a.m.$ $\frac{17}{2} \cdot \frac{40}{x} p.m.$ $\frac{17}{x} \cdot \frac{10}{x} p.m.$	
	<u>0</u> min.		(Describe)		Describe)	
4. Depth of well (from top of well casisng) $-\frac{145}{2}$.			Medium brown		Light brown color very slight turbidity	
5. Inside diameter of well $-\frac{2}{2}, \frac{0}{-}$	in.					
6. Volume of water in filter pack and well casing18 .	-	Fill in if drilling fluid	s were used and	d well is at	solid waste facility:	
 7. Volume of water removed from well250. 8. Volume of water added (if any) 		14. Total suspended solids		mg/l	mg/l	
9. Source of water added		15. COD		mg/l	mg/l	
		16. Well developed by	y: Name (first, las	st) and Firm		
10. Analysis performed on water added? Yes (If yes, attach results)	X No	First Name: Nate		Last Name:	Harms	
· · ·		Firm: SCS ENGIN	IEERS, 2830 I	Dairy Drive	e, Madison, WI 53718	3

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party First Last Name: Jim Name: Jakubiak	I hereby certify that the above information is true and correct to the best of my knowledge.
Facility/Firm: WP&L Alliant Energy	Signature:
Street: 3739 Lakeshore Drive	Print Name: Natl Havms
City/State/Zip: Sheboygan, WI 53082	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.

State of Wisconsin Department of Natural Resources

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Wa	stewater	Waste Management	\mathbf{X}		
Remediation/R	edevelopment	Other			
Facility/Project Name	County Name		Well Name		
Alliant Energy I-43	Sh	eboygan		M	1W-304
Facility License, Permit or Monitoring Number	County Code 59	Wis. Unique Well Nu VV-86		DNR Well	ID Number
1. Can this well be purged dry? 2. Well development method surged with bailer and bailed surged with block and pumped surged with block and pumped surged with block, bailed and pumped surged with block, bailed and pumped compressed air bailed only pumped only pumped slowly Other	Yes No 41 61 42 62 70 20 10 51 50	well casing) Date	a <u>39</u> b. <u>02</u> / <u>16</u> m m d d	$\frac{15}{y} \text{ ft.}$ $\frac{1}{y} \frac{20}{y} \frac{20}{y}$ $\frac{1}{y} \frac{a.m.}{y} \frac{a.m.}{y} \frac{a.m.}{y}$ $\frac{1}{y} \frac{a.m.}{y} \frac{b.m.}{y} \frac{b.m.}{y}$	After Development
3. Time spent developing well	<u>120 min.</u>		(Describe)	(1	Describe)
4. Depth of well (from top of well casisng) $ -$ ¹	<u>45 7</u> ft.		Medium brown Very turbid		Water mostly clear
5. Inside diameter of well $\frac{2}{2}$	0 in.				
7. Volume of water removed from well2	8 4 gal. 40 gal.	Fill in if drilling fluid 14. Total suspended solids			solid waste facility: mg/l
s. volume of water added (if any)	<u> </u>	SOLIDS			
9. Source of water added		15. COD		mg/l	mg/l
		16. Well developed by	: Name (first, las	t) and Firm	
10. Analysis performed on water added?	Yes 🗵 No	First Name: Nate		Last Name:	
		Firm: SCS ENGIN	EERS, 2830 [Jairy Drive	e, Madison, WI 53718

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party First Last Name: Jim Name: Jakubiak	I hereby certify that the above information is true and correct to the best of my knowledge.
Facility/Firm: WP&L Alliant Energy	Signature:
Street: 3739 Lakeshore Drive	Print Name: Vate Havms
City/State/Zip: Sheboygan, WI 53082	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

Form 4400-113B

MONITORING WELL DEVELOPMENT

Rev. 7-98

State of Wisconsin Department of Natural Resources

Route to: Watershed/Wastewater Waste Management X Remediation/Redevelopment Other Facility/Project Name County Name Well Name WPL-1-43 Sheyboygan MW-305 Facility License, Permit or Monitoring Number County Code Wis. Unique Well Number DNR Well ID Number 02853 59 VY819 Yes X No 1. Can this well be purged dry? Before Development After Development 11. Depth to Water 59 59 _ 46 ft. (from top of 56 ft. 2. Well development method well casing) surged with bailer and bailed 41 П surged with bailer and pumped 61 X surged with block and bailed 42 Date П $b \cdot \frac{2}{m} \frac{2}{m} \frac{7}{d} \frac{7}{d} \frac{2017}{y y y y y} \frac{2017}{m m} \frac{2}{m} \frac{7}{d} \frac{7}{d} \frac{2017}{y y y y y}$ surged with block and pumped 62 surged with block, bailed and pumped 70 c. __11:00 ____ p.m. ___ 2:05 xp.m. compressed air Time 20 bailed only 10 12. Sediment in well pumped only 51 _____ inches _____ inches pumped slowly bottom 50 Other ____ 13. Water clarity Clear 10 Clear X 20 Turbid X 15 Turbid 25 3. Time spent developing well 162 min. (Describe) (Describe) 122 97 ft. 4. Depth of well (from top of well casisng) Brown 1 9 ____ in. 5. Inside diameter of well 6. Volume of water in filter pack and well 14 16 gal. casing Fill in if drilling fluids were used and well is at solid waste facility: 135 0 gal. 7. Volume of water removed from well 14. Total suspended ____ __ mg/l __ mg/l 8. Volume of water added (if any) solids _____ gal. NA 9. Source of water added 15. COD __ mg/1 mg/l 16. Well developed by: Name (first, last) and Firm 10. Analysis performed on water added? Yes No First Name: Kyle Last Name: Kramer (If yes, attach results) 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 Last Name: Jakubiak	I hereby certify that the above information is true and correct to the best of my knowledge.
Facility/Firm: Wisconsin Power and Light	Signature: Mugle Min
Street:3739 Lakeshore Drive	Print Name: Kyle Kramer
City/State/Zip: Sheyboygan,WI 53081	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 10 classification including a list of county codes and well type codes 10

Appendix C

Laboratory Reports

2020 Annual Groundwater Monitoring and Corrective Action Report <u>www.scsengineers.com</u>

02/04/2021 - Classification: Internal - ECRM7850510

C1 April 2020 Detection Monitoring

2020 Annual Groundwater Monitoring and Corrective Action Report <u>www.scsengineers.com</u>

02/04/2021 - Classification: Internal - ECRM7850510



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,

Day Milery

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



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



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



Project: 25220069 EDGEWATER I-43 CCR

Pace Project No.: 40206258

Sample: MW305	Lab ID:	40206073006	Collected	: 04/07/20	0 13:20	Received: 04	(10/20 08:55 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepara	ation Meth	od: EPA	3010			
	Pace Ana	lytical 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								
	Pace Ana	lytical 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 28	540C						
	Pace Ana	lytical Services	- Green Bay						
Total Dissolved Solids	580	mg/L	20.0	8.7	1		04/14/20 15:37		
9040 pH	Analytical	Method: EPA 9	040						
	Pace Ana	lytical 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 3	0.00						
	Pace Ana	lytical 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		
Sulfate	135	mg/L	20.0	4.4	10		04/17/20 12:37		
		-							
Sample: FIELD BLANK	Lab ID:	40206073007	Collected	: 04/07/20	0 13:05	Received: 04	/10/20 08:55 M	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	-	Method: EPA 6 lytical Services			od: EPA	3010			
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 25	540C						
	Pace Ana	lytical Services	- Green Bay						
Total Dissolved Solids	10.0J	mg/L	20.0	8.7	1		04/14/20 15:38		
		3 =			-				



Project: 25220069 EDGEWATER I-43 CCR

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Pace Project No.: 40206258

Sample: FIELD BLANK	Lab ID:	40206073007	Collected	: 04/07/20	0 13:05	Received: 04/	10/20 08:55 M	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9040 pH	Analytica	I Method: EPA 9	040						
	Pace Ana	alytical 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	Analytica	I Method: EPA 3	00.0						
	Pace Ana	alytical 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	0 15:31	Received: 04/	10/20 08:55 M	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	-	l Method: EPA 6 alytical Services			od: EPA	3010			
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	Analytica	I Method:							
	Pace Ana	alytical 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 Temperature, Water (C)	656.59 9.5	feet deg C			1 1		04/07/20 15:31 04/07/20 15:31		
		-					04/07/20 13:31		
2540C Total Dissolved Solids		I Method: SM 25							
Total Dissolved Solids	276	mg/L	20.0	8.7	1		04/14/20 15:38		
9040 pH	Analytica	I Method: EPA 9	040						
••••• P···		alytical Services							
pH at 25 Degrees C	7.9	Std. Units	0.10	0.010	1		04/13/20 09:56		H6
300.0 IC Anions	Analytica	I Method: EPA 3	00.0						
	,	alytical Services							
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		D3
Sulfate	11.2	mg/L	10.0	2.2	5		04/17/20 15:36	14808-79-8	



Project: 25220069 EDGEWATER I-43 CCR

Pace Project No. 40206258

Pace Project No.: 40206258									
Sample: MW304	Lab ID:	40206073009	Collected:	04/07/20	0 12:16	Received: 04/	/10/20 08:55 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		l Method: EPA 6 Ilytical Services	•	tion Meth	od: EP/	A 3010			
Boron Calcium	100 18600	ug/L ug/L	10.0 254	3.0 76.2	1 1		04/17/20 13:18 04/17/20 13:18		
Field Data	Analytica Pace Ana	l Method: Ilytical Services	- Green Bay						
Field pH Field Specific Conductance Oxygen, Dissolved REDOX Turbidity Static Water Level Temperature, Water (C)	8.07 392 1.9 190 227.3 658.16 12.4	Std. Units umhos/cm mg/L mV NTU feet deg C			1 1 1 1 1 1		04/07/20 12:16 04/07/20 12:16 04/07/20 12:16 04/07/20 12:16 04/07/20 12:16 04/07/20 12:16 04/07/20 12:16	7782-44-7	
2540C Total Dissolved Solids		l Method: SM 25 Ilytical Services							
Total Dissolved Solids	228	mg/L	20.0	8.7	1		04/14/20 15:38		
9040 pH		l Method: EPA 9 Ilytical Services							
pH at 25 Degrees C	7.8	Std. Units	0.10	0.010	1		04/13/20 09:57		H6
300.0 IC Anions		l Method: EPA 3 Ilytical Services							
Chloride Fluoride Sulfate	5.2J 0.75J 15.4	mg/L mg/L mg/L	10.0 1.6 10.0	2.2 0.48 2.2	5 5 5		04/17/20 15:50 04/17/20 15:50 04/17/20 15:50	16984-48-8	D3 D3
Sample: MW303	Lab ID:	40206073010	Collected:	04/08/20	0 09:30	Received: 04/	/10/20 08:55 M	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		l Method: EPA 6 Ilytical Services	•	ition Meth	od: EPA	A 3010			
Boron Calcium	79.0 29900	ug/L ug/L	10.0 254	3.0 76.2	1 1		04/17/20 13:38 04/17/20 13:38		
Field Data	Analytica	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



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 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytica Pace Ana	l Method: alytical Services	- Green Bay	,					
Static Water Level Temperature, Water (C)	656.46 9.4	feet deg C			1 1		04/08/20 09:30 04/08/20 09:30		
2540C Total Dissolved Solids	•	l Method: SM 2 alytical Services		,					
Total Dissolved Solids	274	mg/L	20.0	8.7	1		04/14/20 15:39		
9040 pH	-	l Method: EPA 9 alytical Services		,					
pH at 25 Degrees C	7.8	Std. Units	0.10	0.010	1		04/13/20 10:04		H6
300.0 IC Anions	-	l Method: EPA 3 alytical Services		,					
Chloride Fluoride Sulfate	4.3 0.60 23.3	mg/L mg/L mg/L	2.0 0.32 2.0	0.43 0.095 0.44	1 1 1		04/17/20 16:05 04/17/20 16:05 04/17/20 16:05	16984-48-8	
Sample: MW302	Lab ID:	40206073011	Collected	: 04/08/20) 10:20	Received: 04	/10/20 08:55 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qua
6020 MET ICPMS	-	I Method: EPA 6			od: EPA	3010			
Boron Calcium	111 27200	ug/L ug/L	10.0 254	3.0 76.2	1 1	04/12/20 22:16 04/12/20 22:16	04/17/20 13:45 04/17/20 13:45		
Field Data		l Method: alytical Services	- Green Bay	,					
Field pH Field Specific Conductance Oxygen, Dissolved REDOX Turbidity Static Water Level Temperature, Water (C)	7.79 413 0.70 -3.4 25.99 656.47 9.3	Std. Units umhos/cm mg/L mV NTU feet deg C			1 1 1 1 1 1		04/08/20 10:20 04/08/20 10:20 04/08/20 10:20 04/08/20 10:20 04/08/20 10:20 04/08/20 10:20 04/08/20 10:20	7782-44-7	
2540C Total Dissolved Solids	-	l Method: SM 2 alytical Services		,					
Total Dissolved Solids	254	mg/L	20.0	8.7	1		04/14/20 15:39		



Project: 25220069 EDGEWATER I-43 CCR

Pace Project No.: 40206258

Sample: MW302	Lab ID:	Lab ID: 40206073011		Collected: 04/08/20 10:20		Received: 04	4/10/20 08:55 Ma	Matrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9040 pH	,	Method: EPA 9 ytical Services		у					
pH at 25 Degrees C	7.7	Std. Units	0.10	0.010	1		04/15/20 06:43		H6
300.0 IC Anions		Method: EPA 3 ytical Services		У					
Chloride Fluoride Sulfate	4.4 0.75 19.4	mg/L mg/L mg/L	2.0 0.32 2.0	0.43 0.095 0.44	1 1 1		•	16887-00-6 16984-48-8 14808-79-8	



Project:	25220069 EDGE	WATER I-43 CCR										
Pace Project No.:	40206258											
QC Batch:	352275		Analy	sis Metho	d: I	EPA 6020						
QC Batch Method:	EPA 3010		Analy	sis Descri	ption:	6020 MET						
			Labo	ratory:	I	Pace Analyt	ical Service	es - Green	Bay			
Associated Lab Sar	nples: 4020607	3006, 4020607300	7, 4020607	3008, 402	06073009,	402060730 [,]	10, 402060	73011				
METHOD BLANK:	2039942			Matrix: W	/ater							
Associated Lab Sar	nples: 4020607	3006, 4020607300	7, 4020607	3008, 402	06073009,	402060730 ⁻	10, 402060	73011				
			Blan	nk	Reporting							
Parar	neter	Units	Resu	ult	Limit	Analy	zed	Qualifier	S			
		ug/L		<3.0	10.	0 04/16/20						
Boron												
Boron Calcium		ug/L		<76.2	25	4 04/16/20) 14:16					
		0	Spike Conc.	<76.2 LC Res	s	4 04/16/20 LCS % Rec	0 14:16 % R(Limi		Qualifiers			
Calcium LABORATORY COI Parar Boron		ug/L 2039943 Units ug/L	Conc50	LC 	CS sult	LCS % Rec 94	% Ri 1 {	ts (30-120	Qualifiers			
Calcium LABORATORY COI Parar		ug/L 2039943 Units	Conc.	LC 	CS sult	LCS % Rec	% Ri 1 {	ts (Qualifiers	_		
Calcium LABORATORY COI Parar Boron	neter	ug/L 2039943 Units ug/L ug/L	Conc. 50 500	LC 	CS sult	LCS % Rec 94 102	% Ri 1 {	ts (30-120	Qualifiers	_		
Calcium LABORATORY COI Parar Boron Calcium	neter	ug/L 2039943 Units ug/L ug/L	Conc. 50 500	LC 	CS sult 469 5100	LCS % Rec 94 102	% Ri 1 {	ts (30-120	Qualifiers	_		
Calcium LABORATORY COI Parar Boron Calcium	neter	ug/L 2039943 Units ug/L ug/L	Conc. 50 500 944	LC Res 0 0	CS sult 469 5100	LCS % Rec 94 102	% Ri 1 {	ts (30-120	Qualifiers % Rec	_	Мах	
Calcium LABORATORY COI Parar Boron Calcium	neter IATRIX SPIKE DU	ug/L 2039943 - Units ug/L ug/L PLICATE: 2039 40206073006	Conc. 500 944 MS	LC Res 0 0 MSD	2S sult 469 5100 2039945	LCS % Rec 94 102	% Ri Limi 4	ts (30-120 30-120		RPD	Max RPD	Qual
Calcium LABORATORY COI Parar Boron Calcium MATRIX SPIKE & M	neter IATRIX SPIKE DU	ug/L 2039943 Units ug/L ug/L PLICATE: 2039 40206073006 ts Result	944 Spike	LC Res 0 0 0 MSD Spike	2S sult 469 5100 2039945 MS	LCS % Rec 94 102	% Ri Limi 2 ٤ MS	ts (30-120 30-120 MSD	% Rec Limits			Qual

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.



Project:	25220069 EDGE	NATER I-43 CCR					
Pace Project No .:	40206258						
QC Batch:	352513		Analysis M	ethod:	SM 2540C		
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	issolved Solids	
			Laboratory	:	Pace Analytica	al Services - Gre	en Bay
Associated Lab San	nples: 40206073	3006, 40206073007,	, 40206073008,	40206073009	, 40206073010	, 40206073011	
METHOD BLANK:	2040928		Matri	x: Water			
Associated Lab San	nples: 40206073	3006, 40206073007,	, 40206073008,	40206073009	, 40206073010	, 40206073011	
			Blank	Reporting			
Paran	neter	Units	Result	Limit	Analyze	ed Quali	fiers
Total Dissolved Soli	ds	mg/L	<8.	7 20	0.0 04/14/20 1	5:37	
LABORATORY COM	NTROL SAMPLE:	2040929					
			Spike	LCS	LCS	% Rec	
Paran	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Total Dissolved Soli	ds	mg/L	549	600	109	80-120	
SAMPLE DUPLICA	TE: 2040930						
			40206073006	Dup		Max	
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers
Total Dissolved Soli	ds	mg/L	580	5	74	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.



Project: 2	25220069 EDGEWA	TER I-43 CCR						
Pace Project No.: 4	40206258							
QC Batch:	352315		Analysis Meth	od: E	EPA 9040			
QC Batch Method:	EPA 9040		Analysis Desc	ription: 9	9040 pH			
			Laboratory:	F	Pace Analytica	I Services	- Gree	en Bay
Associated Lab Samp	oles: 4020607300	6, 4020607300	7, 40206073008, 40	206073009,	40206073010			
	E: 2040062							
SAMPLE DUPLICATE	E: 2040062		40205757001	Dup			Max	
Parame	eter	Units	Result	Result	RPD		RPD	Qualifiers
Parame pH at 25 Degrees C	eter	Units Std. Units		•				Qualifiers 20 H6
	eter		Result	Result		F		
			Result	Result		F		
pH at 25 Degrees C			Result	Result		0		
pH at 25 Degrees C	E: 2040063		Result 8.0	Result 8.0		0	RPD	

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.



Project:	25220069 EDGEW/	ATER I-43 CCR							
Pace Project No.:	40206258								
QC Batch:	352553		Analysis Meth	od:	EPA 9040				
QC Batch Method:	EPA 9040		Analysis Desc	ription:	9040 pH				
			Laboratory:		Pace Analytica	al Serv	rices - Gre	en Bay	
Associated Lab Sa	mples: 402060730	11							
SAMPLE DUPLICA	ATE: 2041028								
			40206073011	Dup			Max		
Para	meter	Units	Result	Result	RPD		RPD	Qualifiers	
pH at 25 Degrees (с	Std. Units	7.7	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

Date: 04/24/2020 04:38 PM



	40206	258											
QC Batch:	3525				ysis Methoo		PA 300.0						
QC Batch Method	: EPA	300.0			ysis Descrij		00.0 IC An						
					oratory:	Pa	ace Analyt	tical Service	es - Green	Bay			
Associated Lab S	amples:	402060730	06, 4020607300	7									
METHOD BLANK	: 20411	58			Matrix: W	ater							
Associated Lab S	amples:	402060730	06, 4020607300	7									
				Bla		Reporting							
Par	ameter		Units	Res	ult	Limit	Analy	yzed	Qualifier	s			
Chloride			mg/L		<0.43	2.0	04/16/20	0 10:24					
Fluoride			mg/L		<0.095	0.32							
Sulfate			mg/L		<0.44	2.0	04/16/20	0 10:24					
LABORATORY C	ONTROL	SAMPLE:	2041159										
				Spike	LC	-	LCS	% Re	ec				
Par	ameter		Units	Conc.	Res	ult	% Rec	Limi	ts	Qualifiers			
Chloride			mg/L		20	20.3	10 ⁻	1 9	90-110		_		
Fluoride			mg/L		2	2.0	99	9 9	90-110				
Sulfate			mg/L	2	20	20.1	100	0 9	90-110				
MATRIX SPIKE &	MATRIX	SPIKE DUPL	_ICATE: 20411	160		2041161							
				MS	MSD								
			40206062001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parame	ter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride		mg/L	421	400	400	842	834	105	103		1	15	
Fluoride		mg/L	8.1	40	40	49.5	49.1	103	102		1	15	
Sulfate		mg/L	20.4J	400	400	461	456	110	109	90-110	1	15	
	MATRIX	SPIKE DUPL	LICATE: 20411	162		2041163							
WATKIN SFIRE O				MS	MSD								
			40206073001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
		1 1	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Parame	ter	Units											
	ter	mg/L		20	20	34.4	34.3	109	109	90-110	0		
Parame	ter			20 2 200	20 2 200	34.4 2.6 481	34.3 2.6 495	109 112 92	109 112 99	90-110	0 0 3	15	MO

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.



Project: Pace Project No.:	252200 402062		ATER I-43 CCR										
QC Batch:	35263	5		Anal	ysis Metho	d: E	EPA 300.0						
QC Batch Method:	EPA 3	00.0		Anal	ysis Descri	otion: 3	800.0 IC An	ions					
				Labo	oratory:	F	Pace Analyt	ical Service	es - Green	Bay			
Associated Lab Sar	nples:	402060730	08, 4020607300	9, 4020607	73010, 402	06073011	-						
METHOD BLANK:	204142	2			Matrix: W	ater							
Associated Lab Sar	nples:	402060730	08, 4020607300	9, 4020607	73010, 402	06073011							
				Bla	nk	Reporting							
Parar	neter		Units	Res	ult	Limit	Analy	yzed	Qualifier	S			
Chloride			mg/L		<0.43	2.0	04/17/2	0 09:21					
Fluoride			mg/L		<0.095	0.32	2 04/17/2	0 09:21					
Sulfate			mg/L		<0.44	2.0	04/17/2	0 09:21					
LABORATORY CO	NTROL S	AMPLE: 2	2041423										
				Spike	LC	S	LCS	% Re	ес				
Parar	neter		Units	Conc.	Res	ult	% Rec	Limi	ts (Qualifiers	_		
Chloride			mg/L	2	20	20.1	10	1 9	90-110		_		
Fluoride			mg/L		2	2.0	10	2 9	90-110				
Sulfate			mg/L	2	20	20.0	10	0 9	90-110				
MATRIX SPIKE & N	MATRIX S		ICATE: 2041	424		2041425							
				MS	MSD								
_			40206285003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride		mg/L	208	200	200	411	408	102	100		1	-	
Fluoride		mg/L	<0.95	20	20	21.7	21.7	106	105		0		
Sulfate		mg/L	53.4	200	200	256	256	102	101	90-110	0	15	
MATRIX SPIKE & N	ATRIX S		ICATE: 2041	426		2041427							
				MS	MSD								
			40206292001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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	
l'idenide													

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 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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25220069 EDGEWATER I-43 CCR

Pace Project No.: 40206258

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

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Project Numbe				A=N		HCL C		D=HNO	3 E≖DI	Water	F=Methai	nol G≈NaOH		Mail To Company:			
Project Name:	Eo	lgewater			odium Bisu	ifate Solu	tion	I=Sodiul	m Thiosu	nate .	I=Other			Mail To Address:			
Project State:	2	ÛΣ			ERED? S/NO)	Y/N	N	N	N	N	N						
Sampled By (P	rint): ZA	CH WATSON	/		RVATION IDE)*	Pick Letter	A	A	D	D	D			Invoice To Contact:			
Sampled By (S	ign): Z	alth		1		5				20	full Ist			Invoice To Company:			
PO #:			Regulator Program			lested	er.		Co M	206/800				Invoice To Address:			
Data Packag (billab EPA	le) Level III	(billable)	A = Air B = Biota C = Charcoal O = Oil	W = Water DW = Drink GW = Grou SW = Surfa	ing Water nd Water ce Water	nbey sesk	ビ	ha		Radvin 35	Netal			Invoice To Phone:			
PACE LAB #			S = Soil SI = Sludge CO DATE	WW = Was WP = Wipe LLECTION TIME		Analys	R		E E	Rac	6			CLIENT COMMENTS	LAB COMI (Lab Use		Profile
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003	M	W303	4.4		GW		17									1463)
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Pace Analytical"	Sample Condition Upon Receip Document No.:	eipt (SCUR) Document Revised: 26Mar2020 Author:
1241 Bellevue Street, Green Bay, WI 54	- 영화 방법에는 영화 등에 가지 않는 것을 하는 것을 가지 않는 것을 수 있는 것을 하는 것을 수 있다. 것을 수 있는 것을 하는 것을 수 있다. 것을 하는 것을 하는 것을 수 있는 것을 수 있는 것을 하는 것을 하는 것을 수 있는 것을 수 있다. 것을 것 같이 것 같이 같이 같이 같이 같이 않는 것을 수 있는 것을 수 있다. 것을 것 같이 없는 것을 수 있는 것을 수 있는 것 같이 않는 것 같이 않는 것 같이 없다. 것 같이 않는 것 같이 않는 것 같이 않는 것 같이 않는 것 같이 없다. 것 같이 없는 것 같이 않는 것 않는 것 같이 않는 것 않는 것 않는 것 같이 않는 것 않는 것 같이 않는 것 않는 것 않는 것 같이 없다. 것 같이 않는 것 같이 않는 것 않는 것 같이 않는 것 않는	방법을 위한 것이 잘 물었다. 이 것은 것은 것은 것은 것은 것은 것을 수 있는 것을 다 가지 않는 것을 하는 것이 같아요. 이 것은 것은 것은 것은 것은 것을 하는 것이 같아요. 이 것은 것이 없는 것이 없 것이 없
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Client Name:	<u> </u>	
CS Logistics ☐ Fed Ex ☐ Spe Client ☐ Pace Other:_	eedee 🗖 UPS 🗖 Waltco	40206073
racking #:		
Custody Seal on Cooler/Box Present: Syse Custody Seal on Samples Present: Syse Packing Material: KBubble Wrap Thermometer Used SR - KBT /Corr	K no Seals intact: □ yes □ r ubble Bags □ None □ Other Type of Ice: Wet Blue Dry No	no
emp Blank Present: ves no	Biological Tissue is Froz	zen: Tyes Tho
emp should be above freezing to 6° C. Stota Samples may be received at $\leq 0^{\circ}$ C if shipped o		Labeled By Initials:
Chain of Custody Present:	Yes No N/A 1.	
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Chain of Custody Relinquished:	ØYes □No □N/A 3.	
Sampler Name & Signature on COC:	ZYes □No □N/A 4.	
Samples Arrived within Hold Time:	ŹYes □No 5.	
- VOA Samples frozen upon receipt	□Yes □No Date/Time:	
Short Hold Time Analysis (<72hr):	ZYes □No 6.	
Rush Turn Around Time Requested:	□Yes ZÎNo 7.	
Sufficient Volume:	8.	
For Analysis: 🖉 Yes ⊡No MS/N	ΛSD: □Yes ØΝο □N/A	
Correct Containers Used:	ZYes □No 9.	
-Pace Containers Used:	ZYes □No □N/A	
-Pace IR Containers Used:	⊡Yes ⊡No ⊑∕N/A	
Containers Intact:	QYes ⊡No 10.	
iltered volume received for Dissolved tests	□Yes □No □/N/A 11.	
Sample Labels match COC:	□Yes 7No □N/A 12.005	- time 1425
-Includes date/time/ID/Analysis Matrix:_		4-10-
Frip Blank Present:	□Yes □No ØN/A 13.	Selection of the select
rip Blank Custody Seals Present	□Yes □No □N/A	
Pace Trip Blank Lot # (if purchased):		If checked, see attached form for additional comments
Client Notification/ Resolution: Person Contacted:	Date/Time:	

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

02/04/2021 - Classification: Internal - ECRM7850510

C2 May Resample

2020 Annual Groundwater Monitoring and Corrective Action Report <u>www.scsengineers.com</u>

02/04/2021 - Classification: Internal - ECRM7850510



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,

Day Milery

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



SAMPLE SUMMARY

Project: 252	20069.00 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



SAMPLE ANALYTE COUNT

Project:25220069.00 EDGEWATER I-43 ASHPace Project No.:40209307

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

PASI-G = Pace Analytical Services - Green Bay



25220069.00 EDGEWATER I-43 ASH

Project:

ANALYTICAL RESULTS

Pace Project No.: 40209307									
Sample: MW-302	Lab ID:	40209307001	Collecte	d: 05/20/20	0 11:06	Received: 05	/22/20 08:20 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions		Method: EPA 3 ytical Services		ıy					
Fluoride	0.70	mg/L	0.32	0.095	1		06/16/20 17:25	16984-48-8	



Project:	25220069.00 EDG	EWATER I-43 AS	ЯH									
Pace Project No.:	40209307											
QC Batch:	357723		Ana	alysis Meth	nod:	EPA 300.0						
QC Batch Method:	EPA 300.0		Ana	alysis Deso	cription:	300.0 IC Anions						
			Lat	poratory:		Pace Analy	tical Service	es - Green	Bay			
Associated Lab San	nples: 40209307	001										
METHOD BLANK:	2069447			Matrix:	Water							
Associated Lab San	nples: 40209307	001										
			BI	ank	Reporting							
Paran	neter	Units	Re	esult	Limit	Anal	yzed	Qualifiers	S			
Fluoride		mg/L		<0.095	0.3	62 06/16/2	0 09:51					
LABORATORY COM	NTROL SAMPLE:	2069448					_					
Paran	a a ta r	Units	Spik		LCS lesult	LCS % Rec	% Re Limi		Qualifiers			
			Cond						Juaimers			
Fluoride		mg/L		2	2.0	10	0 9	90-110				
MATRIX SPIKE & M	IATRIX SPIKE DUP	LICATE: 2069	449		2069450)						
			MS	MSD								
		40208684001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Fluoride	mg/L	1.7	2	2	2 3.7	3.7	100	100	90-110	0	15	
MATRIX SPIKE & M		LICATE: 2069	451		2069452	>						
		2009	MS	MSD	2000402	-						
			-									
		40209307001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units		Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

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.



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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

40209307001	MW-302	EPA 300.0	357723		
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
Project: Pace Project No.:	25220069.00 EDGEWATER I-43 ASH 40209307				

në: Ion;	e Print Clearly) SCS Engin Madisun Slodgett, Mea		an "ace Analytical"								<u>T REGION</u> 10 Wi: 920-469-2436	ų	4020930		
	608-216-73	kan 10		^ 11	A I I I	~~ -					Quote #:				
ere ier	25220069			<u></u>	AIN	OF C	JUS	ΓΟΕ	<u>)Y</u>		Mall To Contact:			<u> </u>	
	<u></u>		A⊐None H=Sodium	BHIGL C		HND3 Erri Sodium Thios		-Methanol	G=NaOH		Mail To Company:				
Print) W. Print) W. Sign): A Leval II.	<u>lgewater I-43</u> WI	Ashtaci	FILTERED		a		anale ja	Other 3	د. دمورش می رو در از م		Mail To Address:				
Print): 1/1	chge Kra		(YEB/NO) PRESERVATI		$ \mathcal{N} $	8									
(Sign): 7/	choe pra	-	(CODE)	ON Pick			4				Involce To Contact:				
	un cen	Regulatory									Invoice To Company:	Ç	C C a		
Be ide Options	MS/MSD	Program	<u></u>								Involce To Address:	28	SEMAINOR		
A Level In	On vour sample	AF CONT	X Codes / = Water		-3							M,	lise, WI 5		
A Level IV.	(billeble),	×Silota O ≢Charcoat G ≉Oil Si	W = Drinking Wate W = Ground Wate W = Surface Wate W = Waste Water		3	Ø. S						1.74	<u>-1007, W1 5</u>	571	
	your sample s	+ conduine 1.2. AA	HE YADO ALLE OF	10	1 S						Invoice To Phone:				
	nt field id -302		TIME								CLIENT COMMENTS		COMMENTS P Use Only)	<u>Profile</u>	
-002 -01		5/2.	1:06 GI	1	K-				3			Regnel	yee Ool per Me	140	
		1720	1.000										m	catul	
			<u></u>									실종성		- / <i>44</i>	
				2.12	1775) 1777 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 - 1775 -		<u>299</u> 8 NGN -								
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				1978-00 1957-00											
									8 4 - E - E - E - E - E - E - E - E - E -			2007) 2017 2017			
				2											
			1		_										
Rush Turnaround Time F	Requested - Prelims	Ratingyasta	nt //		<u> </u>								402093	50	
(Rush TAT subject to a Date Needed:	oproval/surcharge)	10	-0	<u> </u>		5/21/20	830	Receiver	1By: Tanin	li.	min Ballao	8.00	PACE Project No.	<u> </u>	
Transmit Projim Rush Results by all #1:	(complete what you want):		ans. 40	imn	- 6/21	Attimb:	1415	Received	By:	Jua	Datertime:	- 13	4020815	3	
all #2;		Relinged	the second	1		WTime:	1000	Received		VIII	Plan Datg/Time: 1	- Rond		°C	
phone:		Relinquished	BY: P	of Cano	2/ VU Dat	UUU e/Time:	800	Reconved	sall	Ug	cupar 5/22/20	,0820	Sample Receipt pH	•	
Samples on HOLD are e	ubjact to	Rainquistant	.					Lare)/6d	DY:	V	Date/Time!	1	OK / Adjusted		
Special pricing and release	i of llability	Relinguished	ру:		Dat	9/Time:		Received	By:		Date/Time;		Cooler Custody Se resen / Not Prese Intect / Not Intect	nt	

Page 9 of 9

C3 October 2020 Detection Monitoring

2020 Annual Groundwater Monitoring and Corrective Action Report <u>www.scsengineers.com</u>

02/04/2021 - Classification: Internal - ECRM7850510



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,

Day Milery

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: 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



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



SAMPLE ANALYTE COUNT

Project: 2521606 EDGEWATER I-43 ASH CCR

Pace Project No.: 40216680

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40216680001		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



Project: 2521606 EDGEWATER I-43 ASH CCR

Pace Project No.: 40216680

Sample: MW-301	Lab ID:	40216680001	Collected	1: 10/13/2	0 13:30	Received: 10/	(16/20 10:00 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		l Method: EPA 6 Ilytical Services	•		od: EP/	A 3010			
Boron Calcium	142 33400	ug/L ug/L	10.0 254	3.0 76.2	1 1	10/19/20 05:51 10/19/20 05:51	10/27/20 05:02 10/27/20 12:13		
Field Data	Analytical Pace Ana	l Method: Ilytical Services	- Green Bay	/					
Field pH Field Specific Conductance Oxygen, Dissolved REDOX Turbidity Static Water Level Temperature, Water (C)	7.96 354 1.1 162 57.28 652.16 12.5	Std. Units umhos/cm mg/L mV NTU feet deg C			1 1 1 1 1 1		10/13/20 13:30 10/13/20 13:30 10/13/20 13:30 10/13/20 13:30 10/13/20 13:30 10/13/20 13:30 10/13/20 13:30	7782-44-7	
2540C Total Dissolved Solids		l Method: SM 2 Ilytical Services		/					
Total Dissolved Solids	228	mg/L	20.0	8.7	1		10/19/20 17:03		
9040 pH		l Method: EPA s		1					
pH at 25 Degrees C	7.8	Std. Units	0.10	0.010	1		10/20/20 07:59		H6
300.0 IC Anions		l Method: EPA 3		1					
Chloride Fluoride Sulfate	4.2 0.83 19.0	mg/L mg/L mg/L	2.0 0.32 2.0	0.43 0.095 0.44	1 1 1		11/02/20 15:50 11/02/20 15:50 11/02/20 15:50	16984-48-8	



Project: 2521606 EDGEWATER I-43 ASH CCR

Pace Project No.: 40216680

Sample: MW-302	Lab ID:	40216680002	Collected:	10/13/20	0 14:00	Received: 10/	16/20 10:00 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		l Method: EPA 6 Ilytical Services	•	tion Meth	od: EP/	A 3010			
Boron Calcium	128 26900	ug/L ug/L	10.0 254	3.0 76.2	1 1	10/19/20 05:51 10/19/20 05:51	10/27/20 05:09 10/27/20 12:19		
Field Data	Analytica Pace Ana	l Method: Ilytical Services	- Green Bay						
Field pH Field Specific Conductance Oxygen, Dissolved REDOX Turbidity Static Water Level Temperature, Water (C)	7.85 418 0.3 37 14.16 652.17 11.9	Std. Units umhos/cm mg/L mV NTU feet deg C			1 1 1 1 1 1		10/13/20 14:00 10/13/20 14:00 10/13/20 14:00 10/13/20 14:00 10/13/20 14:00 10/13/20 14:00 10/13/20 14:00	7782-44-7	
2540C Total Dissolved Solids	2	l Method: SM 25 Ilytical Services							
Total Dissolved Solids 9040 pH		mg/L I Method: EPA 9 Ilytical Services		8.7	1		10/19/20 17:04		
pH at 25 Degrees C	7.9	Std. Units	0.10	0.010	1		10/20/20 08:01		H6
300.0 IC Anions		l Method: EPA 3 Ilytical Services							
Chloride Fluoride Sulfate	4.3 0.82 19.0	mg/L mg/L mg/L	2.0 0.32 2.0	0.43 0.095 0.44	1 1 1		11/02/20 16:04 11/02/20 16:04 11/02/20 16:04	16984-48-8	



Project: 2521606 EDGEWATER I-43 ASH CCR

Pace Project No.: 40216680

Sample: MW-303	Lab ID:	40216680003	Collected	: 10/13/20	0 14:30	Received: 10/	16/20 10:00 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	-	l Method: EPA 6 Ilytical Services			od: EP/	A 3010			
Boron Calcium	85.8 29000	ug/L ug/L	10.0 254	3.0 76.2	1 1	10/19/20 05:51 10/19/20 05:51	10/27/20 05:15 10/27/20 12:40		
Field Data	Analytical Pace Ana	l Method: Ilytical Services	- Green Bay						
Field pH Field Specific Conductance Oxygen, Dissolved REDOX Turbidity Static Water Level Temperature, Water (C)	8.31 570 0.4 128 7.21 652.20 10.7	Std. Units umhos/cm mg/L mV NTU feet deg C			1 1 1 1 1 1		10/13/20 14:30 10/13/20 14:30 10/13/20 14:30 10/13/20 14:30 10/13/20 14:30 10/13/20 14:30 10/13/20 14:30	7782-44-7	
2540C Total Dissolved Solids		l Method: SM 25 Ilytical Services							
Total Dissolved Solids	150	mg/L	20.0	8.7	1		10/19/20 17:03		
9040 pH		l Method: EPA 9 Ilytical Services							
pH at 25 Degrees C	7.9	Std. Units	0.10	0.010	1		10/20/20 08:02		H6
300.0 IC Anions		l Method: EPA 3 Ilytical Services							
Chloride Fluoride Sulfate	5.2 0.70 33.2	mg/L mg/L mg/L	2.0 0.32 2.0	0.43 0.095 0.44	1 1 1		11/02/20 16:19 11/02/20 16:19 11/02/20 16:19	16984-48-8	



Project:	2521606 EDGEWA	TER I-43 ASH C	CR									
Pace Project No.:	40216680											
QC Batch:	368600		Analy	sis Metho	d: E	PA 6020						
QC Batch Method:	EPA 3010		Analy	sis Descri	ption: 6	020 MET						
			Labo	ratory:	F	Pace Analyti	ical Servic	es - Green	Bay			
Associated Lab Sam	ples: 402166800	001, 4021668000	2, 4021668	0003								
METHOD BLANK:	2131341			Matrix: W	/ater							
Associated Lab Sam	ples: 402166800	001, 4021668000	2, 4021668	0003								
			Blar		Reporting							
Param	eter	Units	Res		Limit	Analy	/zed	Qualifier	S			
					40.0	0 10/27/20	01:45					
Boron		ug/L		<3.0	10.0	10/21/20	J U I .4J					
Boron Calcium		ug/L ug/L		<3.0 <76.2	10.0 254							
		0	Spike Conc.	<76.2 LC Res	254 CS sult	LCS % Rec	0 11:18 % R Limi	ts (Qualifiers			
Calcium LABORATORY CON Param Boron		ug/L 2131342 Units ug/L	Conc. 50	<76.2 LC 	254 CS sult 455	LCS % Rec 91	0 11:18 % R Limi	ts (30-120	Qualifiers			
Calcium LABORATORY CON Param		ug/L 2131342 Units	Conc.	<76.2 LC 	254 CS sult	LCS % Rec	0 11:18 % R Limi	ts (Qualifiers			
Calcium LABORATORY CON Param Boron	eter	ug/L 2131342 Units ug/L ug/L	Conc. 50 500	<76.2 LC 	254 CS sult 455	LCS % Rec 91	0 11:18 % R Limi	ts (30-120	Qualifiers	_		
Calcium LABORATORY CON Param Boron Calcium	eter	ug/L 2131342 Units ug/L ug/L	Conc. 50 500	<76.2 LC 	254 CS sult 455 4970	LCS % Rec 91	0 11:18 % R Limi	ts (30-120	Qualifiers			
Calcium LABORATORY CON Param Boron Calcium MATRIX SPIKE & M	eter ATRIX SPIKE DUPI	ug/L 2131342 Units ug/L ug/L LICATE: 2131 40216667001	Conc. 500 343 MS Spike	<76.2 LC Res 0 0 MSD Spike	254 2S sult 455 4970 2131344 MS	4 10/27/20 LCS % Rec 91 95 MSD	0 11:18 % Ri Limi 1 8 9 8 MS	ts (30-120 30-120 MSD	% Rec	_	Max	
Calcium LABORATORY CON Param Boron Calcium	eter	ug/L 2131342 Units ug/L ug/L LICATE: 2131	Conc. 500 343 MS	<76.2 LC Res 0 0 MSD	254 255 5ult 455 4970 2131344	4 10/27/20 LCS % Rec 91 95	0 11:18 % R Limi 1	ts (30-120 30-120		RPD	Max RPD	Qual
Calcium LABORATORY CON Param Boron Calcium MATRIX SPIKE & M	eter ATRIX SPIKE DUPI	ug/L 2131342 Units ug/L ug/L LICATE: 2131 40216667001	Conc. 500 343 MS Spike	<76.2 LC Res 0 0 MSD Spike	254 2S sult 455 4970 2131344 MS	4 10/27/20 LCS % Rec 91 95 MSD	0 11:18 % Ri Limi 1 8 9 8 MS	ts (30-120 30-120 MSD	% Rec		RPD	Qual

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.



Project: Pace Project No.:	2521606 EDGEW 40216680	ATER I-43 ASH CCI	R						
QC Batch:	368700		Analysis Me	ethod:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total Di	ssolved Solids			
			Laboratory:		Pace Analytica	I Services - Gre	en Ba	ау	
Associated Lab San	nples: 40216680	001, 40216680002,	40216680003		·				
METHOD BLANK:	2131681		Matrix	: Water					
Associated Lab San	nples: 40216680	001, 40216680002,	40216680003						
			Blank	Reporting					
Paran	neter	Units	Result	Limit	Analyze	d Quali	fiers	_	
Total Dissolved Soli	ds	mg/L	<8.7	20	0.0 10/19/20 1	7:01			
LABORATORY COM Paran Total Dissolved Soli	neter	2131682 Units mg/L	Spike Conc. 584	LCS Result 532	LCS % Rec 91	% Rec Limits 80-120	Qu	alifiers	
	us	ing/L	504	002	51	00-120			
SAMPLE DUPLICA	TE: 2131683								
			40216680001	Dup		Max			
Paran	neter	Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Soli	ds	mg/L	228	2	18	4	10		
SAMPLE DUPLICA	TE: 2131684								
5		11-26	40216744001	Dup	000	Max		Qualifiant	
Paran		Units	Result	Result	RPD	RPD		Qualifiers	
Total Dissolved Soli	ds	mg/L	228	2	14	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.



Project: Pace Project No.:	2521606 EDGEWA 40216680	ATER I-43 ASH CC	R					
QC Batch:	368741		Analysis Meth	od:	EPA 9040			
QC Batch Method:	EPA 9040		Analysis Desc	ription:	9040 pH			
			Laboratory:		Pace Analytica	al Services - G	reen Bay	
Associated Lab Sa	•	001, 40216680002	, 40216680003					
Associated Lab San	•	001, 40216680002		Dup		May		
SAMPLE DUPLICA	•	001, 40216680002 Units	, 40216680003 40216567010 Result	Dup Result	RPD	Max RPD		

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

Date: 11/04/2020 08:04 AM

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Project:	2521606 EDGEW/	ATER I-43 ASH C	CR									
Pace Project No.:	40216680											
QC Batch:	369646		Analys	sis Metho	d: El	PA 300.0						
QC Batch Method:	EPA 300.0		Analys	sis Descri	ption: 30	00.0 IC An	ions					
			Labor	atory:	Pa	ace Analyt	ical Servic	es - Green	Bay			
Associated Lab San	nples: 40216680	001, 4021668000	2, 40216680	0003								
METHOD BLANK:	2136584		I	Matrix: W	/ater							
Associated Lab San	nples: 40216680	001, 4021668000	2, 40216680	0003								
			Blan		Reporting							
Paran	neter	Units	Resu	ilt	Limit	Analy	/zed	Qualifier	s			
Chloride		mg/L		<0.43	2.0	11/02/20	0 12:00					
Fluoride		mg/L		0.095	0.32							
Sulfate		mg/L		<0.44	2.0	11/02/20	0 12:00					
LABORATORY CON	NTROL SAMPLE:	2136585										
LABORATORY COM	NTROL SAMPLE:	2136585	Spike	LC	S	LCS	% R	ec				
LABORATORY CON		2136585 Units	Spike Conc.	LC Res		LCS % Rec	% R Limi		Qualifiers			
Paran			•	Res			Limi		Qualifiers			
		Units	Conc.	Res	sult	% Rec	Limi	ts (Qualifiers			
Paran		Units mg/L	Conc.	Res 0 2	sult	% Rec 103	Limi 3 9 4 9	ts (90-110	Qualifiers	_		
Paran Chloride Fluoride	neter	Units mg/L mg/L mg/L	Conc. 20 20 20	Res 0 2	20.6 2.1	% Rec 10: 104	Limi 3 9 4 9	ts (90-110 90-110	Qualifiers	_		
Paran Chloride Fluoride Sulfate	neter	Units mg/L mg/L mg/L	Conc. 20 20 20	Res 0 2	20.6 2.1 20.6	% Rec 10: 104	Limi 3 9 4 9	ts (90-110 90-110	Qualifiers			
Paran Chloride Fluoride Sulfate	neter	Units mg/L mg/L mg/L	Conc. 20 20 20 586	Res	20.6 2.1 20.6	% Rec 10: 104	Limi	ts (90-110 90-110 90-110 90-110 MSD	Qualifiers % Rec	_	Мах	
Paran Chloride Fluoride Sulfate	neter IATRIX SPIKE DUP	Units mg/L mg/L mg/L PLICATE: 2136 40217064001	Conc. 20 20 586 MS	Res	20.6 2.1 20.6 2136587 MS	% Rec 10: 104 105	Limi 3 4 3	ts (90-110 90-110 90-110		RPD	Max RPD	Qual
Paran Chloride Fluoride Sulfate MATRIX SPIKE & M	neter IATRIX SPIKE DUP	Units mg/L mg/L mg/L PLICATE: 2136 40217064001 Result	Conc. 20 20 586 MS Spike	MSD Spike	20.6 2.1 20.6 2136587 MS	% Rec 103 104 103 MSD	Limi	ts (90-110 90-110 90-110 90-110 MSD	% Rec Limits		RPD	Qual
Paran Chloride Fluoride Sulfate MATRIX SPIKE & M Parameter	neter IATRIX SPIKE DUP	Units mg/L mg/L mg/L PLICATE: 2136 40217064001 Result 86.5	586 MS Spike Conc.	MSD Spike Conc.	20.6 2.1 20.6 2136587 MS Result	% Rec 103 104 105 105 105 105	Limi 3 4 3 3 3 MS % Rec	ts (90-110 90-110 90-110 90-110 MSD % Rec	% Rec Limits 90-110		RPD 15	Qual

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.



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.



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		
10216680002	MW-302	SM 2540C	368700		
40216680003	MW-303	SM 2540C	368700		
40216680001	MW-301	EPA 9040	368741		
10216680002	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		

Pace Analytical WWW.PACELADS.COH

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section Require	d Client Information:	Section B Required Pr Report To:	-	formation: n Blodgett					invo	tion C bice Inf	format	ion:													P	age :	1	Of	1
Email: Phone:	2830 Dairy Drive , WI 53718 mblodgett@scsengineers.com 608-216-7362 Fax	Copy To: Purchase Or Project Name Project #:	der #:	CR Rule E	dgewater I	-43 Ash (25216069)	Add Pace Pace	npany N ress: e Quote e Proje e Profil	e: ct Mar	ager: 394		dan.m	ilewsk	y@pa	acelat	os.co	m,								itory Ager / Locatio		
ITEM#	MATRIX Drinking Wa Water Water Westa Wate Product Soll/Solid Oil One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique Tissue	CODE ler DW WT	MATRIX CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP)	ST	ART	ECTED	ND TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Pr	eser	vativ	Na2S203 50	Other	Analyses Test Y/N		4	Boron/Calcium		hatysi	S FIIK	ared (YN)		Residual Chlorine (Y/N)			
1	MW-301 MW-302		wт wт	10-13	10000000000											1	× ×		x x									∞	2
3	MW-303 MW-304		wт wт	10-13	1430												x x		x x									00	3
5	MW-305 FIELD BLANK		wт wт															x x	x x										
7			wt															x	x										
8 9			<u>w</u> т																							_			
10 11																													
12	ADDITIONAL COMMENTS	Zac V V C.	elingui UU Jary SIC	SHED BY 17	<u>/ (</u>	N SCS - /	DATE 10-15 0115/2 101601	50	70 1 0	11ME 100 115 100	72	1a 1				viaf n.	FILIAT	non		10	15	0ATE //5 1622		7.0 7.0	3	<u>P</u> SF	SAMPLE	CONDITION	9
						T Name	AND SIGN of SAMPL of SAMPL	ER:	JRE		<u> </u>					•		DATE	Signe	d:	I			<u>.</u>		TEMP in C	Received on ce (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

02/04/2021 - Classification: Internal - ECRM7850510

Page 14 of 16

40216680

All	conta	iners	: needir	g pres	ervatio	on hav	ve bee	en che	cked	and n	oted b	elow:		□No	□N/A		o Std #				n (if pH	l adju	sted):					Initial comp	when leted:	M	Date/ Time:	
Г]	(>6mm) *		t pH ≥9	2		sted	
			G	ass						Plast	ic			L	Via	als			L	35	ars	J	Ge	nera		ls (>(H 52	n Act	1 ≥12	H ≤2	adjusted	Volum (mL)
AG1U	BG1U	AC1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	1691	/G9H	VG9M	VG9D	JGFU	N69L	WGFU	WPFU	SP5T	ZPLC	GN	VOA Vials	H2SO4 pH ≤2	NaOH+Zn Act pH	NaOH pH ≥12	HNO3 pH	pH after	
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	Sample Condition U	pon Receipt (SCUR)	Document Revised: 2	26Mar2020
Pace Analytical	Docume	ent No.:	Author:	
1241 Bellevue Street, Green Bay, WI 54	BO2 ENV-FRM-GBA	Y-0014-Rev.00	Pace Green Bay Qu	ality Office
Sampl	e Condition Upon F	Receipt Form (S	CUR)	
		Project #:		
ent Name: SCS Engin	nove		WO#:4021	6680
urier: 🗲 CS Logistics 🖸 Fed Ex 🖸 Spe	et et la substation de la sola de			
Client Pace Other:				
			40216680	
cking #: stody Seal on Cooler/Box Present: † ye	s 🗖 no Seals intact: 🗜	≫yes 🗖 no		
stody Seal on Samples Present: [] yes				
cking Material: 🕅 Bubble Wrap 🔲 B			· · · · · · · · · · · · · · · · · · ·	
ermometer Used <u>SR - NA</u>	Type of Ice: Ver B	lue Dry None 🔎	Samples on ice, cooling	process has begun examining contents:
oler Temperature Uncorr: 10T /Con				
mp Blank Present: 🖸 yes 🕅 no	Biological Lis	sue is Frozen: 🗔 ye		20 /Initials:
np should be above freezing to 6°C. ta Samples may be received at ≤ 0°C if shipped o	n Dry Ice.		Labeled By	Initials: SEU
ain of Custody Present:	Ø \$€€€\$ □N0 □N/A 1.			
ain of Custody Filled Out:	□Yes 🕅 □N/A 2	. DV #-		Jollioha
ain of Custody Relinquished:	t∰kes ⊡No ⊡N/A 3	and the second		K
ppler Name & Signature on COC:				
mples Arrived within Hold Time:	XYes □No 5	•		
- VOA Samples frozen upon receipt	□Yes □No D	ate/Time:		
ort Hold Time Analysis (<72hr):	NO EVes ENO 6			
ish Turn Around Time Requested:	TYes KNo 7	•		
Ifficient Volume:	8	• • •		
	MSD: DYes DAG DN/A	n an		
prrect Containers Used:	XYes INo 9).		
-Pace Containers Used:		litter og som		
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ontainers Intact:		10.		
Itered volume received for Dissolved tests				
ample Labels match COC:	□Yes ∑ No □N/A 1			
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ip Blank Custody Seals Present		د.		- •
ace Trip Blank Lot # (if purchased):		and and a second sec Second second s Second second	en e	
lient Notification/ Resolution:			ked, see attached form for	additional comments
Person Contacted:	Date/T	ime:	ere 1997 - Statistica Statistica 1997 - Statistica Statistica	
Comments/ Resolution:				

02/04/2021 - Classification: Internal - ECRM7850510



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,

Day Milery

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



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



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



Project: 25220069 ALLIANT I-43 CCR

Pace Project No.: 40216744

Sample: MW-304	Lab ID:	40216744001	Collected	1: 10/15/20	0 09:40	Received: 10/	17/20 09:05 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		l Method: EPA (•		od: EP/	A 3010			
Boron Calcium	94.5 15800	ug/L ug/L	10.0 254	3.0 76.2	1 1	10/20/20 07:54 10/20/20 07:54	10/26/20 19:27 10/22/20 20:16		
Field Data	Analytica Pace Ana	l Method: Ilytical Services	- Green Bay	/					
Field pH Field Specific Conductance Oxygen, Dissolved REDOX Turbidity Static Water Level Temperature, Water (C)	8.12 411 0.2 -10 9.1 654.17 9.7	Std. Units umhos/cm mg/L mV NTU feet deg C			1 1 1 1 1 1		10/15/20 09:40 10/15/20 09:40 10/15/20 09:40 10/15/20 09:40 10/15/20 09:40 10/15/20 09:40 10/15/20 09:40	7782-44-7	
2540C Total Dissolved Solids		l Method: SM 2 Ilytical Services		/					
Total Dissolved Solids	228	mg/L	20.0	8.7	1		10/19/20 17:05		
9040 pH		l Method: EPA		/					
pH at 25 Degrees C	8.0	Std. Units	0.10	0.010	1		10/20/20 08:16		H6
300.0 IC Anions		I Method: EPA		/					
Chloride Fluoride Sulfate	2.1 0.58 15.5	mg/L mg/L mg/L	2.0 0.32 2.0	0.43 0.095 0.44	1 1 1		10/28/20 15:11 10/28/20 15:11 10/28/20 15:11	16887-00-6 16984-48-8 14808-79-8	



Project: 25220069 ALLIANT I-43 CCR

Pace Project No.: 40216744

Sample: MW-305	Lab ID:	40216744002	Collected	l: 10/15/2	0 11:20	Received: 10/	17/20 09:05 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Method: EPA 6 lytical Services			od: EP/	A 3010			
Boron Calcium	65.5 76800	ug/L ug/L	10.0 254	3.0 76.2	1 1	10/20/20 07:54 10/20/20 07:54			
Field Data	Analytical Pace Ana	Method: lytical Services	- Green Bay	1					
Field pH Field Specific Conductance Oxygen, Dissolved REDOX Turbidity Static Water Level Temperature, Water (C)	7.63 911 0.3 -41 8.27 658.08 10	Std. Units umhos/cm mg/L mV NTU feet deg C			1 1 1 1 1 1		10/15/20 11:20 10/15/20 11:20 10/15/20 11:20 10/15/20 11:20 10/15/20 11:20 10/15/20 11:20 10/15/20 11:20	7782-44-7	
2540C Total Dissolved Solids		Method: SM 2 lytical Services		/					
Total Dissolved Solids	500	mg/L	20.0	8.7	1		10/19/20 17:06		
9040 pH		Method: EPA S lytical Services		/					
pH at 25 Degrees C	7.6	Std. Units	0.10	0.010	1		10/20/20 08:17		H6
300.0 IC Anions		Method: EPA 3		1					
Chloride Fluoride Sulfate	24.5 0.72 139	mg/L mg/L mg/L	2.0 0.32 20.0	0.43 0.095 4.4	1 1 10		11/02/20 12:29 11/02/20 12:29 10/28/20 17:06	16887-00-6 16984-48-8 14808-79-8	



Project: 25220069 ALLIANT I-43 CCR

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Pace Project No.: 40216744

Sample: FIELD BLANK	Lab ID:	40216744003	Collected	10/15/20	0 11:20	Received: 10/	17/20 09:05 Ma	atrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual				
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010												
	Pace Ana	ytical 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 25	540C										
	Pace Ana	ytical 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 9	040										
-	Pace Ana	ytical 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 3	0.00										
	Pace Ana	ytical 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					



Project:	25220069 ALLIA	NT I-43 CCR										
Pace Project No.:	40216744											
QC Batch:	368751		Analy	sis Method	d: E	PA 6020						
QC Batch Method:	EPA 3010		Analy	sis Descri	ption: 6	6020 MET						
			Labor	ratory:	F	Pace Analyti	cal Service	es - Green	Bay			
Associated Lab Sar	mples: 4021674	4001, 4021674400	02, 4021674	4003								
METHOD BLANK:	2131937			Matrix: W	/ater							
Associated Lab Sar	mples: 4021674	4001, 4021674400	02, 4021674	4003								
			Blan	k l	Reporting							
Parar	neter	Units	Resu	ult	Limit	Analy	zed	Qualifiers	S			
				<3.0	10.0	0 10/22/20	14.05					
Boron		ug/L		<3.0	10.0	10/22/20	/ 11.00					
Boron Calcium		ug/L		<3.0 <76.2	254							
		0										
	NTROL SAMPLE:	0		<76.2	254	4 10/22/20) 14:05					
Calcium		ug/L 2131938	Spike	<76.2 LC	254 254	4 10/22/20	0 14:05 % Re					
Calcium		ug/L		<76.2	254 254	4 10/22/20) 14:05		Qualifiers			
Calcium LABORATORY CO Parar Boron		ug/L 2131938 - Units ug/L	Spike Conc. 500	<76.2 LC 	254 254 254 254 254 254 254 254 254 254	4 10/22/20 LCS % Rec 95) 14:05 % Re Limi 5 E	ts (30-120	Qualifiers			
Calcium LABORATORY CO Parar		ug/L 2131938 Units	Spike Conc.	<76.2 LC 	254 CS sult	4 10/22/20 LCS % Rec) 14:05 % Re Limi 5 E	ts (Qualifiers			
Calcium LABORATORY CO Parar Boron Calcium	neter	ug/L 2131938 Units ug/L ug/L	Spike Conc. 500	<76.2 LC 	254 254 254 254 254 254 254 254 254 254	4 10/22/20 LCS % Rec 95 98) 14:05 % Re Limi 5 E	ts (30-120	Qualifiers			
Calcium LABORATORY CO Parar Boron	neter	ug/L 2131938 Units ug/L ug/L	Spike Conc. 500	<76.2 LC 	254 254 254 254 254 254 254 254 254 254	4 10/22/20 LCS % Rec 95 98) 14:05 % Re Limi 5 E	ts (30-120	Qualifiers	_		
Calcium LABORATORY CO Parar Boron Calcium	neter	ug/L 2131938 Units ug/L ug/L	Spike Conc. 500 5000	<76.2 LC Res 0 0	254 254 254 254 254 254 254 254 254 254	4 10/22/20 LCS % Rec 95 98) 14:05 % Re Limi 5 E	ts (30-120	Qualifiers % Rec		Max	
Calcium LABORATORY CO Parar Boron Calcium	neter /ATRIX SPIKE DU	ug/L 2131938 - Units - ug/L ug/L PLICATE: 2131 40216632001	Spike Conc. 500 5000 939 MS	<76.2 LC Res 0 0 MSD	254 255 255 255 254 254 254 254 254 254	4 10/22/20 LCS % Rec 95 98) 14:05	ts (30-120 30-120		RPD	Max RPD	Qual
Calcium LABORATORY CO Parar Boron Calcium MATRIX SPIKE & M	neter /ATRIX SPIKE DU	ug/L 2131938 - Units ug/L ug/L PLICATE: 2131 40216632001 s Result	Spike Conc. 500 500 939 MS Spike	<76.2 LC Res 0 0 MSD Spike	254 255 255 254 474 4900 2131940 MS	4 10/22/20 LCS % Rec 95 98 MSD) 14:05	ts (30-120 30-120 MSD	% Rec Limits		RPD	Qual

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.



- ,	220069 ALLIAN 216744	T I-43 CCR						
QC Batch: 3	68700		Analysis M	ethod:	SM 2540C			
QC Batch Method: S	SM 2540C		Analysis De	escription:	2540C Total D	issolved Solids		
			Laboratory		Pace Analytica	al Services - Gre	en Ba	ıy
Associated Lab Sample	es: 40216744	001, 4021674400	2, 40216744003					
METHOD BLANK: 21	31681		Matrix	: Water				
Associated Lab Sample	es: 40216744	001, 4021674400	2, 40216744003					
			Blank	Reporting	I			
Paramete	er	Units	Result	Limit	Analyze	ed Quali	fiers	_
Total Dissolved Solids		mg/L	<8.7	2	0.0 10/19/20 1	7:01		_
LABORATORY CONTR	OL SAMPLE:	2131682						
			Spike	LCS	LCS	% Rec		
Paramete	er	Units	Conc.	Result	% Rec	Limits	Qua	alifiers
Total Dissolved Solids		mg/L	584	532	91	80-120		
SAMPLE DUPLICATE:	2131683							
Descent		1.1 1	40216680001	Dup	000	Max		Qualifians
Paramete	er	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solids		mg/L	228	3 2	218	4	10	
SAMPLE DUPLICATE:	2131684		10010711001	_				
Paramete)r	Units	40216744001 Result	Dup Result	RPD	Max RPD		Qualifiers
	51							Qualifiers
Total Dissolved Solids		mg/L	228	3 2	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.



Project: Pace Project No.:	25220069 ALLIAN 40216744	T I-43 CCR						
QC Batch:	368741		Analysis Meth	nod:	EPA 9040			
QC Batch Method:	EPA 9040	Analysis Desc	cription:	9040 pH				
	C Batch Method: EPA 9040				Pace Analytica	Services - Gre	een Bay	
Associated Lab Sa	mples: 402167440	001, 4021674400	2					
SAMPLE DUPLICA	TE: 2131902							
			40216567010	Dup		Max		
Para	meter	Units	Result	Result	RPD	RPD	Qualifiers	
pH at 25 Degrees (2	Std. Units	7.8		7.8		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

Date: 11/04/2020 08:06 AM

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Project:	25220069 ALLIANT	I-43 CCR								
Pace Project No.:	40216744									
QC Batch:	369019		Analysis Meth	od:	EPA 9040					
QC Batch Method:	EPA 9040		Analysis Desc	ription:	9040 pH					
			Laboratory:		Pace Analytical	Services - Gre	een Bay			
Associated Lab Sa	mples: 4021674400	3								
SAMPLE DUPLICA	ATE: 2133297									
			40216739003	Dup		Max				
Para	meter	Units	Result	Result	RPD	RPD	Qualifiers			
pH at 25 Degrees (с	Std. Units	8.0	8.	0	1	20 H6			
SAMPLE DUPLICA	ATE: 2133298									
			40216874001	Dup		Max				
Dava	meter	Units	Result	Result	RPD	RPD	Qualifiers			
Para										

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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Project: 252200 Pace Project No.: 402167	069 ALLIANT 744	I-43 CCR										
QC Batch: 36939) 3		Analy	sis Metho	od: E	PA 300.0						
QC Batch Method: EPA 3	300.0		Analy	sis Descri	iption: 3	00.0 IC Ani	ons					
			Labor	ratory:	es - Green	Bay						
Associated Lab Samples:	4021674400	01, 4021674400	2, 4021674	4003								
METHOD BLANK: 213565	51			Matrix: W	/ater							
Associated Lab Samples:	4021674400	01, 4021674400	2, 4021674	4003								
			Blan	ık	Reporting							
Parameter		Units	Resu	ult	Limit	Analy	zed	Qualifier	S			
Chloride		mg/L	_	<0.43	2.0	10/28/20	10:09					
El control o		-		0.005	0.32	2 10/28/20	40.00					
Fluoride		mg/L	<	<0.095	0.52	. 10/20/20	0 10:09					
Sulfate		mg/L mg/L		<0.095 <0.44	2.(
	SAMPLE: 2	0		<0.44 LC	2.0				Qualifiers			
Sulfate	SAMPLE: 2	mg/L 2135652	Spike	<0.44 LC Res	2.0 CS) 10/28/20	0 10:09 % R Limi		Qualifiers			
Sulfate LABORATORY CONTROL S Parameter	SAMPLE: 2	mg/L 2135652 Units	Spike Conc.	<0.44 LC Res	2.0 CS sult	0 10/28/20 LCS % Rec	0 10:09 % R Limi	its (Qualifiers			
Sulfate LABORATORY CONTROL S Parameter Chloride	SAMPLE: 2	mg/L 2135652 Units mg/L	Spike Conc.	<0.44 LC Res 0 2	2.0 CS sult 20.6	LCS % Rec 103	0 10:09 % R Limi	its (90-110	Qualifiers			
Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride	- 	mg/L 2135652 Units mg/L mg/L mg/L	Spike Conc. 20 20 553	<0.44 LC Res 0 2 0	2.0 CS sult 20.6 2.1) 10/28/20 LCS % Rec 103 105	0 10:09 % R Limi	its (90-110 90-110	Qualifiers	_		
Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate	SPIKE DUPL	mg/L 2135652 Units mg/L mg/L mg/L	Spike Conc. 20 21 553 MS	<0.44 LC Res 0 2 0 MSD	2.0 CS sult 20.6 2.1 20.6 2135654) 10/28/20 LCS % Rec 103 105 103	0 10:09 % R Limi	its (90-110 90-110 90-110		_	Мах	
Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate	SPIKE DUPL	mg/L 2135652 Units mg/L mg/L mg/L	Spike Conc. 20 20 553	<0.44 LC Res 0 2 0	2.0 CS sult 20.6 2.1 20.6) 10/28/20 LCS % Rec 103 105	0 10:09 % R Limi	its (90-110 90-110	Qualifiers % Rec Limits		Max RPD	Qual
Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX S	SPIKE DUPL	mg/L 2135652 Units mg/L mg/L mg/L ICATE: 21356 40216742001	Spike Conc. 20 21 353 MS Spike	<0.44 LC Res 0 2 0 MSD Spike	2.0 CS sult 20.6 2.1 20.6 2135654 MS Result) 10/28/20 LCS % Rec 103 105 103 MSD	0 10:09 % R Limi	its (90-110 90-110 90-110 90-110 MSD	% Rec		RPD	Qual
Sulfate LABORATORY CONTROL S Parameter Chloride Fluoride Sulfate MATRIX SPIKE & MATRIX S Parameter	SPIKE DUPL	mg/L 2135652 Units mg/L mg/L ICATE: 21350 40216742001 Result	Spike Conc. 20 20 553 MS Spike Conc.	<0.44 LC Res 0 2 0 9 MSD Spike Conc.	2.0 CS sult 20.6 2.1 20.6 2135654 MS Result 122) 10/28/20 LCS % Rec 103 105 103 MSD Result	MS % Rec	its 0 90-110 90-110 90-110 90-110 MSD % Rec	% Rec Limits		RPD	

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.



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.



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				
0216744002	MW-305				
40216744001	MW-304	SM 2540C	368700		
10216744002	MW-305	SM 2540C	368700		
0216744003	FIELD BLANK	SM 2540C	368700		
0216744001	MW-304	EPA 9040	368741		
0216744002	MW-305	EPA 9040	368741		
10216744003	FIELD BLANK	EPA 9040	369019		
40216744001	MW-304	EPA 300.0	369393		
0216744002	MW-305	EPA 300.0	369393		
40216744003	FIELD BLANK	EPA 300.0	369393		

	(Please Print Clearly)										UPPE	<u>R MIDWE</u>	EST REC	<u>GION</u>		Page 1 of
Company Na	ime: SCS Engiree	R		1	Ζ						MN: 6	612-607-1	700 V	VI: 920-469-2436		
Branch/Loca] /		Pac	eAna	AIYTIC xacelabs									
Project Cont	act: Meg Blodge	#												Quote #:		
hone:	608-216-7:	362		C	<u>) H/</u>	AIN				<u>T0</u>	DY			Mail To Contact:		
Project Num	ber: 25120069		A≖No			=H2SO4	D≖HNO		l Water		nol G=N	laOH	L	Mail To Company:		
Project Name	: Allima Ene	I-43		dium Bisul	lfate Solu	ition	I=Sodiu	m Thiosu	lifate .	¤Other				Mail To Address:		
Project State	· WI O		FILTEI (YES/	/NO)	¥/N	X	X	N	1N							
ampled By	(Print): Zach Wartso	<i>م</i>	PRESER (COD		Pick Latter	A	A	A	D					Invoice To Contact:		
ampled By		>												Invoice To Company:	SC	S Engineers
'O #:		Regulatory Program:			este			5	<u>i</u>					Invoice To Address:	283	U Dairy, Dr.
	able) MS/MSD		w = Water		Requ		1.	17	13						Mad	U Dairy, Dr. Br., WI 5371
in a star a star star a st		= Air = Biota = Charcoal	W = Water DW = Drinkin GW = Ground				10	ا لبد	1 7				-	Invoice To Phone:		
EP/		= Oil = Soil = Sludge	SW = Surface WW = Waste WP = Wipe		Analyses				l P					CLIENT	LAB C	OMMENTS Profile #
ACE LAB #			ECTION TIME	MATRIX	A		-1-	$ \vee$						COMMENTS		Jse Only)
001	MW304	10/15		GW		K	X	×	\mathbf{X}							I
asi l	MW305	10/15	1.000 and the second second	1944 📥 1997 - 1998 - 1998 -		议	K ²	$\overline{>}$	K							
063	FB	10/15	11:20			K	X	K.	^T X							
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					\nearrow	2										
			71	1	N											
			11,	1/1	1											
	rnaround Time Requested - Prelims	Relin	uished By:	(J	7	<i>—</i>	Dat	e/Vime:	20 8	2	Received	By:	1	Date/Time:	10-35	PACE Project No.
(rkusn 1	AT subject to approval/surcharge) Date Needed:	Reling	uished By:	1	v		1 pak	//// e/Tjme:			Received	By: Y	yar	Date/Time:	10-25	40216744
Transmit Prel nail #1:	im Rush Results by (complete what you wan	t): Y	Mary Dishegrey .	Jas	nn	in_	1/14	20 e/Time:	141	'5	Peoplied		->-/			Receipt Temp = LOI °C
nali #1: nali #2:			SIGAR	915	Sh'C	<u>s</u>	(0	17/20	> 09	5	Received	71 / / (<u> X </u>	the 10/1/20	20905	Sample Receipt pH
lephone: x:		Relinq	uished By:	-7-			Dat	e/Time:	_		Receiver	ely:V V V		J Date/Time:		Cooler Custody Seal
	imples on HOLD are subject to	Reling	uished By:				Date	e/Time:			Received	By:		Date/Time:		Presen / Not Present

Clie	ent	Nar	ne:	S		, Ľ	140	Zini	<i>0</i> 0 r	$\langle \langle \rangle$		S	Sam	ple				tio					rm									Bellevue	al Services, LLu e Street, Suite Bay, WI 5430	9 2
•								1		necked	l and n Lot# c				□No	DN/A		b Std #					H adju	isted):	•					when leted:	M	Date/ Time:		Page
				Gl	ass						Plast					Via	als				Ja	ars		Ge	ener	al	(>6mm) *	2	Act pH ≥9	12	2	usted	Volume	
Pace Lab #	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	NG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	N	VOA Vials (>6mm)	-12SO4 pH ≤2	VaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	oH after adjusted	(mL)	
001										12		$\overline{\Gamma}$																		-	×		2.5 / 5 / 10	
002										2		Π																			X		2.5/5/10	
003										2		1																			×		2.5/5/10	
004																															7		2.5/5/10	
005	/																																2.5/5/10	
006			/																														2.5/5/10	
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018																										7							2.5/5/10	
019																																	2.5/5/10	
Exceptions to preservation check: VOA, Coli 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			Colife	BP BP BP BP BP	1U 3U 3B 3N	TOX, 1 1 lite 250 r 250 r 250 r 250 r	r plast nL pla nL pla nL pla	tic un astic u astic I astic I	pres unpre: VaOH HNO3	S	enolic	VG: VG: VG: VG: VG: VG:	9A 9T 9U 9H 9M	40 ml 40 ml 40 ml 40 ml 40 ml 40 ml	L clea L amb L clea L clea L clea	r asc per Na r vial r vial r vial	orbic a Thic unpr HCL MeO) es	DA Via	Is (>6n JGI JGS WG WPI SPS ZPL GI	FU 9U FU FU 5T _C	4 oz 9 oz 4 oz 4 oz 120 r	ambe ambe clear plasti	er jar er jar jar u c jar astic	* If yes unpre unpres npres unpres Na Th	S S S		space o	olumn					

F-GB-C-046-Rev.03 (11Feb2020) Sample Preservation Receipt Form 02/04/2021 - Classification: Internal - ECRM7850510

ourier: XCS Logistics F Fed Ex F speedee F UPS F Waltco Client F Pace Other	1241 Bellevue Street, Green Bay, WI 543	이 성을 가지 않는 것을 잘 다 드는 것 같아. 것	ument No.: GBAY-0014-Rev.00	Author: Pace Green Bay Q	uality Office
Silient Name: Survey Ourier: CCS Logistics Fred Ex Pace Other: racking #: ustody Seal on Cooler/Box Present: Yes: no sacking Material: Yes: Yes: Ooler Temperature Uncorr: Uncorr: Yes: Yes: Name Uncorr: Yes: No Biological Tissue is Frozen: Yes: No Biological Tissue is Frozen: Yes: No Name: Uncorr: Yes: No Name: Yes: Name: Yes: Name: Yes: Name: Yes: Name: Yes: Name: Yes: Name: Yes: Yes: Name: Yes: Name: Yes: Name: Yes: Name: Yes: Name: Yes: <th>Sample</th> <th>Condition Upo</th> <th>n Receipt Form (</th> <th>SCUR)</th> <th></th>	Sample	Condition Upo	n Receipt Form (SCUR)	
racking #: 40215744 Dustody Seal on Cooler/Box Present: Yes No Seals intact: Eves No Packing Material: MSUbble Wrap Bubble Bags None Other Model Present: Yes No Seals intact: Eves None Coller Present: Yes No Seals intact: Eves No Samples on ice, cooling process has begun Person examining contents: Present: Yes No Biological Tissue is Frozen: Yes No Present: Yes Samples may be received at 5 0°C if shipped on Dry ice. Imain of Custody Present: Present: Mark Imain of Custody Filed Out: Imain 2 Mark 4 Dampler Name & Signature on COC: Mres No No No A Imain 5 Mark 4 Bamples Arreed within Hold Time: Mres No No A Imain 5 Mark 4 Sumples frozen upon receipt Ves No Date/Time: S S -VOA Samples frozen upon receipt Ves No Date/Time: S S Sufficie	ourier: 🔀 CS Logistics 🗖 Fed Ex 🗖 Spee			JO# : 4021	6744 III
Statudy Seal on Cooler/Box Present: Yes No Seals intact: Yes No Seaking Material: Subble Wrap F yes No Seals intact: Yes No Scoler Temperature Uncorr: Lot / Corr. Type of Ice: Weil Dry None Samples on ice. cooling process has begun emp Bank Present: Yes Yes No Biological Tissue is Frozen: Yes No emp should be above freezing to 6°C. Biological Tissue is Frozen: Yes No Labeled By Initials: Material: Schamptes may be received at 0°C if shipped on Dry Ice. Biological Tissue is Frozen: Yes No Labeled By Initials: Material: Schamptes may be received at 0°C if shipped on Dry Ice. Samples may be received at 0°C if shipped on Dry Ice. Labeled By Initials: Material: Schamples Arrived within Hold Time: Yes No Date/Time: Labeled By Initials: Material: -VOA Samples frozen upon receipt Yes No Date/Time: Material: Materia				 	
Statistical Seal on Samples Present:		🗖 no Seals intact			
Control represent: Control r	custody Seal on Samples Present: ビyes J Packing Material: アBubble Wrap 「 Bu Thermometer Used <u>SR - NA</u>	Kno Seals intact	∷		
Item should be above freezing to 6°C. Labeled By Initialitis: M.K. Stata Samples may be received at ≤ 0°C if shipped on Dry Ice. Labeled By Initialitis: M.K. Chain of Custody Present: Ørce INA 2. M.A. 1: WALK Chain of Custody Relinquished: Ørce INA 2. M.A. 1.0 IPI Dr Chain of Custody Relinquished: Ørce INA 2. M.A. 1.0 IPI Dr Samples Arrived within Hold Time: Ørce INA 3. 5. - VOA Samples frozen upon receipt IVes INA 6. Rush Turn Around Time Requested: IVes INA 7. Sufficient Volume: 8. 6. For Analysis: Ørce INA 9. -Pace Containers Used: Øres INA 10. -Pace IR Containers Used: Øres INA 10. Filtered volume received for Dissolved tests IVes INA 11. Sample Labels match COC: IVes INA 12.003TD* Field Blank: MLIO-17-7 -Includes date/time/ID/Analysis Matrix: U IXI IXI III IVE Sample Labels match COC: IVes INA 12.003TD* Field Blank: MLIO-17-7 -Includes date/time/ID/Analy		Biological	Tissue is Frozen: 🌌 v		
Chain of Custody Present: Sees INo Implified Out		Divivyicai	113306 13 1 102611. 1 y		<u>V@/Initials:</u>
Chain of Custody Filled Out: Ives Save Ives 2. Mail A Iol IPD P Chain of Custody Relinquished: Stress Ives Ives Ives 2. Mail A Iol IPD P Sampler Name & Signature on COC: Stress Ives	tiota Samples may be received at $\leq 0^{\circ}$ C if shipped on			and the second	
Shain of Custody Relinquished: Stres No NA 3. Sampler Name & Signature on COC: Stres No NA 4. Samples Arrived within Hold Time: Stres No 5. - VOA Samples frozen upon receipt Yes No Date/Time: Short Hold Time Analysis (<72hr):	hain of Custody Present:	and the second sec		+ phone, 003 m	atrix MULK
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- VOA Samples frozen upon receipt IYes No Date/Time: Short Hold Time Analysis (<72hr):	ampler Name & Signature on COC:		4.		
Short Hold Time Analysis (<72hr):	amples Arrived within Hold Time:	X¥es □No	5.		
Rush Turn Around Time Requested: Yes Yes 7. Sufficient Volume: 8. For Analysis: Yes No N/A Sorrect 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. containers Intact: Yes No Yes Includes date/time/ID/Analysis Matrix: Yes No -Includes date/time/ID/Analysis Matrix: Yes No Yes Tip Blank Custody Seals Present Yes No Yes No Pace Trip Blank Lot # (if purchased); If checked, see attached form for addit			Date/Time:		
Sufficient Volume: 8. For Analysis: Ves For Analysis: Ves Orrect Containers Used: Ves -Pace Containers Used: Ves -Pace IR Containers Used: Ves Ontainers Intact: Ves Iltered volume received for Dissolved tests Ves Sample Labels match COC: Ves -Includes date/time/ID/Analysis Matrix: Ves No Sample Labels Present: Ves Ves No Ves No Ves No Ves No Sample Labels match COC: Ves -Includes date/time/ID/Analysis Matrix: Ves No Pace Trip Blank Lot # (if purchased): Ves Client Notification/ Resolution: Date/Time: <		Yes Mo	6.		
For Analysis: Decision MS/MSD: Tyres Decision N/A Correct Containers Used: Mes No 9. -Pace Containers Used: Mes No N/A -Pace IR Containers Used: Mes No N/A -Pace IR Containers Used: Mes No N/A Containers Intact: Decision No Mes Sample Labels match COC: Press Zno N/A 12/003750'' Field Blank'' Mes -Includes date/time/ID/Analysis Matrix: Matrix: No No No Frip Blank Custody Seals Present Pres No Mes No Mes Pace Trip Blank Lot # (if purchased):	Rush Turn Around Time Requested:		. 7.		
-Pace Containers Used: Yes No N/A -Pace IR Containers Used: Yes No Yes Containers Intact: Yes No Yes Sample Labels match COC: Yes No Yes -Includes date/time/ID/Analysis Matrix: Yes No -Includes date/time/ID/Analysis Matrix: Yes No Trip Blank Present: Yes No Yes No Crip Blank Custody Seals Present Yes No Yes Yes Pace Trip Blank Lot # (if purchased):		5D: □Yes ট₩5 □N/A			
-Pace IR Containers Used: □Yes<□No<	Correct Containers Used:	it Kes □No	9.		
Containers Intact: Desces No 10. Filtered volume received for Dissolved tests Dyes No 11. Sample Labels match COC: Dyes DNo N/A 12.003TD* Field Blank: Mth.10-17-7 -Includes date/time/ID/Analysis Matrix: U NUTIME Date NUTIME Date NUTIME Date Frip Blank Present: Dyes No Date 13. Date Date Pace Trip Blank Lot # (if purchased): Dyes No Date If checked, see attached form for additional comments Date/Time:	-Pace Containers Used:	∭es □No □N/A			
Filtered volume received for Dissolved tests IYes No I1. Sample Labels match COC: IYes INO I2.003TEN Field Blank: IVELO-17-76 -Includes date/time/ID/Analysis Matrix: IVELO-17-76 IVELO-17-76 IVELO-17-76 Frip Blank Present: IVES IVES IVES IVELO-17-76 IVELO-17-76 Pace Trip Blank Lot # (if purchased): IVES IVES IVELO-17-76 IVELO-17-76 Pace Trip Blank Lot # (if purchased): IVES IVES IVELO-17-76 IVELO-17-76 Person Contacted:	-Pace IR Containers Used:				
Sample Labels match COC: Ives INo In/A 12.003TD' Field Blank: MK 10-17-7 -Includes date/time/ID/Analysis Matrix: V NU TIME DATE IVIT IN DATE Frip Blank Present: Ives INo VA 13. Frip Blank Custody Seals Present Ives INo Ives Ives Pace Trip Blank Lot # (if purchased): Ives INo Ives If checked, see attached form for additional comments Person Contacted: Ives Ives Ives Ives Ives	Containers Intact:	Di Kes □No	10.		
-Includes date/time/ID/Analysis Matrix: U NU TIME D&FC WITP Trip Blank Present: Image: Seals Present Image: Seal	iltered volume received for Dissolved tests	□Yes □No 94 574	11.		
Trip Blank Present: Image: Seals Present	Sample Labels match COC:		12.003ED"Fie	ld Blank"	MUK 10-17-25
Frip Blank Custody Seals Present	-Includes date/time/ID/Analysis Matrix:	<u> </u>	No time Da	He	10/17/20
Pace Trip Blank Lot # (if purchased): Client Notification/ Resolution: Person Contacted: Date/Time:	rip Blank Present:		13.		Y
Client Notification/ Resolution: If checked, see attached form for additional comments Person Contacted: Date/Time:	지수가 가지 않는 것 같은 것이 나는 병원에 가지 않는 것이 같이 가지 않는 것이다.				
	Client Notification/ Resolution:			ked, see attached form for	additional comments
	and the standard difference of the standard standa	Date	/ lime: <u>the states</u>		
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)2/04/2021 -	Classification:	Internal	- ECRM7850510

C4 December Resample

2020 Annual Groundwater Monitoring and Corrective Action Report <u>www.scsengineers.com</u>

02/04/2021 - Classification: Internal - ECRM7850510



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,

Day Milery

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



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



SAMPLE ANALYTE COUNT

Project:25220069.00 EDGEWATER I-43 ASHPace 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



Project: 25220069.00 EDGEWATER I-43 ASH

Pace Project No.:

: 40220100

Sample: MW-301	Lab ID:	Collecte	d: 12/18/20	0 11:45	Received: 12	/18/20 13:10 Ma	atrix: Water		
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytica	I Method:							
	Pace Ana	alytical Services	- Green Ba	iy					
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	Analytica	I Method: EPA 3	00.0						
	Pace Ana	alytical Services	- Green Ba	iy					
Fluoride	0.64	mg/L	0.32	0.095	1		12/21/20 21:09	16984-48-8	



ANALYTICAL RESULTS

Project: 25220069.00 EDGEWATER I-43 ASH

Pace Project No.:

o.: 40220100

Sample: MW-302	Lab ID:	40220100002	Collecte	d: 12/18/20	0 10:35	Received: 12	/18/20 13:10 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytica	I Method:							
	Pace Ana	alytical Services	- Green Ba	iy					
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	Analytica	I Method: EPA 3	00.0						
	Pace Ana	alytical Services	- Green Ba	iy					
Fluoride	0.73	mg/L	0.32	0.095	1		12/21/20 21:52	16984-48-8	



ANALYTICAL RESULTS

Project:	25220069.00 EDGEWATER I-43 ASH
1 10/000	20220000.00 EDGEWATER 140 A011

Pace Project No.: 40220100

ct No.:	40220100	

Sample: 01FB	Lab ID: 4	40220100003	Collected	d: 12/18/20	0 10:40	Received: 12/	18/20 13:10 Ma	trix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions		Aethod: EPA 3		y					
Fluoride	<0.095	mg/L	0.32	0.095	1		12/21/20 22:07	16984-48-8	



QUALITY CONTROL DATA

Project: Pace Project No.:	25220069.00 EDG 40220100	EWATER I-43 AS	SH									
QC Batch:	374292		Anal	ysis Metho	od: E	EPA 300.0						
QC Batch Method:	EPA 300.0			ysis Desci		300.0 IC Ani	ons					
				pratory:	•	Pace Analyt		es - Green	Bay			
Associated Lab Sar	nples: 402201000	001, 4022010000		,		acc, and,		0.000	24)			
METHOD BLANK:	2163483			Matrix: V	Vater							
Associated Lab Sar	nples: 402201000	001, 4022010000	2, 4022010	00003								
			Bla	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	Analy	zed	Qualifier	S			
Fluoride		mg/L		<0.095	0.32	2 12/21/20) 12:27					
LABORATORY COI		2163484										
LABORATORY COI	VIROL SAMPLE.	2103464	Spike	1.	CS	LCS	% Re	20				
Parar	neter	Units	Conc.		sult	% Rec	Limit		Qualifiers			
Fluoride		mg/L		2	2.0	100) 9	90-110		_		
MATRIX SPIKE & M	IATRIX SPIKE DUP	LICATE: 2163			2163486							
		40220100001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	r Units	Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	% Rec	RPD	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.



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.



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 40220100002	MW-301 MW-302			_	
40220100001 40220100002 40220100003	MW-301 MW-302 01FB	EPA 300.0 EPA 300.0 EPA 300.0	374292 374292 374292		

(Please Print Clearly)				•			<u>UPP</u>	ER MIDWEST	REGION (Page 1	of
Company Name: SCS Engineer	5	, ,	5)				MN:	612-607-170	WI: 920-469-2436	12/1920	<u> </u>
Branch/Location: Madison, L			Pac		alytical *			UNE	- 20100	-10-21-4C	Jall
Project Contact: Tom Korwos	k:	1		www.	pecelabs.com			ι Γ	Quote #:		
Phone: 608-216 - 73	369	1	СН	AIN	OF C	UST	OD	1	Mail To Contact:		
Project Number: 25220369-00				C=H2SO4	*Preservation C	odes	ethanol G		Mail To Company:		
Project Name: Edyewater I-43	AshFailt	H=Sodium Bi			I=Sodium Thios				Mail To Address:		
Project State:	7.0.00-	FILTERED? (YES/NO)	Y/N	N		T	T		-		
Sampled By (Print): WAis uper (aset PI	RESERVATION	Pick						Invoice To Contact:		
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	= Charcoal GW = = Oil SW =	Ground Water Surface Water	yses	5 S					Invoice To Phone:		
your sample si	= Sludge WP =		Analy	而					CLIENT	LAB COMMENTS	Profile #
PACE LAB # CLIENT FIELD ID		MATRO	< .						COMMENTS	(Lab Use Only)	
001 MW-301		45 GU		\mathbb{N}							
002 MW-302		1:35 Gw		\bowtie	1						
007 01 FB	12/18 10	5:40 Gu).	\mathbb{N}							
			N. AN								
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Rush Turnaround Time Requested - Prelims	Relinfuister	by /_		\leq	Pate/Time;	10	Receive		h j Date Tipreta	Det Im	ject No.
(Rush TAT subject to approval/surcharge) Date Needed:	Relimination	THY:	r k		Date/June-	· 120		<u>inn</u>			000
Transmit Prelim Rush Results by (complete what you want	t): 1	la	ma_		12186	10/30	Vuc	arku	Leeper 12/18/20		$\partial + \partial c$
nail #1:	Relinquished	By:			Date/Time:		Received	^{тву:} Д	Date/Time:	Sample Re	celpt pH
ephone:	Relinquished	By:			Date/Time:		Received	By:	Date/Time:	OP Adj	usted
x: Samples on HOLD are subject to	Relinguished	0			Date/Time:		Received		Date/Time:	Cooler Cust Present /	

ent l All c			eeding	pres	ervatio	on hav	ve bee	n che	cked	and n Lot# o	oted b	elow:	⊔Yes	⊐No ,			tior <u>4</u> (sted):					Initial v compl			Date/ Time:	
			Gla	ISS						Plast					Via				Ľ		ırs			nera	[VOA Vials (>6mm) *	152	VaOH+Zn Act pH ≥9	≥12	<u>8</u>	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	voA Vial	H2SO4 pH ≤2	NaOH+Zr	NaOH pH ≥12	HNO3 pH ≤2	pH after a	(1115)
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F-GB-C-046-Rev.03 (11Feb2020) Sample Preservation Receipt Form

Pace Analytical [®]	Sample Co	onditio	ment Name: n Upon Receipt (SC	UR)	nt Revised: 26Mar2020
1241 Bellevue Street, Green Bay, WI 54302	ENV-F		ument No.: BAY-0014-Rev.00	Pace G	Author: reen Bay Quality Office
	-	1			
Sample	Condition	Upo	n Receipt Forn	n (SCUR)	
$C \cap C \subset C$			Project #:		
Client Name:	gure	en	2	WO# : •	40220100
Courier: CS Logistics Fed Ex Speed		Γv	/altco		
Client Pace Other:				40000100	
Fracking #:			-	-0220100	
Custody Seal on Cooler/Box Present: 🥅 yes 🛛 Custody Seal on Samples Present: 🔲 yes 🗱			en en la companya de		
Packing Material: T Bubble Wrap, T Bubb			E F Other		
Thermometer Used <u>SR - N/A</u>			Blue Dry None	Samples o	n ice, cooling process has begun
Cooler Temperature Uncorr: RDT /Corr:		-			Person examining contents
emp Blank Present: 🔽 yes 🏹 no	Biolo	gical	lissue is Frozen: [∫yes [no	Date: //////////
emp should be above freezing to 6° C. Biota Samples may be received at $\leq 0^{\circ}$ C if shipped on Di	vice				Labolado
Chain of Custody Present:		□n/a	1		Labeled By Initials:
Chain of Custody Filled Out:				+Invoic	
Chain of Custody Relinquished:	ØYes □No		ter 🖉 bei al mana analas 👘 👘		<u> </u>
Sampler Name & Signature on COC:	ØYes □No		 To be a set of the s		
Samples Arrived within Hold Time:			5.		
- VOA Samples frozen upon receipt	□Yes □No		Date/Time:		
hort Hold Time Analysis (<72hr):			6.		
Rush Turn Around Time Requested:			3. 7.		
Sufficient Volume:		<u></u>	8.		
For Analysis: ǾYes ⊡No MS/MSD	□Yes ØNo	□n/a			
Correct Containers Used:			9.		
-Pace Containers Used:		□n/a			
-Pace IR Containers Used:	□Yes □No				
Containers Intact:			10.		
iltered volume received for Dissolved tests	□Yes □No				
Sample Labels match COC:					
-Includes date/time/ID/Analysis Matrix:	$-\mathcal{W}$				
rip Blank Present:	□Yes □No		13.		
rip Blank Custody Seals Present	□Yes □No	ι,			
ace Trip Blank Lot # (if purchased):		1			
Client Notification/ Resolution: Person Contacted:		Date/		ecked, see attac	hed form for additional comments
Comments/ Resolution:					
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02/04/2021 - Classification: Internal - ECRM7850510

Page A of _____

Appendix D

Historical Monitoring Results

2020 Annual Groundwater Monitoring and Corrective Action Report

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02/04/2021 - Classification: Internal - ECRM7850510

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	

Location ID:	MW-302																				
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	

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

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

lumber 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	10/15/202
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

2020 Annual Groundwater Monitoring and Corrective Action Report <u>www.scsengineers.com</u>

02/04/2021 - Classification: Internal - ECRM7850510

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 completion of 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

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TECHNICAL MEMORANDUM January 25, 2021 Page 2

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 significant 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.)

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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.

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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.

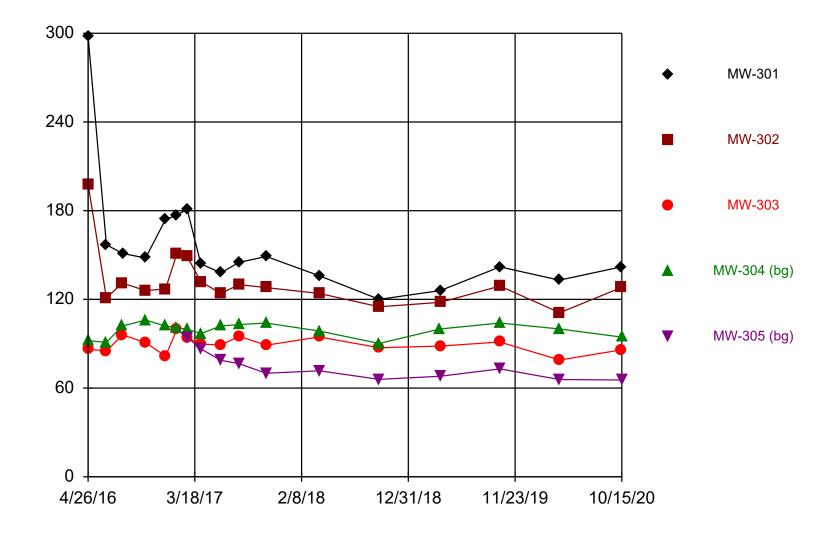
NDK/SCC

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

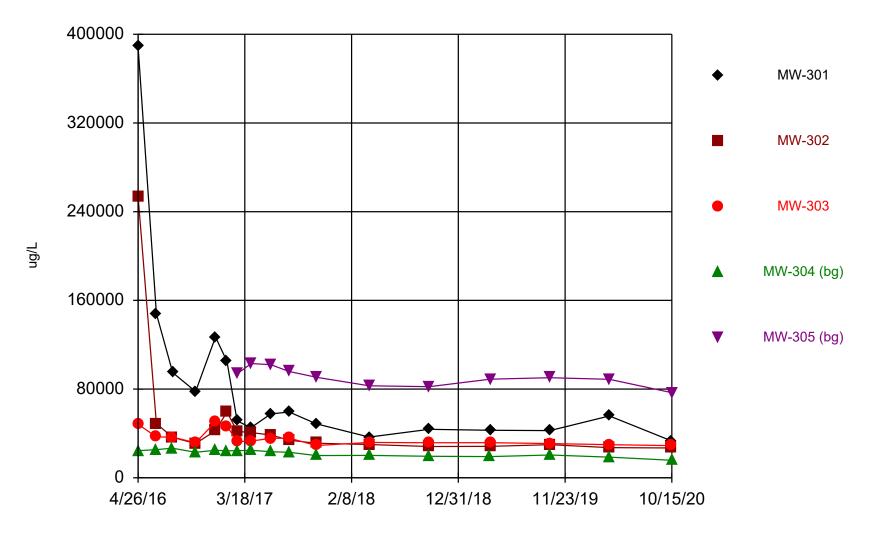
ng/L

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

				oldin delinty olient	
	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

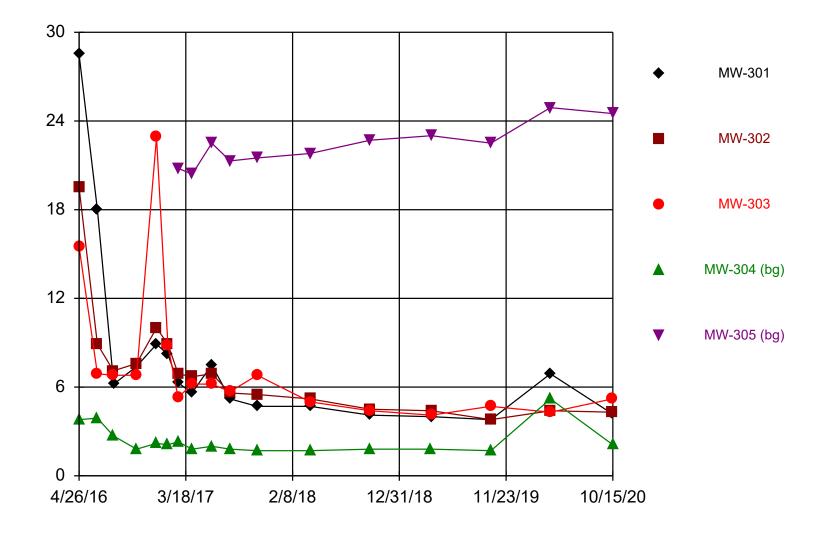
Constituent: Calcium (ug/L) Analysis Run 12/1/2020 2:06 PM View: I-43 LF Detection Monitoring

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

mg/L

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

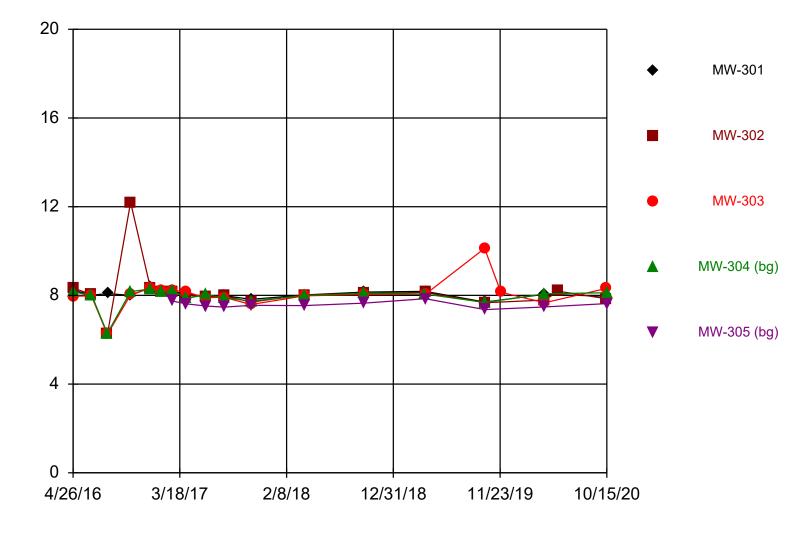
02/04/2021 - Classification: Internal - ECRM7850510

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

Std. Units

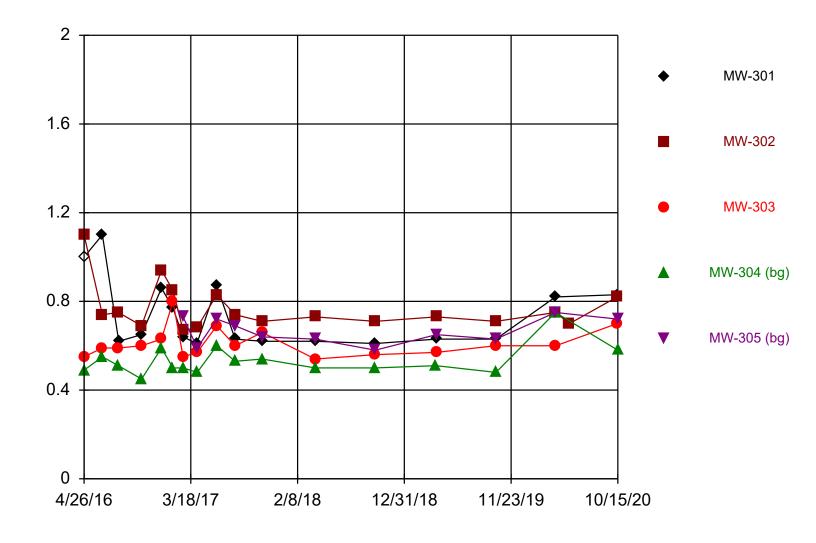
Constituent: Field pH (Std. Units) Analysis Run 12/1/2020 2:06 PM View: I-43 LF Detection Monitoring

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

Sanitas[™] v.9.6.27 Software licensed to SCS Engineers. UG Hollow symbols indicate censored values.





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

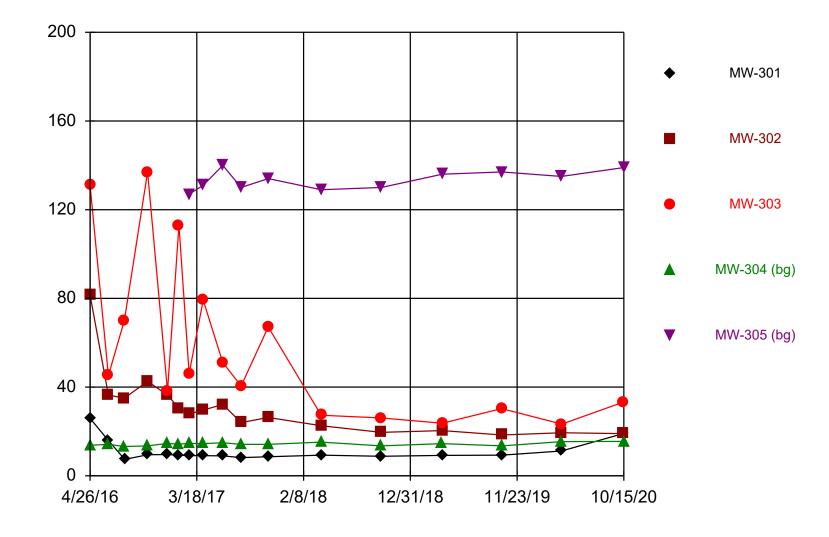
mg/L

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

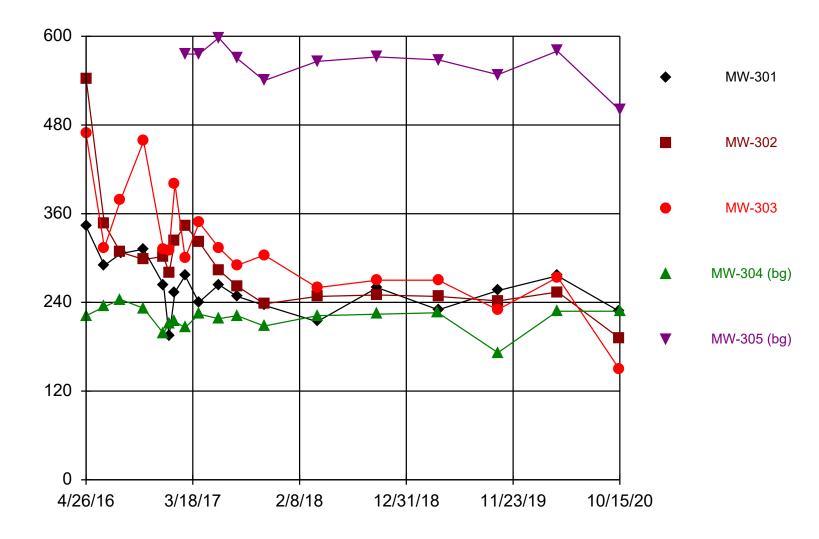


Time Series Analysis Run 12/1/2020 2:03 PM View: I-43 LF Detection Monitoring I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

mg/L

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

mg/L

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

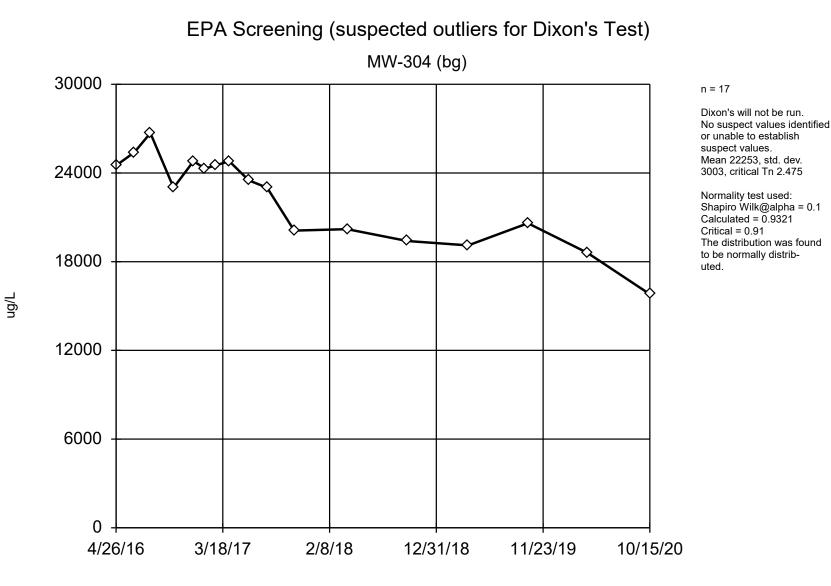
	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	343	543	468	222	
6/21/2016	290	346	314	234	
8/9/2016		308	378	244	
8/10/2016	306				
10/19/2016	312	298	458	232	
12/19/2016	264	302	312	198	
1/5/2017	194	280	310	212	
1/23/2017	254	324	400	214	
2/23/2017	276	344	300	206	576
4/6/2017	240	322			
4/7/2017			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

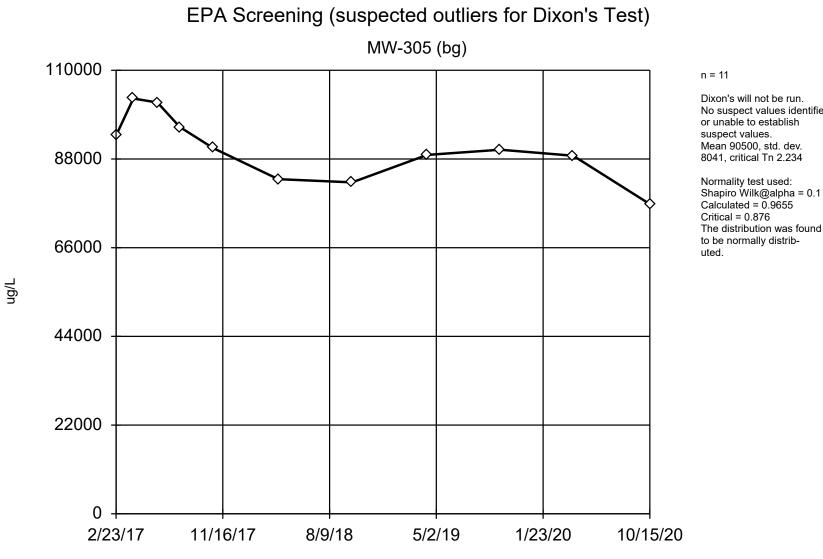
		I-43 Ash Dispo	sal Facility	Client: SCS Engine	ers Data: I43_2020_Oct_All	Printed 12	2/30/202	0, 11:46 PN	1		
<u>Constituent</u>	Well	<u>Outlier</u>	<u>Value(s)</u>	Date(s)	Method	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	Std. Dev.	Distribution	Normality Test
Calcium (ug/L)	MW-304 (bg)	No	n/a	n/a	EPA 1989	0.05	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

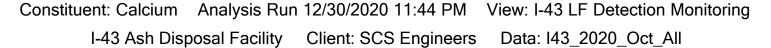


Constituent: Calcium Analysis Run 12/30/2020 11:44 PM View: I-43 LF Detection Monitoring I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

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

	MW-304
4/26/2016	24500
6/21/2016	25400
8/9/2016	26700
10/19/2016	23000
12/19/2016	24800
1/23/2017	24300
2/23/2017	24500
4/7/2017	24800
6/6/2017	23500
8/1/2017	23000
10/23/2017	20100
4/3/2018	20200
10/4/2018	19400
4/8/2019	19100
10/8/2019	20600
4/7/2020	18600
10/15/2020	15800

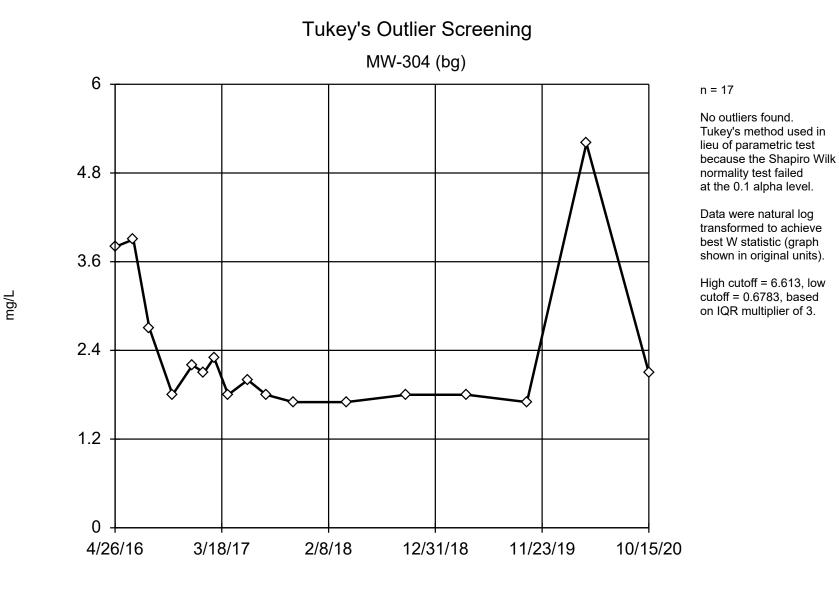


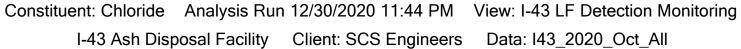


No suspect values identified

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

	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

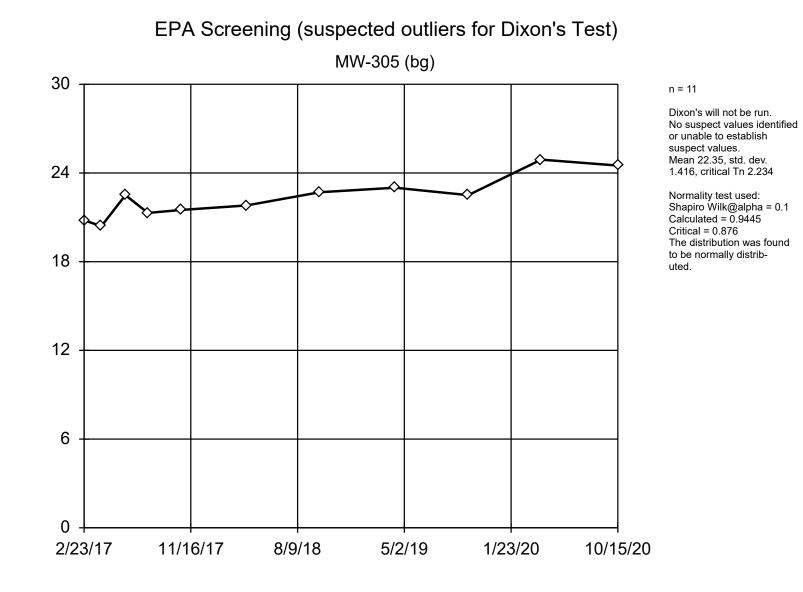


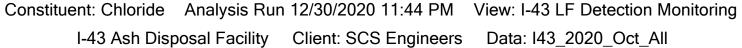


Tukey's Outlier Screening

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

	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	22
1/23/2017	2.1
2/23/2017	23
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



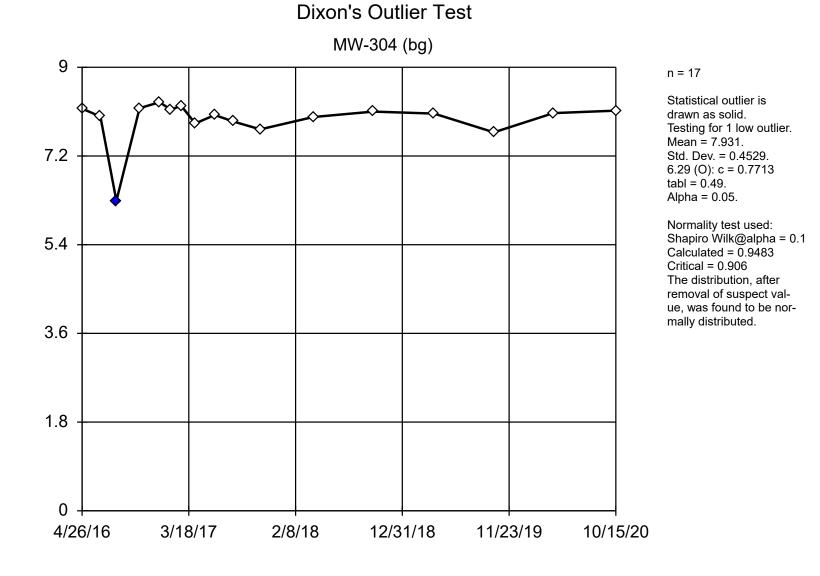


mg/L

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

	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

Std. Units

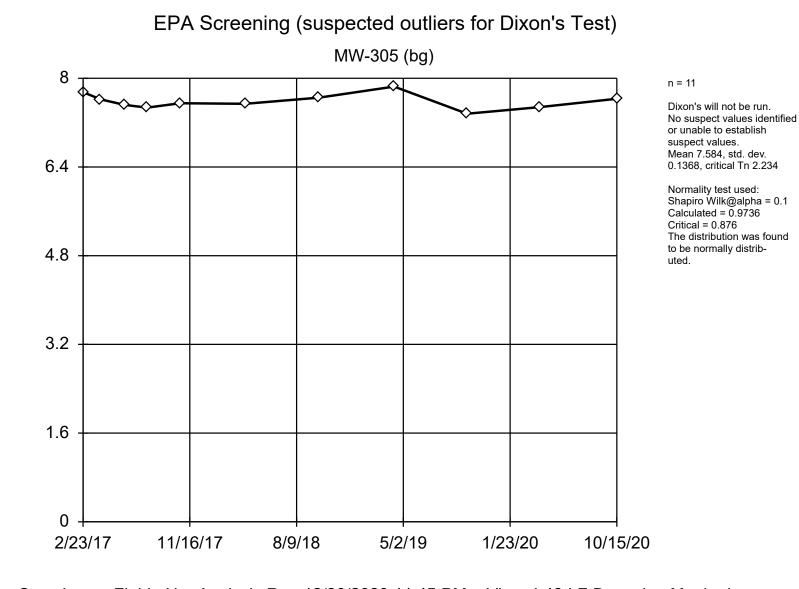


Constituent: Field pH Analysis Run 12/30/2020 11:44 PM View: I-43 LF Detection Monitoring I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Dixon's Outlier Test

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

	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

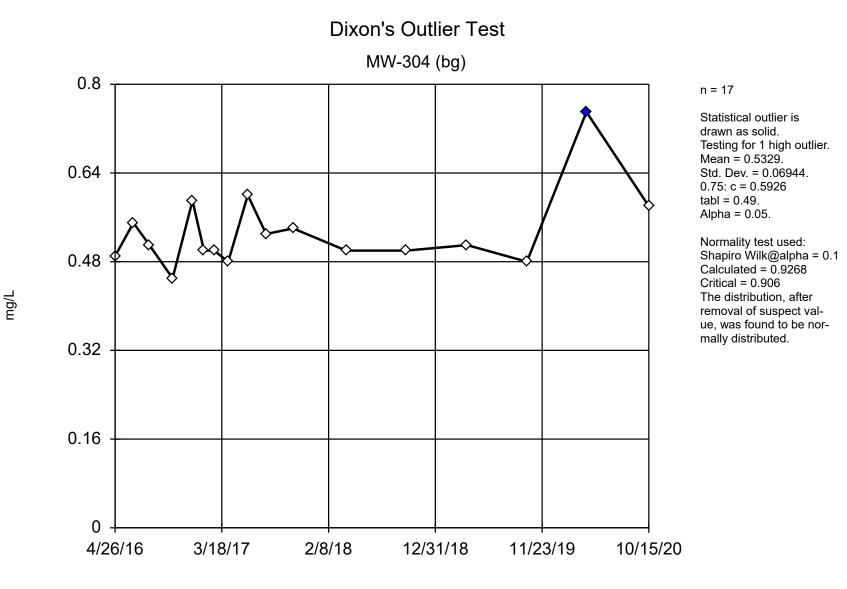


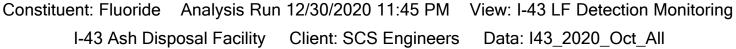
Constituent: Field pH Analysis Run 12/30/2020 11:45 PM View: I-43 LF Detection Monitoring I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Std. Units

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

	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

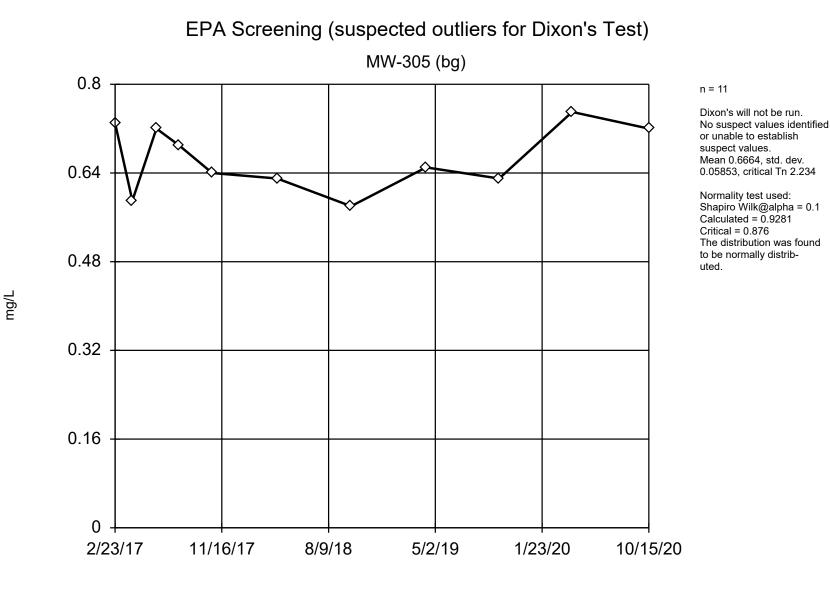


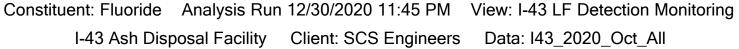


Dixon's Outlier Test

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

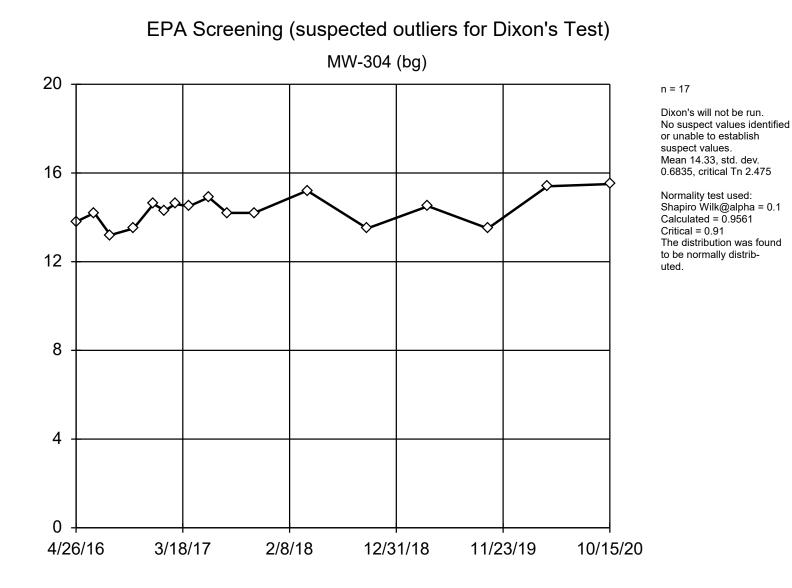
		MW-304 (bg)
4/2	26/2016	0.49
6/2	21/2016	0.55
8/9	9/2016	0.51
10	/19/2016	0.45
12	/19/2016	0.59
1/2	23/2017	0.5
2/2	23/2017	0.5
4/7	7/2017	0.48
6/6	6/2017	0.6
8/1	1/2017	0.53
10	/23/2017	0.54
4/3	3/2018	0.5
10	/4/2018	0.5
4/8	3/2019	0.51
10	/8/2019	0.48
4/7	7/2020	0.75 (O)
10	/15/2020	0.58

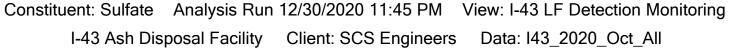




Constituent: Fluoride (mg/L) Analysis Run 12/30/2020 11:46 PM View: I-43 LF Detection Monitoring

	MW-305 (bg)
2/23/2017	0.73
4/7/2017	0.59
6/6/2017	0.72
8/1/2017	0.69
10/23/201	17 0.64
4/3/2018	0.63
10/4/2018	
4/9/2019	
10/8/2019	
4/7/2020	
10/15/202	20 0.72



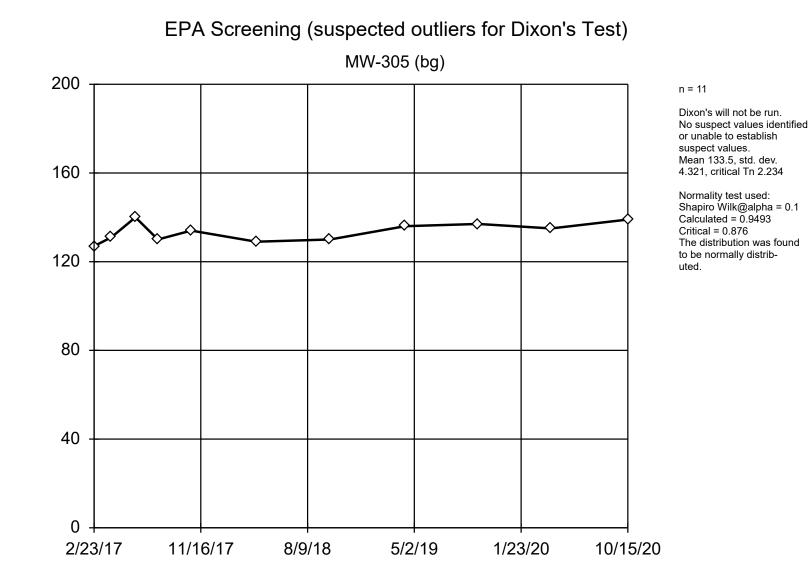


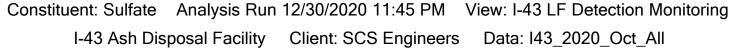
mg/L

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

	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

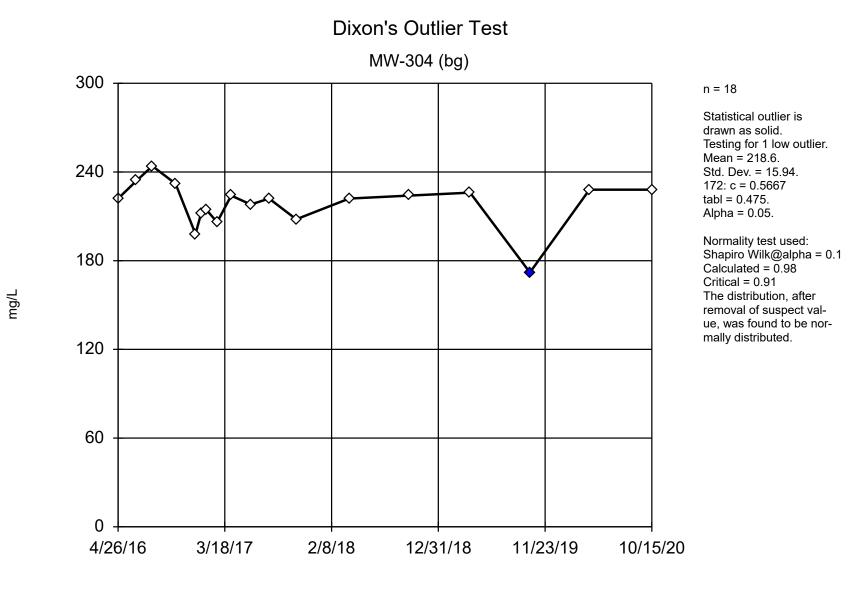
mg/L





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

	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

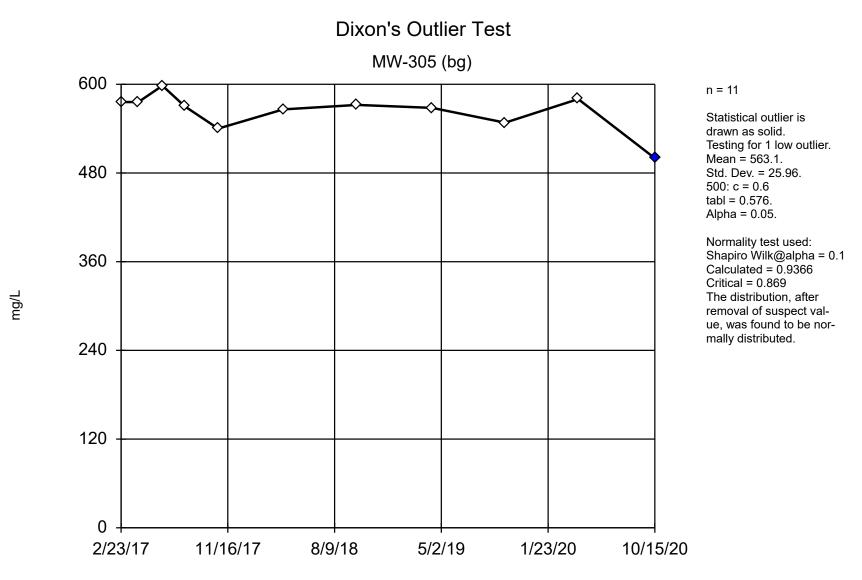


Constituent: Total Dissolved Solids Analysis Run 12/30/2020 11:45 PM View: I-43 LF Detection Monitoring I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

Dixon's Outlier Test

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

	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



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

	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)

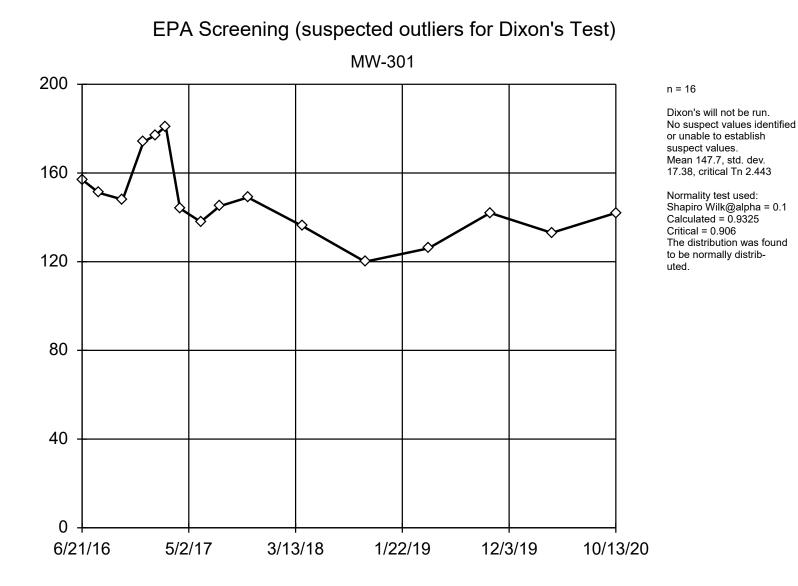
Attachment 3

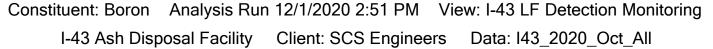
Outlier Analysis – Intrawell

Outlier Analysis

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

<u>Constituent</u>	Well	<u>Outlier</u>	<u>Value(s)</u>	Date(s)	Method	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	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

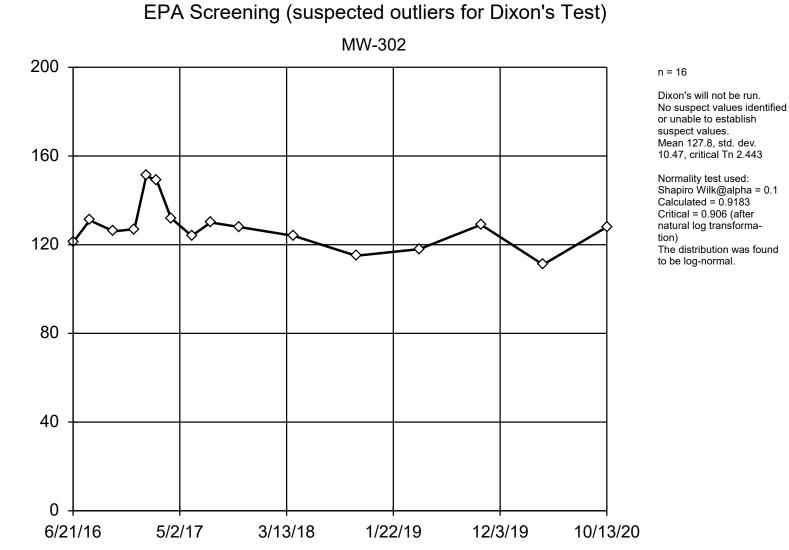


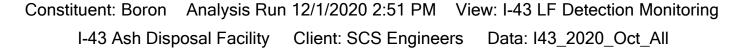


ng/L

Constituent: Boron (ug/L) Analysis Run 12/1/2020 2:52 PM View: I-43 LF Detection Monitoring

	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

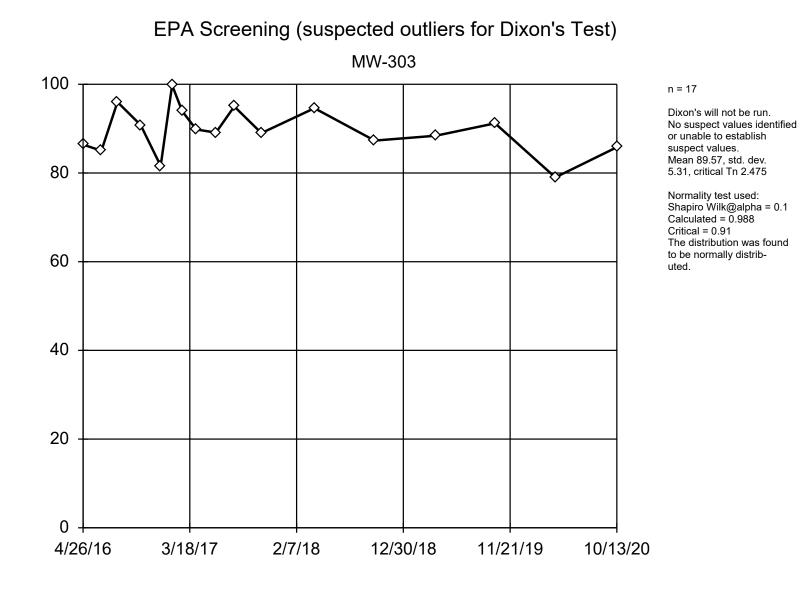




ng/L

Constituent: Boron (ug/L) Analysis Run 12/1/2020 2:52 PM View: I-43 LF Detection Monitoring

	MW-30
4/26/201	16 198 (R
6/21/201	16 121
8/9/2016	5 131
10/19/20	016 126
12/19/20	016 127
1/23/201	17 151
2/23/201	17 149
4/6/2017	7 132
6/6/2017	7 124
8/1/2017	7 130
10/23/20	017 128
4/3/2018	3 124
10/4/201	18 115
4/9/2019	9 118
10/8/201	19 129
4/8/2020	0 111
10/13/20	020 128



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

ng/L

Constituent: Boron (ug/L) Analysis Run 12/1/2020 2:52 PM View: I-43 LF Detection Monitoring

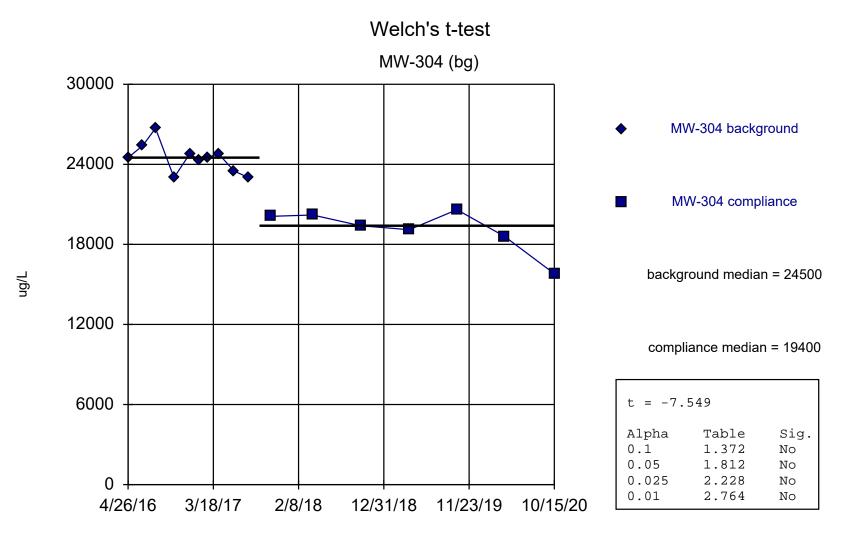
	MW-303
4/26/2016	86.4
6/21/2016	85
8/9/2016	96
10/19/2016	90.8
12/19/2016	81.6
1/23/2017	99.8
2/23/2017	93.9
4/7/2017	89.8
6/6/2017	89.1
8/1/2017	95
10/23/2017	89
4/3/2018	94.6
10/4/2018	87.3
4/9/2019	88.4
10/7/2019	91.2
4/8/2020	79
10/13/2020	85.8

Attachment 4

Welch's/Mann-Whitney Comparison

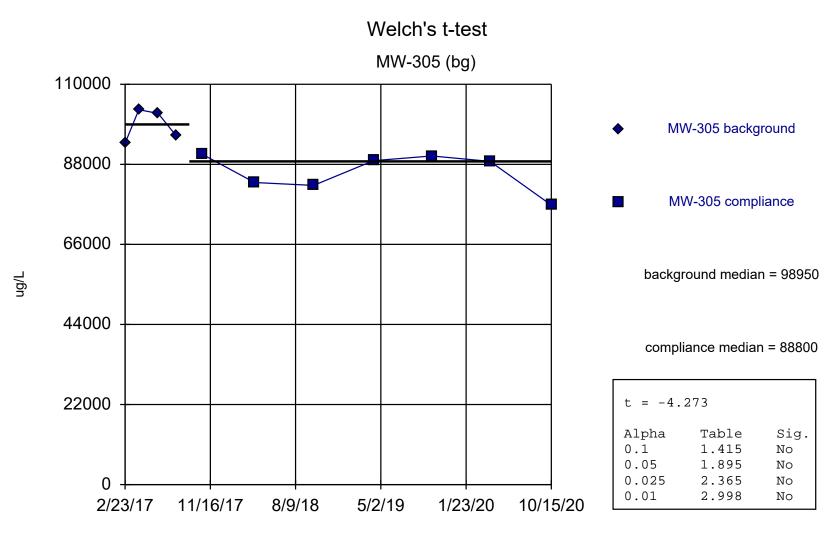
Welch's t-test/Mann-Whitney

	I-43 Asl	n Disposal	Facility	Client: SC	S Engineer	rs Data	: I43_2020_C	Oct_All	Printed 1/3/2021, 5:37 PM	
Constituent	Well	<u>Calc.</u>	<u>0.1</u>	<u>0.05</u>	<u>0.025</u>	<u>0.01</u>	<u>Alpha</u>	<u>Sig.</u>	<u>Bg. Wells</u>	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



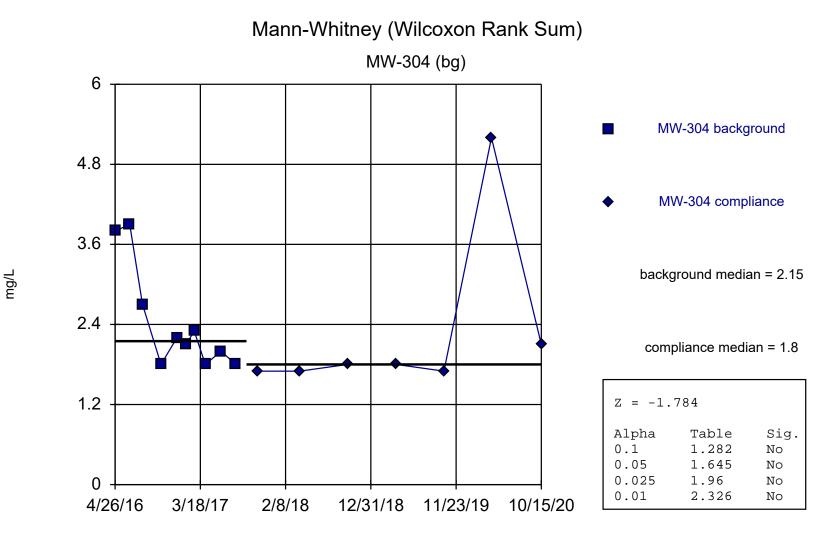
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9326, critical = 0.842.

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



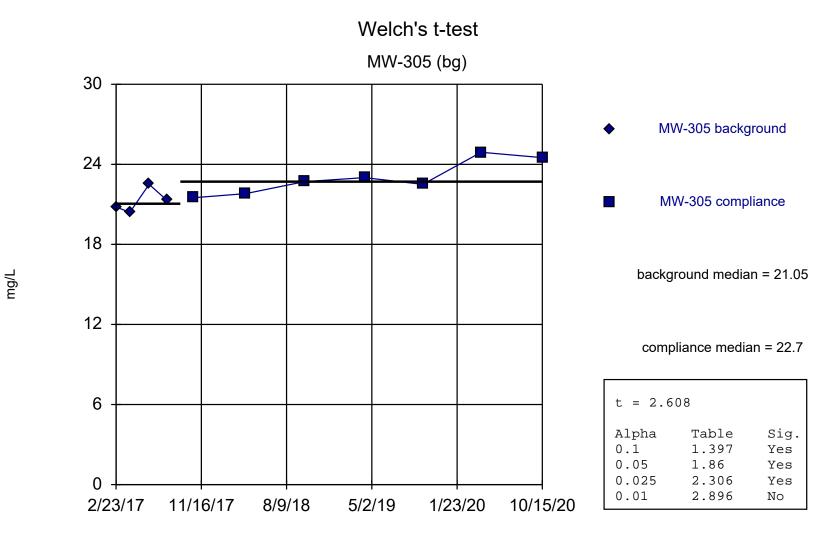
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8812, critical = 0.748.

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



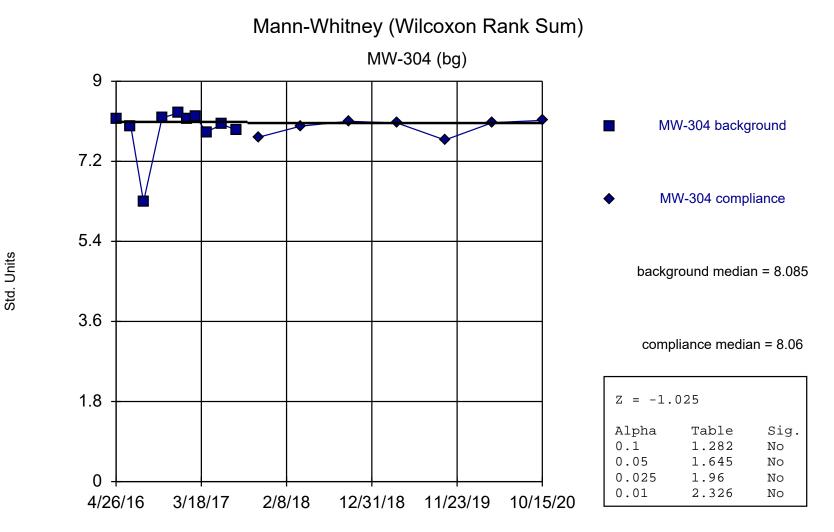
Mann-Whitney (Wilcoxon Rank Sum) used in lieu of Welch's t-test because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level.

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



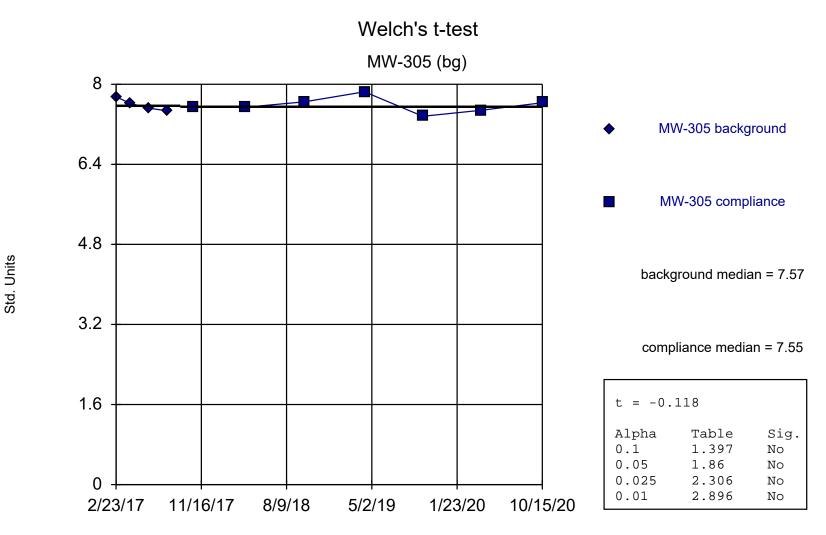
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9364, critical = 0.748.

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



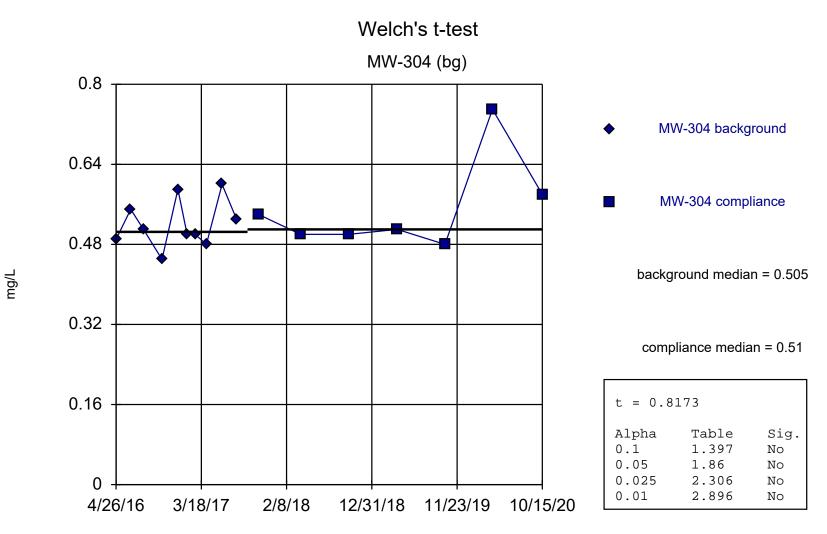
Mann-Whitney (Wilcoxon Rank Sum) used in lieu of Welch's t-test because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level.

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



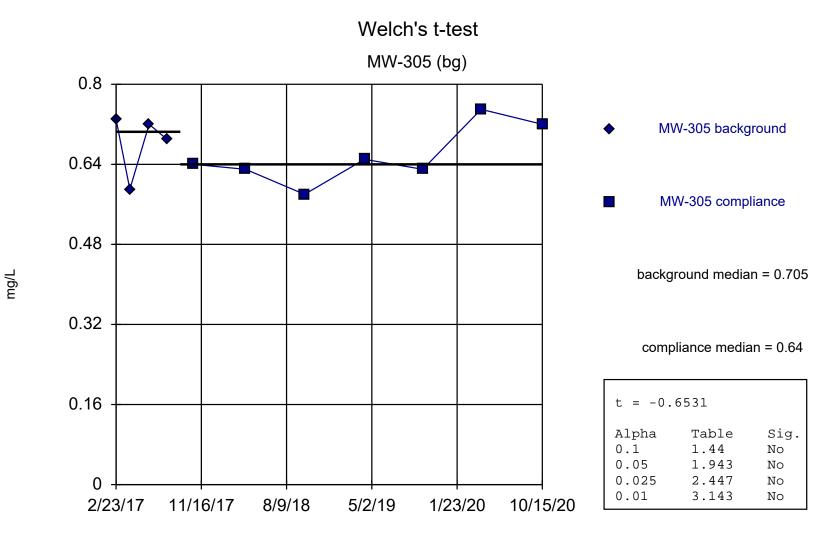
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9554, critical = 0.748.

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



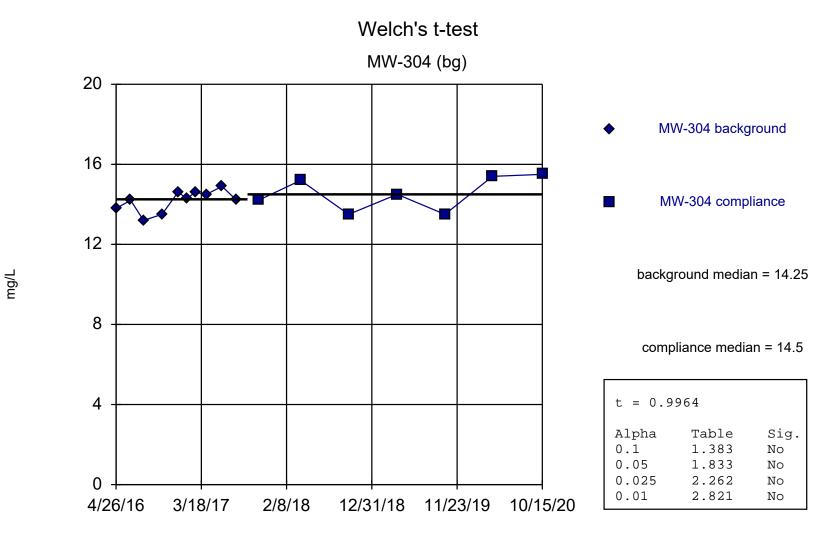
Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9407, critical = 0.842.

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



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

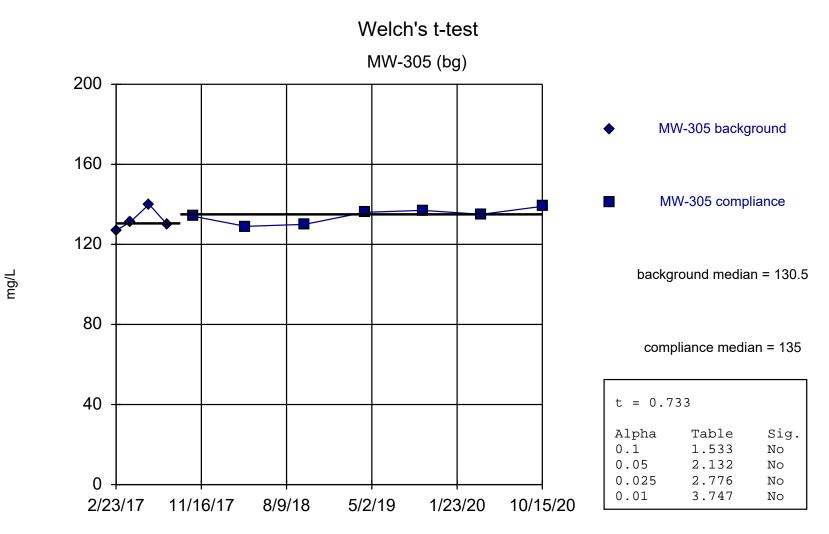
Constituent: Fluoride Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All



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

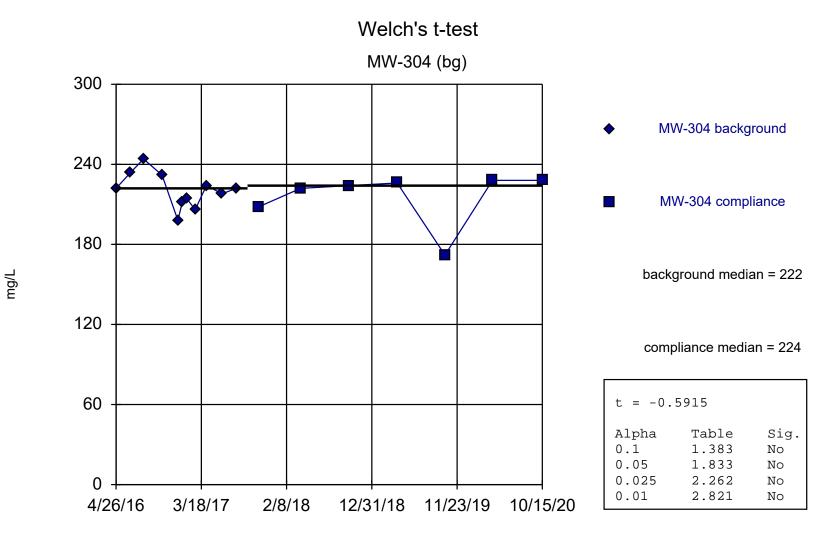
02/04/2021 - Classification: Internal - ECRM7850510



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

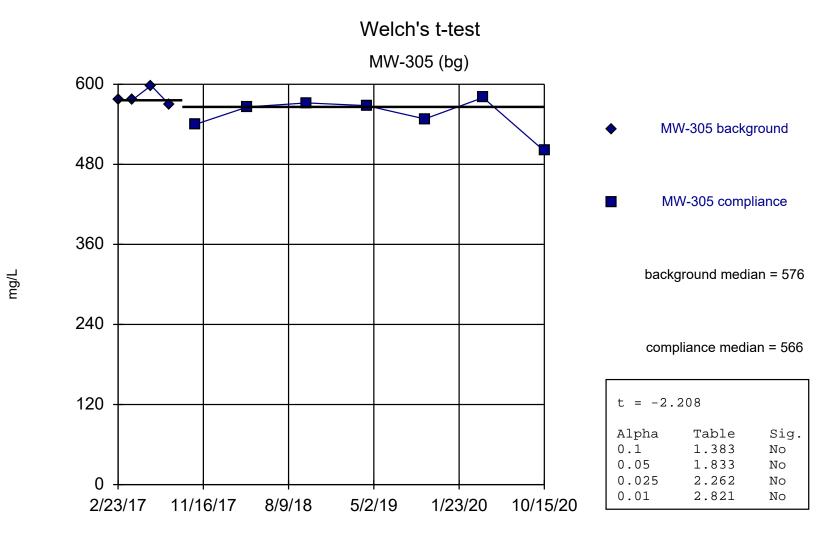
Constituent: Sulfate Analysis Run 1/3/2021 5:36 PM View: I-43 LF Detection Monitoring I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

02/04/2021 - Classification: Internal - ECRM7850510



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

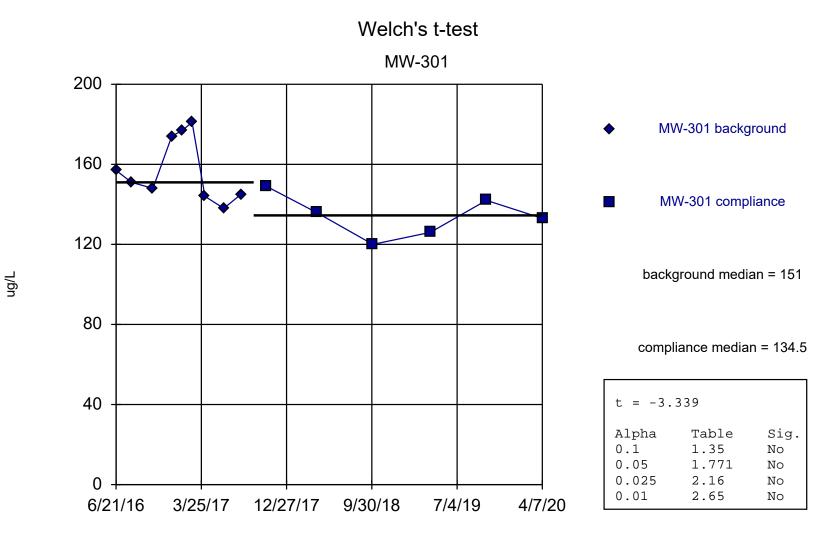


Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8119, critical = 0.748.

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

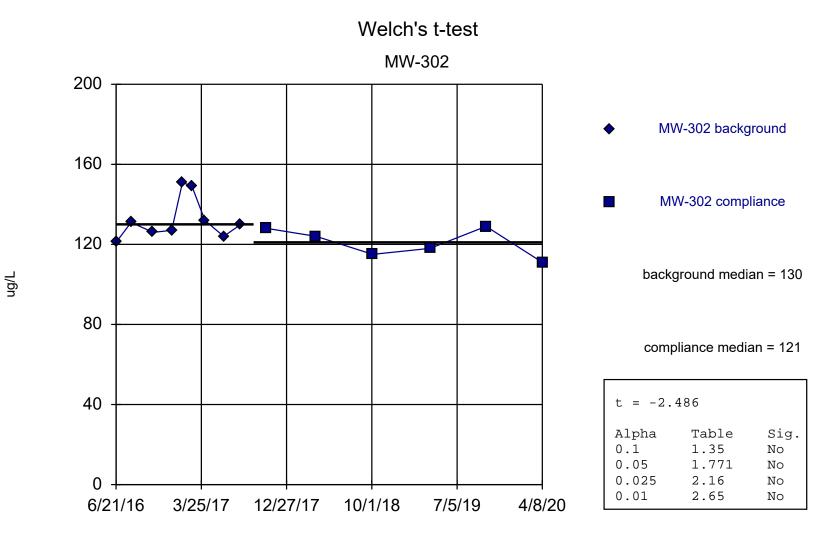
Welch's t-test/Mann-Whitney

	I-43 Ash	Disposal	Facility	Client: SC	S Enginee	rs Data:	I43_2020_Oc	ct_All	Printed 1/3/2021, 5:35 PM	
Constituent	<u>Well</u>	<u>Calc.</u>	<u>0.1</u>	<u>0.05</u>	<u>0.025</u>	<u>0.01</u>	<u>Alpha</u>	<u>Sig.</u>	<u>Bg. Wells</u>	<u>Method</u>
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



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

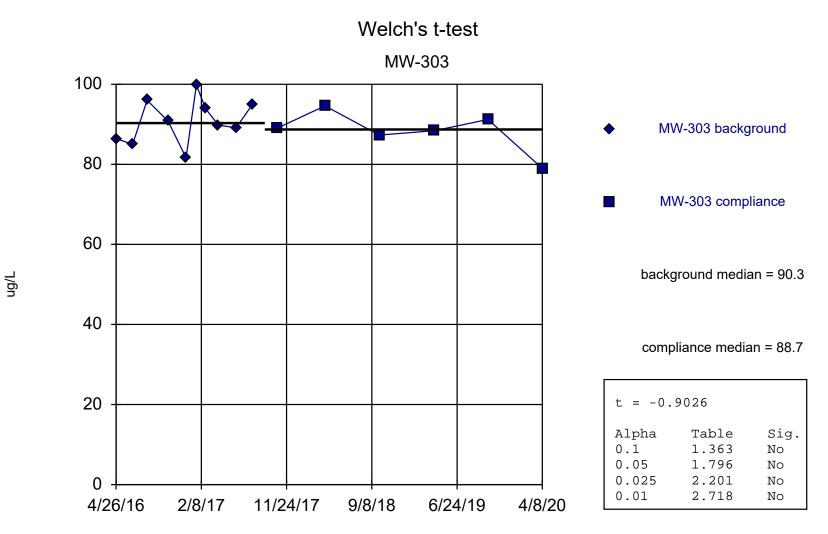
Constituent: Boron Analysis Run 1/3/2021 5:34 PM View: I-43 LF Detection Monitoring I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All



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

02/04/2021 - Classification: Internal - ECRM7850510



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

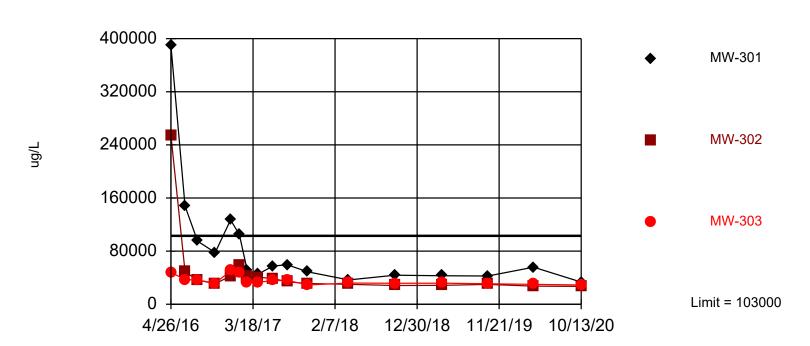
Interwell Prediction Limit Analysis

Interwell Prediction Limit

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

					,		0	—				,			
<u>Constituent</u>	<u>Well</u>	Upper Lim.	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>I Bg Wells</u>	<u>Bg Mean</u>	Std. Dev.	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	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

Calcium



Interwell Non-parametric

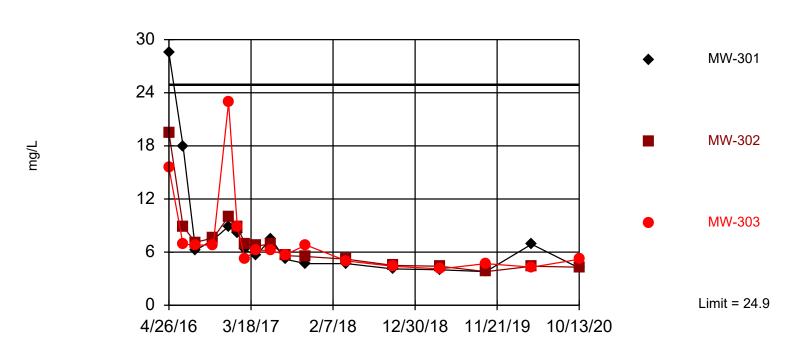
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 28 background values. Annual per-constituent alpha = 0.01364. Individual comparison alpha = 0.002286 (1 of 2). Comparing 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

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

	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



Interwell Non-parametric

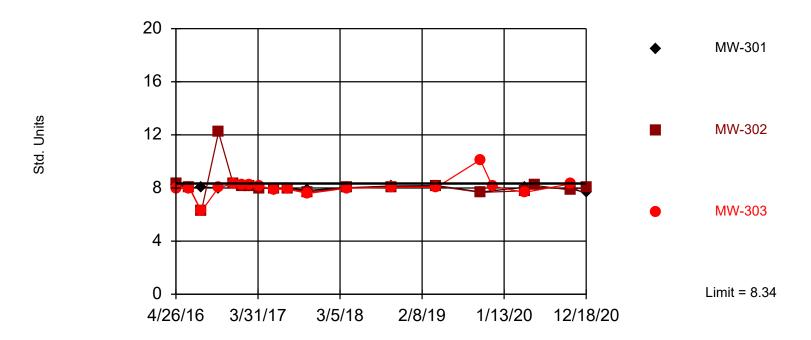
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 28 background values. Annual per-constituent alpha = 0.01364. Individual comparison alpha = 0.002286 (1 of 2). Comparing 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

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

	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 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

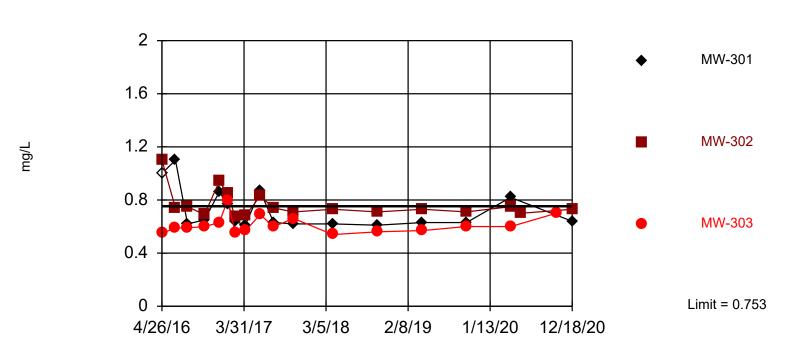
Constituent: Field pH (Std. Units) Analysis Run 12/28/2020 11:43 AM View: I-43 LF Detection Monitoring

	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			

Sanitas[™] v.9.6.27 Software licensed to SCS Engineers. UG Hollow symbols indicate censored values.

Within Limit

Fluoride



Interwell Parametric

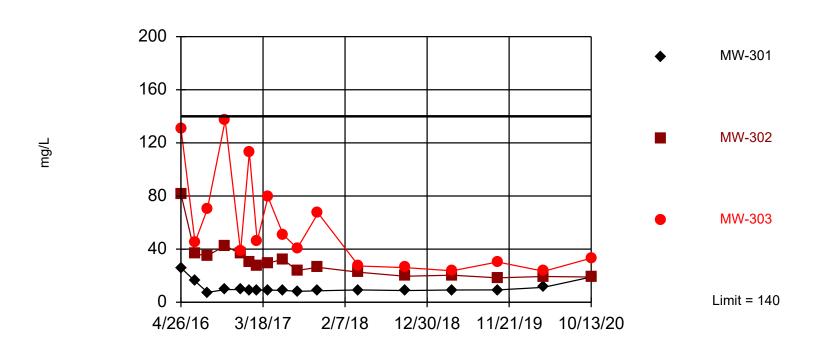
Background Data Summary: Mean=0.5854, Std. Dev.=0.09236, n=28. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9156, critical = 0.896. Kappa = 1.81 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual 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

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

	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)			

Sulfate



Interwell Non-parametric

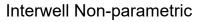
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 28 background values. Annual per-constituent alpha = 0.01364. Individual comparison alpha = 0.002286 (1 of 2). Comparing 3 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

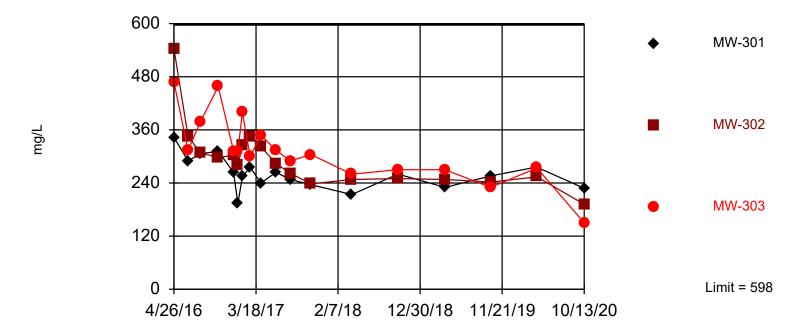
Prediction Limit Analysis Run 12/28/2020 11:36 AM View: I-43 LF Detection Monitoring I-43 Ash Disposal Facility Client: SCS Engineers Data: I43_2020_Oct_All

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

	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





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

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

	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

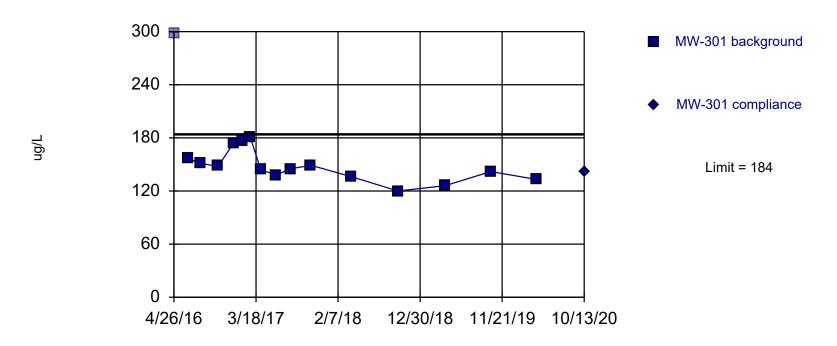
Intrawell Prediction Limit Analysis

Intrawell Prediction Limit

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

<u>Constituent</u>	<u>Well</u>	Upper Lim.	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	Bg I	<u>N Bg Wells</u>	<u>Bg Mean</u>	Std. Dev.	<u>%NDs</u>	<u>ND Adj.</u>	Transform	<u>Alpha</u>	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

Boron Intrawell Parametric

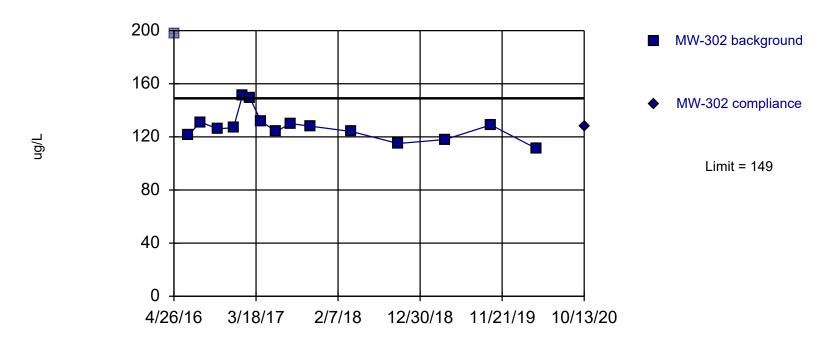


Background Data Summary: Mean=148.1, Std. Dev.=17.92, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9399, critical = 0.835. Kappa = 2.006 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

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

Constituent: Boron (ug/L) Analysis Run 12/23/2020 6:01 PM View: I-43 LF Detection Monitoring

Boron Intrawell Parametric



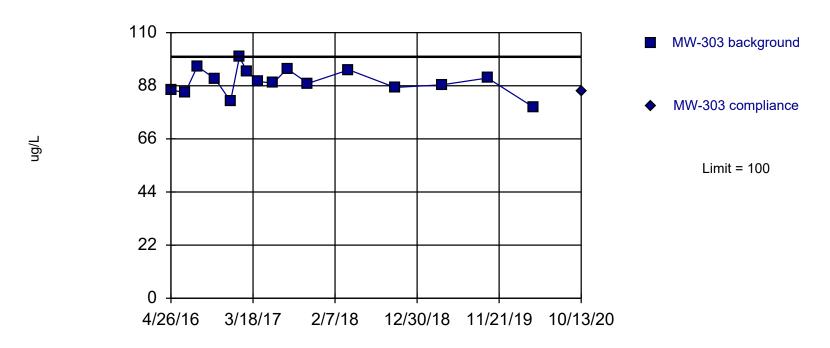
Background Data Summary: Mean=127.7, Std. Dev.=10.83, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9045, critical = 0.835. Kappa = 2.006 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

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

Constituent: Boron (ug/L) Analysis Run 12/23/2020 6:01 PM View: I-43 LF Detection Monitoring

Ν	WW-302	MW-302
4/26/2016	198 (R)	
6/21/2016 1	121	
8/9/2016 1	131	
10/19/2016 1	126	
12/19/2016 1	127	
1/23/2017 1	151	
2/23/2017 1	149	
4/6/2017 1	132	
6/6/2017 1	124	
8/1/2017 1	130	
10/23/2017 1	128	
4/3/2018 1	124	
10/4/2018 1	115	
4/9/2019 1	118	
10/8/2019 1	129	
4/8/2020 1	111	
10/13/2020		128

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