2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CCR LANDFILL SIBLEY GENERATING STATION SIBLEY, MISSOURI

Presented To: Evergy Missouri West, Inc.



27213169.20 | January 2021 Revision 1, April 2021 Revision 2, December 16, 2022

8575 W 110th Street, Suite 100 Overland Park, Kansas 66210 913-681-0030

CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify that the 2020 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Sibley Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).



John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify that the 2020 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Sibley Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).

i



Douglas L. Doerr, P.E.

SCS Engineers

Revision Number	Revision Date	Revision Sections	Summary of Revisions
0	January 2021	NA	Original
1	April 7, 2021	Table of Contents Appendix A	Addition of Potentiometric Surface Maps to Appendix A
2	December 16, 2022	Addendum 1	Added Addendum 1

Table of Contents

Sect	ion		Pag	ge
CERT	IFICAT	IONS		i
1	INTRO	ODUCTI	ON	1
	1.1	§ 257	.90(e)(6) Summary	1
		1.1.1	§ 257.90(e)(6)(i) Initial Monitoring Program	1
		1.1.2	§ 257.90(e)(6)(ii) Final Monitoring Program	1
		1.1.3	§ 257.90(e)(6)(iii) Statistically Significant Increases	1
		1.1.4	§ 257.90(e)(6)(iv) Statistically Significant Levels	2
		1.1.5	§ 257.90(e)(6)(v) Selection of Remedy	2
		1.1.6	§ 257.90(e)(6)(vi) Remedial Activities	2
2	§ 257	7.90(e)	ANNUAL REPORT REQUIREMENTS	3
	2.1	§ 257.	90(e)(1) Site Map	3
	2.2	-	90(e)(2) Monitoring System Changes	
	2.3	§ 257.	90(e)(3) Summary of Sampling Events	3
	2.4	§ 257.	90(e)(4) Monitoring Transition Narrative	4
	2.5	§ 257.	90(e)(5) Other Requirements	
		2.5.1	§ 257.90(e) Program Status	
		2.5.2	§ 257.94(d)(3) Demonstration for Alternative Detection Monitoring Frequency.	
		2.5.3	§ 257.94(e)(2) Detection Monitoring Alternate Source Demonstration	5
		2.5.4	§ 257.95(c)(3) Demonstration for Alternative Assessment Monitoring Frequence	-
		2.5.5	§ 257.95(d)(3) Assessment Monitoring Concentrations and Groundwater Protection Standards	-
		2.5.6	§ 257.95(g)(3)(ii) Assessment Monitoring Alternate Source Demonstration	6
		2.5.7	§ 257.96(a) Demonstration for Additional Time for Assessment of Corrective Measures	6
	2.6	§ 257	.90(e)(6) OVERVIEW SUMMARY	7
3	GENE	ERAL CO	OMMENTS	7

Appendices

- Appendix A Figures
 - Figure 1: Site Map
 - Figure 2: Potentiometric Surface Map (May 2020)
 - Figure 3: Potentiometric Surface Map (November 2020)

Appendix B Tables

Table 1: Appendix III with Supplemental Appendix IV Detection Monitoring Results Table 2: Detection Monitoring Field Measurements

- Appendix C Alternative Source Demonstrations
 - C.1 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, CCR Landfill, Sibley Generating Station (June 2020).
 - C.2 CCR Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, CCR Landfill, Sibley Generating Station (December 2020).

Addendum 1 2020 Groundwater Monitoring and Corrective Action Report Addendum 1

1 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) Final Rule" (Rule) published by the United States Environmental Protection Agency (USEPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (USEPA, 2015), and subsequent revisions. Specifically, this report was prepared for Evergy Missouri West, Inc. (Evergy) 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 Landfill at the Sibley Generating Station.

1.1 § 257.90(e)(6) SUMMARY

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. At a minimum, the summary must specify all of the following:

1.1.1 § 257.90(e)(6)(i) Initial Monitoring Program

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;

At the start of the current annual reporting period, (January 1, 2020), the CCR Landfill was operating under a detection monitoring program in compliance with § 257.94.

1.1.2 § 257.90(e)(6)(ii) Final Monitoring Program

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;

At the end of the current annual reporting period, (December 31, 2020), the CCR Landfill was operating under a detection monitoring program in compliance with § 257.94.

1.1.3 § 257.90(e)(6)(iii) Statistically Significant Increases

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

Monitoring Event	Monitoring Well	Constituent	ASD
Fall 2019	MW-512	Sulfate	Successful
Spring 2020	MW-505	Calcium	Successful
Spring 2020	MW-512	Chloride	Successful
Spring 2020	MW-512	Total Dissolved Solids	Successful
Spring 2020	MW-506	Sulfate	Successful

Monitoring Event	Monitoring Well	Constituent	ASD
Spring 2020	MW-512	Sulfate	Successful

(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.

Not applicable because an assessment monitoring program was not initiated.

1.1.4 § 257.90(e)(6)(iv) Statistically Significant Levels

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 \S 257.95(g) include all of the following:

(A) Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase;

Not applicable because there was no assessment monitoring conducted.

(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;

Not applicable because there was no assessment of corrective measures 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

Not applicable because there was no assessment of corrective measures initiated for the CCR Unit.

(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.

Not applicable because there was no assessment of corrective measures initiated for the CCR Unit.

1.1.5 § 257.90(e)(6)(v) Selection of Remedy

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 because corrective measures are not required.

1.1.6 § 257.90(e)(6)(vi) Remedial Activities

Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

Not applicable because corrective measures are not required.

2 § 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:

2.1 § 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 site map with an aerial image showing the CCR Landfill and all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR Landfill groundwater monitoring program is provided as **Figure 1** in **Appendix A**.

2.2 § 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 CCR groundwater monitoring program for the CCR Landfill in 2020.

2.3 § 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;

Only detection monitoring was required to be conducted during the reporting period (2020). Samples collected in 2020 were collected and analyzed for Appendix III detection monitoring constituents. Additionally, Appendix IV constituents were analyzed with the spring event for potential future updating of background data in conformance with EPA Unified Guidance and industry standards. Results of the sampling events are provided in **Appendix B**, **Table 1** (Appendix III with Supplemental Appendix IV Detection Monitoring Results), and **Table 2** (Detection Monitoring Field Measurements). These tables include Fall 2019 semiannual detection monitoring data, verification sample data, and supplementary

Appendix IV sample data; and, the initial Fall 2020 semiannual detection monitoring data. The dates of sample collection and the monitoring program requiring the sample are also provided in these tables.

2.4 § 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); and

There was no transition between monitoring programs in 2020. Only detection monitoring was conducted in 2020.

2.5 § 257.90(e)(5) OTHER REQUIREMENTS

Other information required to be included in the annual report as specified in § 257.90 through § 257.98.

A summary of potentially required information and the corresponding section of the Rule is provided in the following sections. In addition, the information, if applicable, is provided.

2.5.1 § 257.90(e) Program Status

Status of Groundwater Monitoring and Corrective Action Program.

The groundwater monitoring and corrective action program is in detection monitoring.

Summary of Key Actions Completed.

- a. completion of the Fall 2019 verification sampling and analyses per the certified statistical method,
- b. completion of the statistical evaluation of the Fall 2019 semiannual detection monitoring sampling and analysis event per the certified statistical method,
- c. completion of the 2019 Annual Groundwater Monitoring and Corrective Action Report,
- d. completion of a successful alternative source demonstration for the Fall 2019 semiannual detection monitoring sampling and analysis event,
- e. completion of the Spring 2020 semiannual detection monitoring sampling and analysis event with subsequent verification sampling per the certified statistical method, and supplemental Appendix IV sample analysis,
- f. completion of the statistical evaluation of the Spring 2020 semiannual detection monitoring sampling and analysis event per the certified statistical method,
- g. completion of a successful alternative source demonstration for the Spring 2020 semiannual detection monitoring sampling and analysis event, and
- h. initiation of the Fall 2020 semiannual detection monitoring sampling and analysis event.

Description of Any Problems Encountered.

No noteworthy problems were encountered.

Discussion of Actions to Resolve the Problems.

Not applicable because no noteworthy problems were encountered.

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

Completion of verification sampling and data analysis, and the statistical evaluation of Fall 2020 detection monitoring sampling and analysis event. Semiannual Spring and Fall 2021 groundwater sampling and analysis. Completion of the statistical evaluation of the Spring 2021 detection monitoring sampling and analysis event, and, if required, alternative source demonstration(s).

2.5.2 § 257.94(d)(3) Demonstration for Alternative Detection Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by $\S 257.90(e)$.

Not applicable because no alternative monitoring frequency for detection monitoring and certification was pursued.

2.5.3 § 257.94(e)(2) Detection Monitoring Alternate Source Demonstration

Demonstration that a source other than the CCR unit caused the statistically significant increase (SSI) over background levels for a constituent or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. In addition, certification of the demonstration is to be included in the annual report.

The following demonstration reports are included in **Appendix C**:

- C.1 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, CCR Landfill, Sibley Generating Station (June 2020).
- C.2 CCR Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, CCR Landfill, Sibley Generating Station (December 2020).

2.5.4 § 257.95(c)(3) Demonstration for Alternative Assessment Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority

stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable because there was no assessment monitoring conducted.

2.5.5 § 257.95(d)(3) Assessment Monitoring Concentrations and Groundwater Protection Standards

Include the concentrations of Appendix III and detected Appendix IV constituents from the assessment monitoring, the established background concentrations, and the established groundwater protection standards.

Not applicable because there was no assessment monitoring conducted.

2.5.6 § 257.95(g)(3)(ii) Assessment Monitoring Alternate Source Demonstration

Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in appendices III and IV to this part are at or below background as specified in paragraph (e) of this section. 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 or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Not applicable because there was no assessment monitoring conducted.

2.5.7 § 257.96(a) Demonstration for Additional Time for Assessment of Corrective Measures

Within 90 days of finding that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. 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 measures 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 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 or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Not applicable because there was no assessment monitoring conducted.

2.6 § 257.90(e)(6) OVERVIEW SUMMARY

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.

§ 257.90(e)(6) is addressed in Section 1.1 of this report.

3 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. The information contained in this report is a reflection of the conditions encountered at the Sibley Generating Station at the time of fieldwork. This report includes a review and compilation of the required information and does not reflect any variations of the subsurface, which may occur between sampling locations. Actual subsurface conditions may vary and the extent of such variations may not become evident without further investigation.

Conclusions drawn by others from the result of this work should recognize the limitation of the methods used. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Missouri West, Inc., for specific application to the Sibley Generating Station CCR Landfill. No warranties, express or implied, are intended or made.

APPENDIX A

FIGURES

Figure 1: Site Map

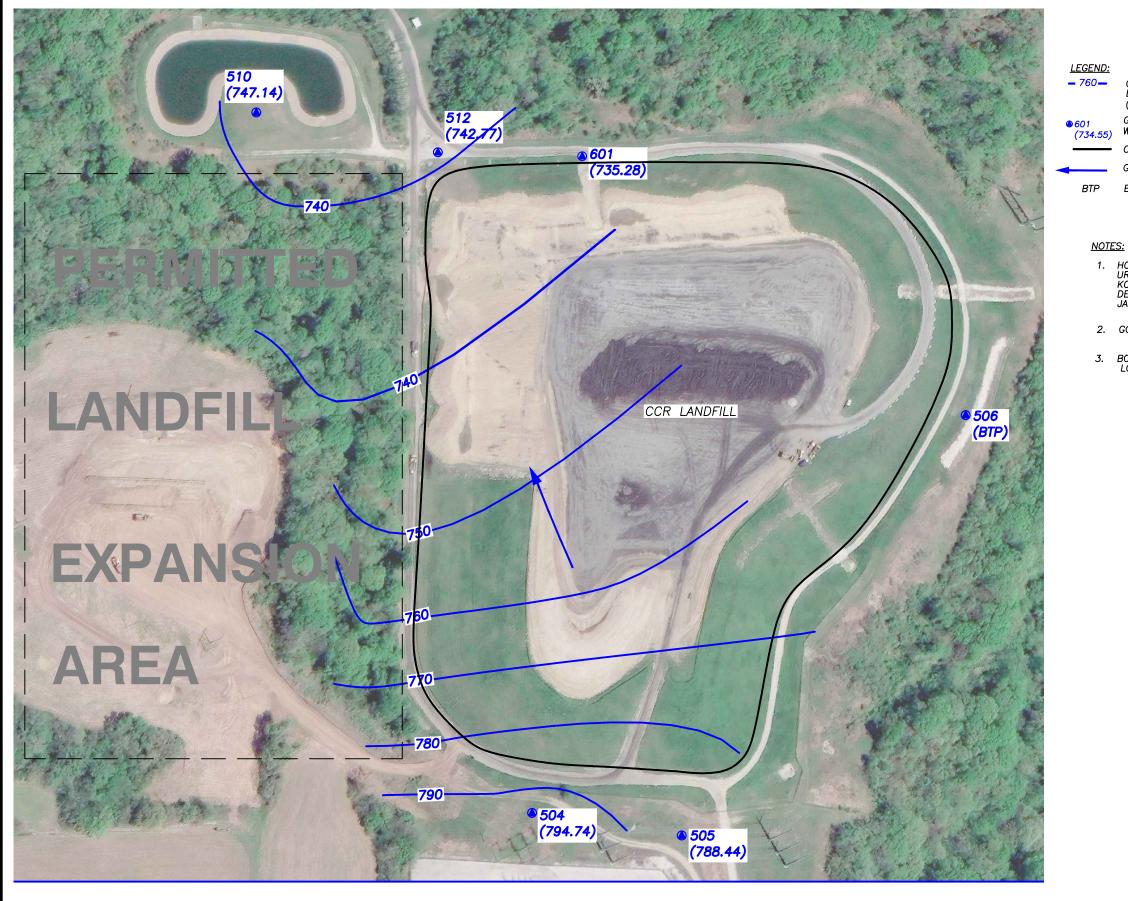
Figure 2: Potentiometric Surface Map (May 2020)

Figure 3: Potentiometric Surface Map (November 2020)



200 SCALE

LEGEND: CCR GROUNDWATER MONITORING SYSTEM WELLS				
UTILITY WASTE LANDFILL UNIT BOUNDARY	DATE			
PERMITTED LANDFILL EXPANSION AERA	REV.			
NOTES: 1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010 2. GOOGLE EARTH AERIAL IMAGE. APRIL 2020. 3. BOUNDARY AND MONITORING WELL LOCATIONS SHOWN ARE APPROXIMATE.	SHEET TITLE SITE MAP	CCR LANDFILL	CCH GROUNDWALER MONITORING SYSTEM	2020 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
	CLIENT	EVERGY MISSOURI WEST, INC.	SIBLEY GENERATING STATION	SIBLEY, MISSOURI
0 200 400	CADD DATE) FILE	CI 8 Overland Park, Kansas 66210 PH. (913) 681-0030 FAX. (913) 681-0012	C PRAL NO. 27213167.20 PWNL BY ALR Q/A RVW BY 27213167.20 PWNL BY ALR Q/A RVW BY DSNL BY: ALR OWK BY RROL WAR
E FEET	FIGU			<u>∠ı</u>



200 SCALE

GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT) 601 GROUNDWATER MONITORING SYSTEM (734.55) WELLS (GROUNDWATER ELEVATION) CCR LANDFILL UNIT BOUNDARY

GROUNDWATER FLOW DIRECTION

BELOW TOP OF PUMP

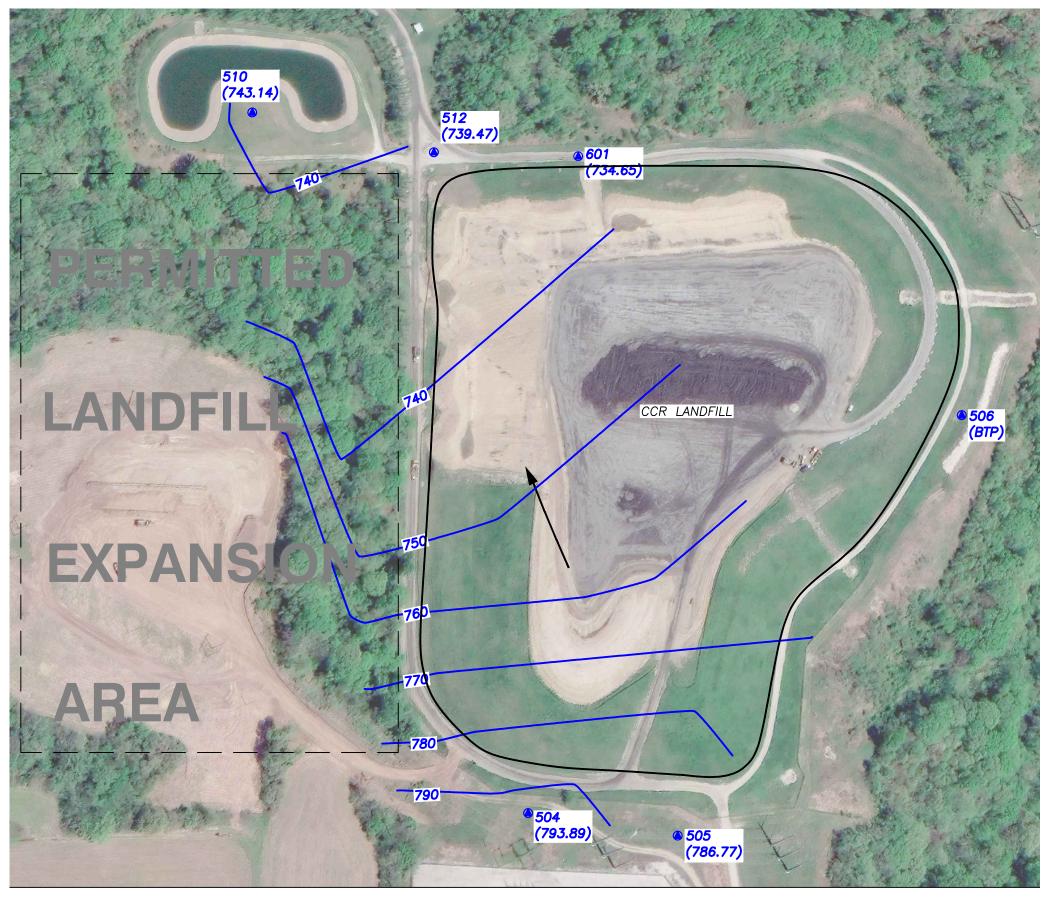
HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010

2. GOOGLE EARTH AERIAL IMAGE. APRIL 2020.

3. BOUNDARY AND MONITORING WELL WELL LOCATIONS SHOWN ARE APPROXIMATE.

ō					
SCS ENGINEERS					
CADD FI 20 - MAY_9W	400	200	Ц	0	
DATE:					
FIGURE	FEET				

REV. DATE						1
	POTENTIOMETRIC SURFACE MAP (MAY 2020)	CCR LANDFILL	DBO.FCT TITE			1
CLENT			SIBLEY GENERATING STATION	SIBLEY, MISSOURI		
			PH. (913) 681-0030 FAX. (913) 681-0012	PROLING DWN BY DVA PVW BY	MBJ	DSN. BT: TGW CHK. BT: JRR PROJ. MCK
CADD 20 - MAY DATE: FIGUR		- <u>/</u> (3/	21		



200 SCALE

LEGEND: - 760- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT) 6 601 GROUNDWATER MONITORING SYSTEM (738.07) WELLS (GROUNDWATER ELEVATION) CCR LANDFILL UNIT BOUNDARY	REV. DATE		
 GROUNDWATER FLOW DIRECTION BTP BELOW TOP OF PUMP NOTES: HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010 GOOGLE EARTH AERIAL IMAGE. APRIL 2020. BOUNDARY AND MONITORING WELL WELL LOCATIONS SHOWN ARE APPROXIMATE. 	SHEET TITE POTENTIOMETRIC SURFACE MAP	(NOVEMBER 2020) CCR LANDFILL	PROJECT TITLE SIBLEY GROUNDWATER 2020
	CLIENT	EVERGY MISSOURI WEST, INC.	SIBLEY GENERALING STATION SIBLEY, MISSOURI
0 200 400 .E FEET	20 - NO DATE) FILE: VEMBER_OW VI	Disp Disp Disp Disp Disp Disp Disp Disp

APPENDIX B

TABLES

Table 1: Appendix III with Supplemental Appendix IV Detection Monitoring Results

Table 2: Detection Monitoring Field Measurements

Table 1 CCR Landfill Appendix III with Supplemental Appendix IV Detection Monitoring Results Evergy Sibley Generating Station

				Apper	ndix III Consti	tuents									App	endix IV Cons	tituents						
Well Number	Sample Date	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	рН (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Thallium (mg/L)	Radium Combined (pCi/L)
MW-504	5/18/2020	<0.200	37.2	<1.00	0.182	6.55	34.8	205	< 0.00400	<0.00200	0.126	<0.00200	<0.00100	< 0.0100	<0.0100	0.182	<0.00500	<0.0150	<0.000200	<0.00500	0.00356	<0.00200	0.469
MW-504	11/11/2020	<0.200	36.3	<1.00	0.172	6.85	33.1	201															
MW-505	5/18/2020	<0.200	30.5	1.06	0.202	6.26	16.3	179	<0.00400	<0.00200	0.105	<0.00200	<0.00100	<0.0100	<0.0100	0.202	<0.00500	<0.0150	< 0.000200	<0.00500	0.00276	<0.00200	0.27
MW-505	7/14/2020		*32.4			*6.79																	
MW-505	8/26/2020		*30.3			**6.96																	
MW-505	11/11/2020	<0.200	29.1	<1.00	0.18	6.75	19.3	175															
MW-506	5/18/2020	<0.200	92.7	7.11	0.308	6.76	80.0	444	<0.00400	<0.00200	0.221	<0.00200	<0.00100	<0.0180	<0.0180	0.308	<0.00500	<0.0150	<0.000200	<0.00500	0.0175	<0.00200	0.37
MW-506	7/14/2020					*7.16	*78.6																
MW-506	8/26/2020					**7.17	*79.6																
MW-506	11/11/2020	<0.200	93.4	7.28	0.303	7.25	87.0	451															
MW-510	5/18/2020	<0.200	119	3.30	0.293	6.95	12.3	474	<0.00400	<0.00200	0.369	<0.00200	<0.00100	<0.0100	<0.0100	0.293	<0.00500	<0.0150	<0.000200	<0.00500	0.00201	<0.00200	0.198
MW-510	11/11/2020	<0.200	120	3.26	0.290	7.18	13.7	475															
MW-512	1/13/2020					**7.13	*57.5																
MW-512	2/3/2020					**6.93	*61.6																
MW-512	5/18/2020	<0.200	110	7.69	0.286	6.86	71.6	481	<0.00400	<0.00200	0.393	<0.00200	<0.00100	0.0141	<0.0100	0.286	<0.00500	<0.0150	< 0.000200	<0.00500	0.00736	<0.00200	1.52
MW-512	7/14/2020			*8.83		**6.94	*77.6	*501															
MW-512	8/26/2020			*8.79		**7.02	*80.1	*493															
MW-512	11/11/2020	<0.200	115	9.75	0.265	7.18	92.6	508															
MW-601	5/18/2020	<0.200	99.6	3.13	0.252	6.77	9.00	396	<0.00400	<0.00200	0.331	<0.00200	<0.00100	<0.0100	<0.0100	0.252	<0.00500	<0.0150	<0.000200	<0.00500	0.00631	<0.00200	3.36
MW-601	11/11/2020	<0.200	100	3.19	0.235	7.12	9.39	397															

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data

at RCRA Facilities, Unified Guidance, March 2009.

**Extra Sample for Quality Control Validation or per Standard Sampling Procedure

mg/L - miligrams per liter

pCi/L - picocuries per liter

S.U. - Standard Units

--- Not Sampled

Table 2CCR LandfillDetection Monitoring Field MeasurementsEvergy Sibley Generating Station

Well Number	Sample Date	рН (S.U.)	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Water Level (ft btoc)	Groundwater Elevation (ft NGVD)
MW-504	5/18/2020	6.55	323	14.24	0.0	215	0.00	21.58	794.74
MW-504	11/11/2020	6.85	239	14.36	0.0	170	1.03	22.43	793.89
MW-505	5/18/2020	6.26	276	14.29	0.0	237	0.00	26.53	788.44
MW-505	7/14/2020	*6.79	244	16.61	0.0	93	6.62	27.12	787.85
MW-505	8/26/2020	**6.96	256	27.63	0.0	151	7.72	26.40	788.57
MW-505	11/11/2020	6.75	253	14.70	0.0	178	1.95	28.20	786.77
MW-506	5/18/2020	6.76	715	14.59	0.0	214	0.00	BTP	NA
MW-506	7/14/2020	*7.16	713	19.49	0.0	82	5.82	BTP	NA
MW-506	8/26/2020	**7.17	671	31.59	0.0	97	4.03	BTP	NA
MW-506	11/11/2020	7.25	748	11.22	10.6	-34	5.35	BTP	NA
MW-510	5/18/2020	6.95	879	14.45	4.5	6	0.00	38.65	747.14
MW-510	11/11/2020	7.18	810	14.25	0.0	157	2.39	42.65	743.14
MW-512	1/13/2020	**7.13	782	12.54	7.1	154	2.50	28.99	741.14
MW-512	2/3/2020	**6.93	823	15.19	0.0	214	3.91	26.86	743.27
MW-512	5/18/2020	6.86	789	14.97	0.0	145	0.00	27.36	742.77
MW-512	7/14/2020	**6.94	766	17.50	0.0	242	0.90	28.89	741.24
MW-512	8/26/2020	**7.02	752	23.61	0.0	79	3.16	28.59	741.54
MW-512	11/11/2020	7.18	773	15.20	0.0	130	2.16	30.66	739.47
MW-601	5/18/2020	6.77	695	14.53	0.0	148	0.00	45.62	735.28
MW-601	11/11/2020	7.12	661	14.43	0.0	66	1.28	46.25	734.65

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.

**Extra Sample for Quality Control Validation or per Standard Sampling Procedure

S.U. - Standard Units

μS - microsiemens

°C - Degrees Celsius

ft btoc - Feet Below Top of Casing

ft NGVD - National Geodetic Vertical Datum (NAVD 88)

NTU - Nephelometric Turbidity Unit

BTP - Below Top of Pump

APPENDIX C

ALTERNATIVE SOURCE DEMONSTRATIONS

- C.1 Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, CCR Landfill, Sibley Generating Station (June 2020)
- C.2 Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, CCR Landfill, Sibley Generating Station (December 2020)

C.1 Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, CCR Landfill, Sibley Generating Station (June 2020)

CCR GROUNDWATER MONITORING ALTERNATIVE SOURCE DEMONSTRATION REPORT NOVEMBER 2019 GROUNDWATER MONITORING EVENT

CCR LANDFILL SIBLEY GENERATING STATION SIBLEY, MISSOURI

Presented To:

Evergy Missouri West, Inc.

Presented By:

SCS ENGINEERS

8575 West 110th Street, Suite 100

Overland Park, Kansas 66210

June 2020

File No. 27213169.20

CERTIFICATIONS

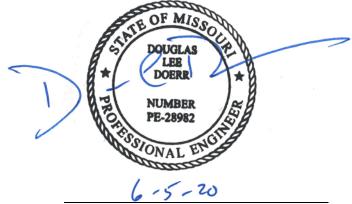
I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Sibley Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted hydrogeological practices and the local standard of care.



John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Sibley Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted engineering practices and the local standard of care.



Douglas L. Doerr, P.E.

SCS Engineers

Table of Contents

Section

Page

CER	TIFICA	TIONS	. i
1	Regu	Ilatory Framework	1
2	Stati	stical Results	1
3	Alte	rnative Source Demonstration	2
	3.1	Box and Whiskers Plots	2
	3.2	Piper Diagram Plots	2
	3.3	Time Series Plots	3
	3.4	Trend Analysis	3
4	Cond	lusion	4
5	Gen	eral Comments	4

Appendices

Appendix A	Figure 1
Appendix B	Box and Whiskers Plots
Appendix C	Piper Diagram Plots and Analytical Results
Appendix D	Time Series Plots
Appendix E	Trend Analysis

1 REGULATORY FRAMEWORK

Certain owners or operators of Coal Combustion Residuals (CCR) units are required to complete groundwater monitoring activities to evaluate whether a release from the unit has occurred. Included in the activities is the completion of a statistical analysis of the groundwater quality data as prescribed in § 257.93(h) of the CCR Final Rule. If the initial analysis indicates a statistically significant increase (SSI) over background levels, the owner or operator may perform an alternative source demonstration (ASD). In accordance with § 257.94(e)(2), the owner or operator of the CCR unit may demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a SSI over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under § 257.94. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. 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.

2 STATISTICAL RESULTS

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Sibley Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on November 6, 2019. Review and validation of the results from the November 2019 Detection Monitoring Event was completed on December 16, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 13, 2020 and February 3, 2020.

The completed statistical evaluation identified one Appendix III constituent above the prediction limit established for monitoring well MW-512.

Constituent/Monitoring Well	*UPL	Observation November 6, 2019	1st Verification January 13, 2020	2nd Verification February 3, 2020	
Sulfate					
MW-512	44.8	45.0	57.5	61.6	

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for sulfate in monitoring well MW-512.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration (ASD) is a means to provide supporting lines of evidence that something other than a release from a regulated CCR unit caused an SSI. For the above-identified SSI for the CCR Landfill at the Sibley Generating Station, there are multiple lines of supporting evidence to indicate the above SSI was not caused by a release from the CCR Landfill. Select multiple lines of supporting evidence are described as follows.

3.1 BOX AND WHISKERS PLOTS

A commonly accepted method to demonstrate and visualize the distribution of data in a given data set is to construct box and whiskers plots. The basic box plotted graphically locates the median, 25th and 75th percentiles of the data set; the "whiskers" extend to the minimum and maximum values of the data set. The range between the ends of a box plot represents the Interquartile Range, which can be used as an estimate of spread or variability. The mean is denoted by a "+".

When comparing multiple wells or well groups, box plots for each well can be lined up on the same axis to roughly compare the variability in each well. This may be used as an exploratory screening for the test of homogeneity of variance across multiple wells.

The box and whiskers plot for sulfate in monitoring well MW-512 was compared to box and whisker plots for sulfate in several upgradient and side-gradient non-CCR monitoring system wells installed for future state-permitted landfill expansion purposes. Sulfate comparisons indicate the concentrations in MW-512 are well within or below expected concentration levels for non-impacted groundwater in the vicinity of the CCR Landfill.

Figure 1 in **Appendix A** shows these upgradient and non-CCR monitoring system wells and their relationships to groundwater flow near and beneath the CCR Landfill. Because the non-CCR monitoring system wells are located in a nearby area that has not been impacted by the landfill, and exhibit variability that includes sulfate concentrations similar to those seen at MW-512, the observed concentrations are within the range of expected natural spatial variation within and between wells. This demonstrates that a source other than the CCR Landfill caused the SSI over the background level, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whisker plots for sulfate are provided in **Appendix B**.

3.2 PIPER DIAGRAM PLOTS

Piper diagrams are a form of tri-linear diagram, and a widely accepted method to provide a visual representation of the ion concentration of groundwater. Piper diagrams portray water compositions and facilitate the interpretation and presentation of chemical analyses. They may be used to visually compare the chemical composition of water quality across wells, and aid in determining whether the waters are similar or dis-similar, and can over time indicate whether the waters are mixing.

A piper diagram has two triangular plots on the right and left side of a 4-sided center field. The three major cations are plotted in the left triangle and anions in the right. Each of the three cation/anion variables, in milliequivalents, is divided by the sum of the three values, to produce a percent of total cation/anions. These percentages determine the location of the associated symbol. The data points in the center field

are located by extending the points in the lower triangles to the point of intersection. In order for a piper diagram to be produced, the selected data file must contain the following constituents: Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg), Chloride (Cl), Sulfate (SO4), Carbonate (CO3), and Bicarbonate (HCO3).

A piper diagram generated for upgradient well MW-504, downgradient MW-512, and landfill leachate is provided in **Appendix C** along with analytical results and indicates the groundwater from these two wells have similar geochemical characteristics and do not exhibit the same geochemical characteristics as the leachate. The groundwater and the leachate plot in different hydrochemical facies indicating there is no mixing of the two types of water (groundwater and leachate) and that both upgradient and downgradient groundwater characteristics are different from the leachate. This demonstrates that a source other than the CCR Landfill caused the SSI over the background level for sulfate, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.3 TIME SERIES PLOTS

Time series plots provide a graphical method to view changes in data at a particular well (monitoring point) or wells over time. Time series plots display the variability in concentration levels over time and can be used to indicate possible outliers or data errors (i.e. "spikes"). More than one well can be compared on the same plot to look for differences between wells. Non-detect data is plotted as censored data at one-half of the laboratory reporting limit. Time series plots can also be used to examine the data for trends.

The times series plot for sulfate in monitoring well MW-512 was compared to time series plots for sulfate in several upgradient and side-gradient non-CCR monitoring system wells installed for future state-permitted landfill expansion purposes. The sulfate concentrations in both upgradient well MW-504 and downgradient well MW-512 exhibit similar trends, are well within expected concentration levels for non-impacted groundwater in the vicinity of the CCR Landfill, and are even below observed concentrations in side-gradient non-CCR monitoring system well MW-516. This indicates there are natural fluctuations in concentration levels for many of the wells in the vicinity of the CCR Landfill.

These time series plots demonstrate that a source other than the CCR Landfill caused the SSI over the background level for sulfate or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Time series plots for sulfate are provided in **Appendix D**.

3.4 TREND ANALYSIS

Trend analysis was performed to evaluate for statistically significant trends utilizing Sen's Slope/Mann-Kendall Statistical Analysis. Sen's Slope/Mann-Kendall statistical analysis is used to determine if the data exhibits an SSI or statistically significant decreasing (SSD) trend. A trend is the general increase or decrease in observed values of a variable over time. A trend analysis can be used to determine the significance of an apparent trend and to estimate the magnitude of that trend. The Mann-Kendall test is nonparametric, meaning that it does not depend on an assumption of a particular underlying distribution. The test uses only the relative magnitude of data rather than actual values. Therefore, missing values are allowed, and values that are recorded as non-detects by the laboratory can still be used in the statistical analysis by assigning values equal to half their detection limits. Sen's Slope is a simple nonparametric

procedure developed to estimate the true slope. The advantage of this method over linear regression is that it is not greatly affected by gross data errors or outliers, and can be computed when data are missing.

The Sen's Slope/Mann-Kendall Statistical Analysis was performed at the 98 percent confidence level utilizing the statistical program Sanitas[™]. Sulfate data from December 2015 through the most recent data for upgradient well MW-504 and downgradient well MW-512 were used for the trend analysis. The trend analysis indicates the both upgradient well MW-504 and downgradient well MW-512 have increasing trends with similar slopes. The upward trend for upgradient well MW-504 is 6.083 mg/L/year and the upward trend for downgradient well MW-512 is 6.63 mg/L/year. This indicates that sulfate levels in both upgradient and downgradient wells are increasing at similar rates. Since the upgradient well is increasing due to natural conditions not due to the unit, it is also likely the downgradient well is increasing due to natural conditions not due to the unit. These trend analyses demonstrate that a source other than the CCR Landfill caused the SSI over the background level for sulfate or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Trend analyses for sulfate are provided in **Appendix E**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the CCR Landfill caused the SSI over the background level, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the CCR Landfill may continue with the detection monitoring program under § 257.94.

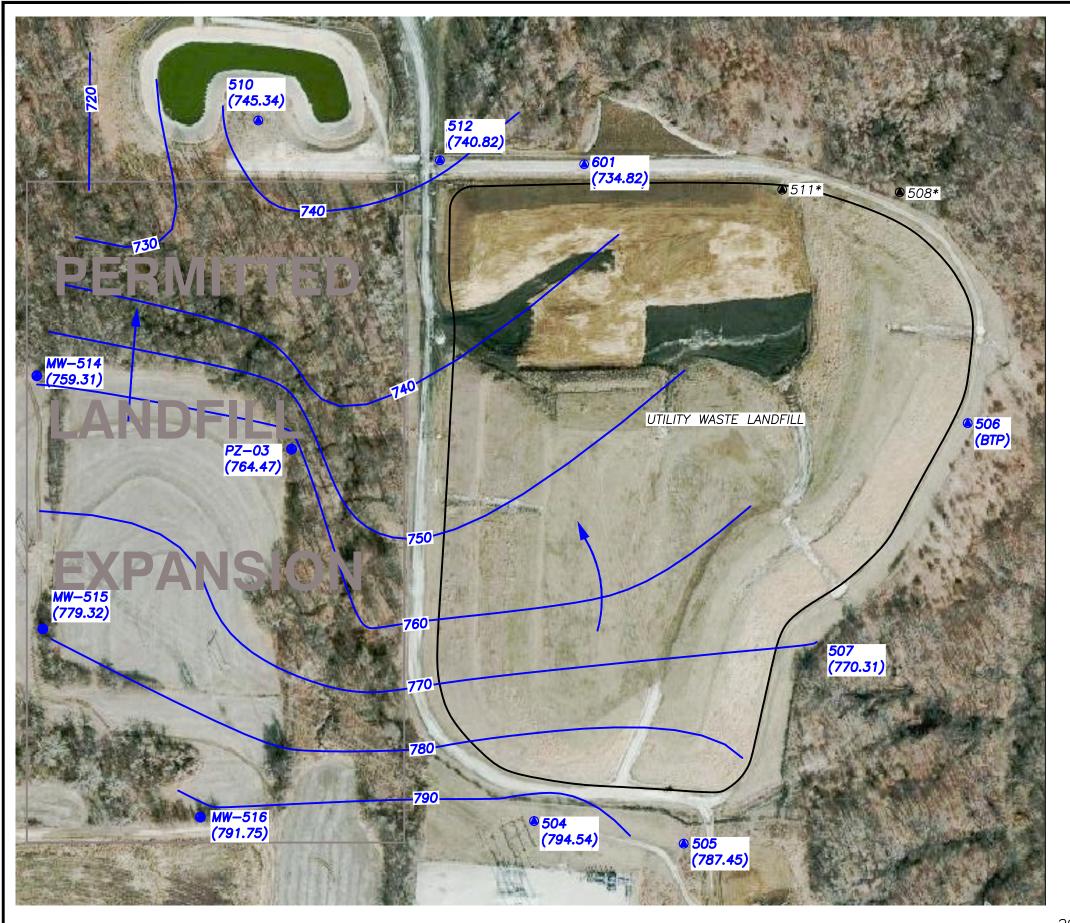
5 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Missouri West, Inc. for specific application to the Sibley Generating Station. No warranties, express or implied, are intended or made.

The signatures of the certifying registered geologist and professional engineer on this document represents that to the best of their knowledge, information, and belief in the exercise of their professional judgement in accordance with the standard of practice, it is their professional opinions that the aforementioned information is accurate as of the date of such signature. Any opinion or decisions by them are made on the basis of their experience, qualifications, and professional judgement and are not to be construed as warranties or guaranties. In addition, opinions relating to regulatory, environmental, geologic, geochemical and geotechnical conditions interpretations or other estimates are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

Appendix A

Figure 1



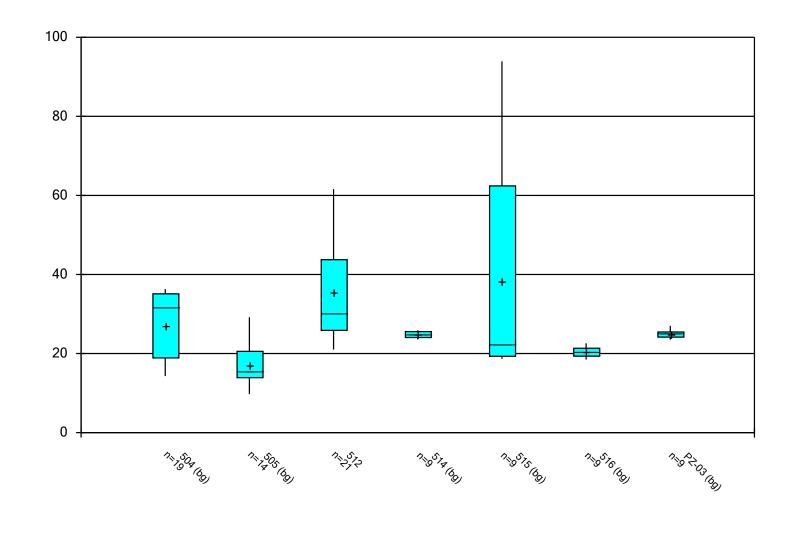
200

SCALE

Appendix B

Box and Whiskers Plots

mg/L



Box & Whiskers Plot

Constituent: Sulfate Analysis Run 3/13/2020 11:38 AM View: LF III Sibley Client: SCS Engineers Data: Sibley

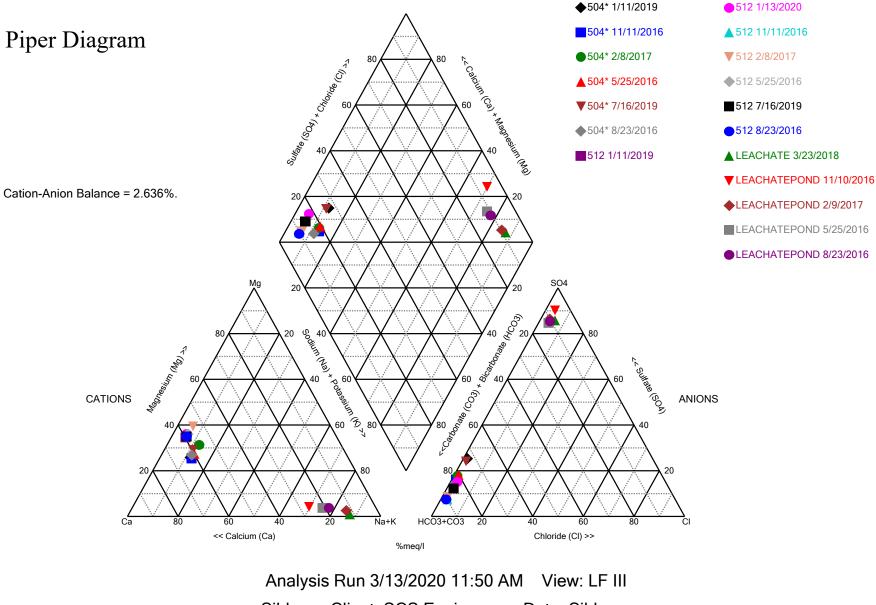
Box & Whiskers Plot

Sibley Client: SCS Engineers Data: Sibley Printed 3/13/2020, 11:39 AM

Constituent	Well	<u>N</u>	Mean	Std. Dev.	Std. Err.	Median	<u>Min.</u>	Max.	<u>%NDs</u>
Sulfate (mg/L)	504 (bg)	19	27.04	8.309	1.906	31.8	14.3	36.3	0
Sulfate (mg/L)	505 (bg)	14	16.92	4.917	1.314	15.4	9.73	29.2	0
Sulfate (mg/L)	512	21	35.42	11.9	2.597	30.3	21	61.6	0
Sulfate (mg/L)	514 (bg)	9	24.77	0.8155	0.2718	24.7	23.6	25.9	0
Sulfate (mg/L)	515 (bg)	9	38.23	27.91	9.303	22.3	18.7	93.9	0
Sulfate (mg/L)	516 (bg)	9	20.38	1.3	0.4333	20.4	18.5	22.6	0
Sulfate (mg/L)	PZ-03 (bg)	9	24.96	1.013	0.3375	25.1	23.5	27	0

Appendix C

Piper Diagram Plots and Analytical Results



Sibley Client: SCS Engineers Data: Sibley

Analysis Run 3/13/2020 11:51 AM View: LF III

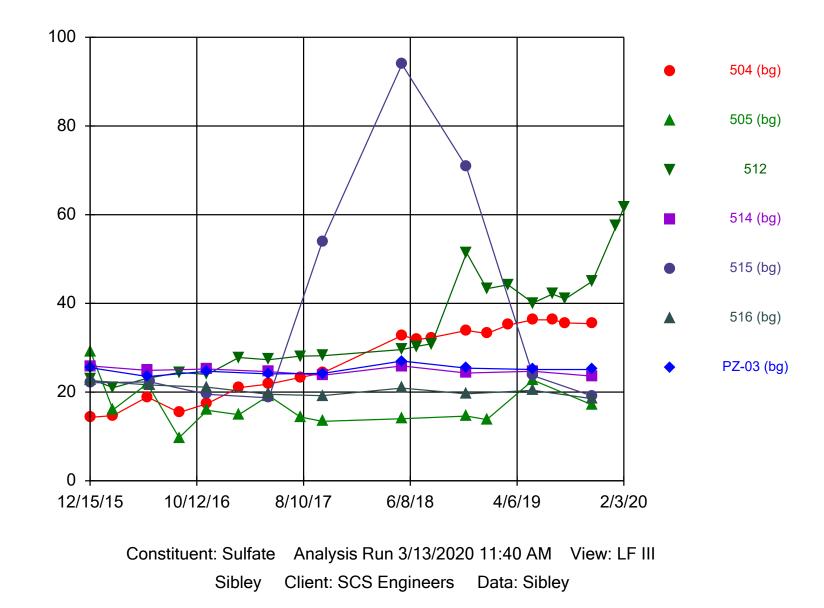
Sibley Client: SCS Engineers Data: Sibley

Totals (ppm)	Na	K	Ca	Mg	Cl	S04	HCO3	CO3
504* 5/25/2016	6.54	1.27	30.2	8.36	0.5	18.9	89	10
504* 8/23/2016	6.61	1.15	32.2	8.56	0.5	15.4	99.5	10
504* 11/11/2016	8.17	1.3	36.9	8.97	0.5	17.4	94.7	10
504* 2/8/2017	6.83	1.28	29.6	9.94	0.5	21	105	10
504* 1/11/2019	7.64	1.9	39.3	9.85	0.5	33.2	103	10
504* 7/16/2019	7.92	1.49	40.6	11.8	0.5	36.3	124	10
512 5/25/2016	10	2.24	98.9	36.8	2.55	23.1	356	10
512 8/23/2016	10.3	2.13	103	36.9	3.23	24.4	384	10
512 11/11/2016	9.96	2.16	100	35.6	3.17	24	352	10
512 2/8/2017	10	2.35	86.4	37.9	3.14	27.8	358	10
512 1/11/2019	10.6	2.25	110	37.8	3.85	43.3	366	10
512 7/16/2019	10.4	2.33	108	38.6	4.35	42.1	363	10
512 1/13/2020	9.87	2.18	103	38.4	5.97	57.5	391	10
LEACHATEPOND 5/25/2016	499	58.6	129	12.9	44.1	1440	10	119
LEACHATEPOND 8/23/2016	479	56.8	108	12.8	42.8	1320	10	104
LEACHATEPOND 11/10/2016	651	75.3	224	22.5	50.4	1820	30.5	68.3
LEACHATEPOND 2/9/2017	678	66.2	89.4	10.8	64.5	2200	38.9	146
LEACHATE 3/23/2018	741	70.3	88.5	4.66	79.1	1690	10	108

Appendix D

Time Series Plots

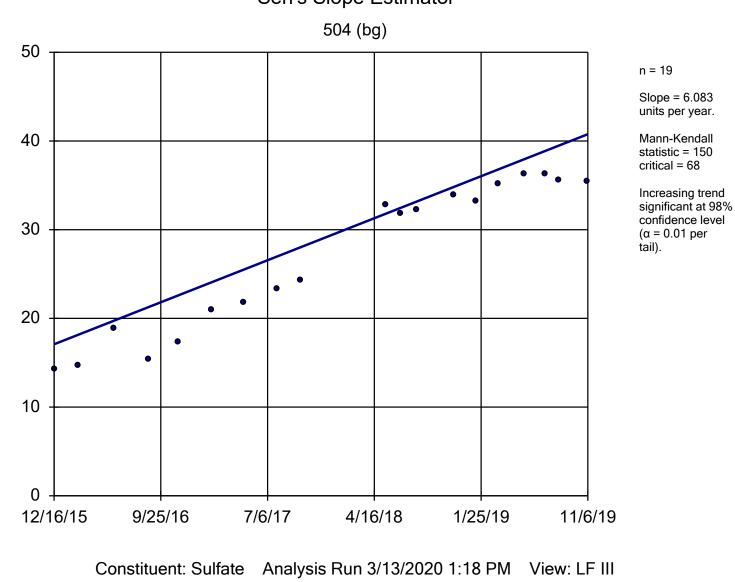
Time Series



Appendix E

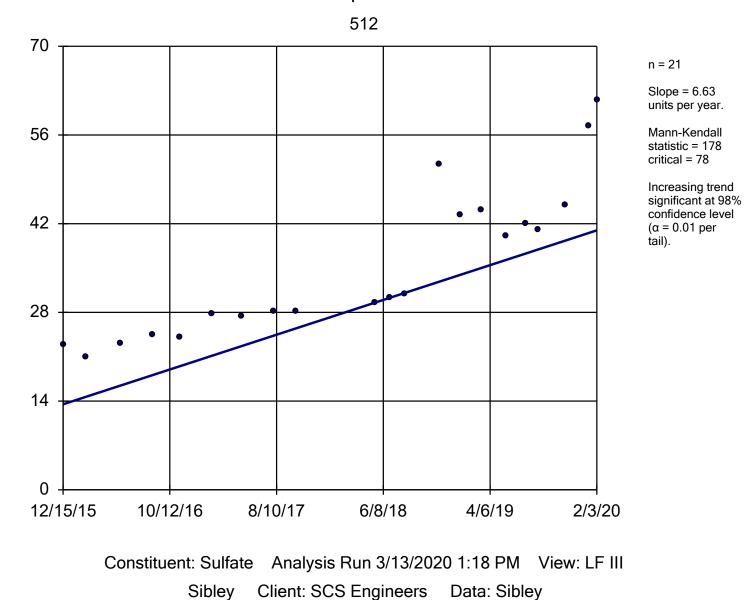
Trend Analysis

mg/L



Sen's Slope Estimator

Sibley Client: SCS Engineers Data: Sibley



Sen's Slope Estimator

Trend Test

Sibley Client: SCS Engineers Data: Sibley Printed 3/13/2020, 1:18 PM

Constituent	Well	Slope	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	N	<u>%NDs</u>	Normality	<u>Xform</u>	<u>Alpha</u>	Method
Sulfate (mg/L)	504 (bg)	6.083	150	68	Yes	19	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	512	6.63	178	78	Yes	21	0	n/a	n/a	0.02	NP

C.2 Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, CCR Landfill, Sibley Generating Station (December 2020)

CCR GROUNDWATER MONITORING ALTERNATIVE SOURCE DEMONSTRATION REPORT MAY 2020 GROUNDWATER MONITORING EVENT

CCR LANDFILL SIBLEY GENERATING STATION SIBLEY, MISSOURI

Presented To:

Evergy Missouri West, Inc.

Presented By:

SCS ENGINEERS

8575 West 110th Street, Suite 100

Overland Park, Kansas 66210

December 2020 File No. 27213169.20

CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Sibley Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted hydrogeological practices and the local standard of care.



John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Sibley Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted engineering practices and the local standard of care.



Douglas L. Doerr, P.E.

SCS Engineers

Table of Contents

Section

Page

CERT	IFICA	ΓΙΟΝS	. i
1	Regu	latory Framework	1
2	Stati	stical Results	1
3	Alter	native Source Demonstration	2
	3.1	Time Series Plots	2
	3.2	Piper Diagram Plots	3
	3.3	Box and Whiskers Plots	4
	3.4	Binary Plots	5
4	Conc	lusion	5
5	Gene	eral Comments	5

Appendices

Appendix A	Figure 1
Appendix B	Time Series Plots
Appendix C	Piper Diagram Plots and Analytical Results
Appendix D	Box and Whiskers Plots
Appendix E	Binary Plots

1 REGULATORY FRAMEWORK

Certain owners or operators of Coal Combustion Residuals (CCR) units are required to complete groundwater monitoring activities to evaluate whether a release from the unit has occurred. Included in the activities is the completion of a statistical analysis of the groundwater quality data as prescribed in § 257.93(h) of the CCR Final Rule. If the initial analysis indicates a statistically significant increase (SSI) over background levels, the owner or operator may perform an alternative source demonstration (ASD). In accordance with § 257.94(e)(2), the owner or operator of the CCR unit may demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a SSI over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under § 257.94. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. 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.

2 STATISTICAL RESULTS

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Sibley Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on May 18, 2020. Review and validation of the results from the May 2020 Detection Monitoring Event was completed on June 26, 2020, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on July 14, 2020 and August 26, 2020.

The completed statistical evaluation identified one or more Appendix III constituents above the prediction limits established for monitoring wells MW-505, MW-506, and MW-512. Calcium was above its prediction limit for MW-505 and sulfate was above its prediction limit for MW-506. Chloride, total dissolved solids and sulfate were above prediction limits established for monitoring well MW-512.

Constituent/Monitoring Well	*UPL	Observation	1st Verification	2nd Verification
constituent/wonitoring wen	OFL	May 18, 2020	July 14, 2020	August 26, 2020
Calcium				
MW-505	29.31	30.5	32.4	30.3
Chloride				
MW-512	5.094	7.69	8.83	8.79
Total Dissolved Solids				
MW-512	466.4	481	501	493

1

Constituent/Monitoring Well	*UPL	Observation May 18, 2020	1st Verification July 14, 2020	2nd Verification August 26, 2020		
Sulfate						
MW-506	76.83	80.0	78.6	79.6		
MW-512	44.8	71.6	77.6	80.1		

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified five SSIs above the background prediction limits. These include calcium in upgradient monitoring well MW-505, sulfate in monitoring well MW-506, and chloride, total dissolved solids, and sulfate in monitoring well MW-512.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration (ASD) is a means to provide supporting lines of evidence that something other than a release from a regulated CCR unit caused an SSI. For the above-identified SSIs for the CCR Landfill at the Sibley Generating Station, there are multiple lines of supporting evidence to indicate the above SSIs were not caused by a release from the CCR Landfill. Select multiple lines of supporting evidence are described as follows.

3.1 TIME SERIES PLOTS

Time series plots provide a graphical method to view changes in data at a particular well (monitoring point) or wells over time. Time series plots display the variability in concentration levels over time and can be used to indicate possible outliers or data errors (i.e. "spikes"). More than one well can be compared on the same plot to look for differences between wells. Non-detect data is plotted as censored data at one-half of the laboratory reporting limit. Time series plots can also be used to examine the data for trends.

The time series plot for calcium in upgradient monitoring well MW-505 was compared to the time series plot for calcium in upgradient monitoring well MW-504. Calcium comparisons indicate the concentrations in MW-505 are less than the concentrations in MW-504 demonstrating natural variability in upgradient groundwater not impacted by the landfill.

The time series plot for chloride in monitoring well MW-512 was compared to time series plots for chloride in several upgradient and side-gradient non-CCR monitoring system wells installed for future state-permitted landfill expansion purposes. Chloride comparisons indicate the concentrations in MW-512 are well within or below expected concentration levels for non-impacted groundwater in the vicinity of the CCR Landfill.

The time series plot for TDS in monitoring well MW-512 was compared to time series plots for TDS in several upgradient and side-gradient non-CCR monitoring system wells installed for future state-permitted landfill expansion purposes. TDS comparisons indicate the concentrations in MW-512 are within the range of concentration levels for non-impacted groundwater in the vicinity of the CCR Landfill.

Additionally, an increase in TDS occurred in all of the upgradient and side-gradient wells from November 2019 to May 2020 indicating the increase in MW-512 was not due to the landfill.

The time series plot for sulfate in monitoring well MW-512 was compared to time series plots for sulfate in several upgradient and side-gradient non-CCR monitoring system wells installed for future statepermitted landfill expansion purposes. Sulfate comparisons indicate the concentrations in MW-512 are within the range of concentration levels for non-impacted groundwater in the vicinity of the CCR Landfill; specifically MW-515. There are increasing concentrations in well MW-504 and the large variations of concentrations in MW-515, both of which are not the result of the landfill. Additionally, a relatively large increase in sulfate occurred in MW-515 from November 2019 to May 2020 indicating that an increase of this type can occur naturally independent of the landfill.

Figure 1 in **Appendix A** shows these upgradient and non-CCR monitoring system wells and their relationships to groundwater flow near and beneath the CCR Landfill. Because the non-CCR monitoring system wells are located in a nearby area where they could not be impacted by the landfill due to their upgradient and side-gradient locations, and exhibit variability that includes concentrations within the range or similar to those seen in MW-505, MW-506, and MW-512, the observed concentrations are within the range of expected natural spatial variation within and between wells. This demonstrates that a source other than the CCR Landfill caused the SSIs over the background levels, or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Time series plots are provided in **Appendix B**.

3.2 PIPER DIAGRAM PLOTS

Piper diagrams are a form of tri-linear diagram, and a widely accepted method to provide a visual representation of the ion concentration of groundwater. Piper diagrams portray water compositions and facilitate the interpretation and presentation of chemical analyses. They may be used to visually compare the chemical composition of water quality across wells, and aid in determining whether the waters are similar or dis-similar, and can over time indicate whether the waters are mixing.

A piper diagram has two triangular plots on the right and left side of a 4-sided center field. The three major cations are plotted in the left triangle and anions in the right. Each of the three cation/anion variables, in milliequivalents, is divided by the sum of the three values, to produce a percent of total cation/anions. These percentages determine the location of the associated symbol. The data points in the center field are located by extending the points in the lower triangles to the point of intersection. In order for a piper diagram to be produced, the selected data file must contain the following constituents: Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg), Chloride (Cl), Sulfate (SO4), Carbonate (CO3), and Bicarbonate (HCO3).

A piper diagram generated for wells MW-505, MW-506, MW-512, and landfill leachate is provided in **Appendix C** along with analytical results. The piper diagram indicates the groundwater from these three wells have similar geochemical characteristics and do not exhibit the same geochemical characteristics as the leachate. The groundwater and the leachate plot in different hydrochemical facies indicating there is no mixing of the two types of water (groundwater and leachate) and that both upgradient and downgradient groundwater characteristics are different from the leachate. This demonstrates that a

source other than the CCR Landfill caused the SSIs over the background levels, or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.3 BOX AND WHISKERS PLOTS

A commonly accepted method to demonstrate and visualize the distribution of data in a given data set is to construct box and whiskers plots. The basic box plotted graphically locates the median, 25th and 75th percentiles of the data set; the "whiskers" extend to the minimum and maximum values of the data set. The range between the ends of a box plot represents the Interquartile Range, which can be used as an estimate of spread or variability. The mean is denoted by a "+".

When comparing multiple wells or well groups, box plots for each well can be lined up on the same axis to roughly compare the variability in each well. This may be used as an exploratory screening for the test of homogeneity of variance across multiple wells.

The box and whiskers plot for calcium in upgradient monitoring well MW-505 was compared to the box and whiskers plot for calcium in upgradient monitoring well MW-504. Calcium comparisons indicate the concentrations in MW-505 are less than the concentrations in MW-504 demonstrating natural variability in upgradient groundwater not impacted by the landfill.

The box and whiskers plot for chloride in monitoring well MW-512 was compared to box and whisker plots for chloride in several upgradient and side-gradient non-CCR monitoring system wells installed for future state-permitted landfill expansion purposes. Chloride comparisons indicate the concentrations in MW-512 are well within or below expected concentration levels for non-impacted groundwater in the vicinity of the CCR Landfill.

The box and whiskers plot for TDS in monitoring well MW-512 was compared to box and whisker plots for TDS in several upgradient and side-gradient non-CCR monitoring system wells installed for future statepermitted landfill expansion purposes. TDS comparisons indicate the concentrations in MW-512 are within the range of concentration levels for non-impacted groundwater in the vicinity of the CCR Landfill.

The box and whiskers plot for sulfate in monitoring well MW-512 was compared to box and whisker plots for sulfate in several upgradient and side-gradient non-CCR monitoring system wells installed for future state-permitted landfill expansion purposes. Sulfate comparisons indicate the concentrations in MW-512 are within the range of concentration levels for non-impacted groundwater in the vicinity of the CCR Landfill; specifically MW-515.

Figure 1 in **Appendix A** shows these upgradient and non-CCR monitoring system wells and their relationships to groundwater flow near and beneath the CCR Landfill. Because the non-CCR monitoring system wells are located in a nearby area where they could not be impacted by the landfill due to their upgradient and side-gradient locations, and exhibit variability that includes concentrations similar to those seen in MW-505, MW-506, and MW-512, the observed concentrations are within the range of expected natural spatial variation within and between wells. This demonstrates that a source other than the CCR Landfill caused the SSIs over the background levels, or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whisker plots are provided in **Appendix D**.

3.4 BINARY PLOTS

Binary plots are another way to visualize data and allow evaluation of mixing of various waters. Binary plots for the monitoring wells and leachate were prepared for pairs of highly mobile constituents. These include chloride - sulfate, boron - sulfate, and boron - chloride. The chloride – sulfate plot identifies the mixing zone between the mean concentrations for upgradient groundwater (MW-504 and MW-505) and leachate. If leachate were mixing with upgradient groundwater, the data for the downgradient wells would fall within the mixing zone on the plot; however, the data for the downgradient wells falls below the mixing zone. The boron – sulfate and boron - chloride plots identify the mixing line between the mean concentrations for upgradient groundwater (MW-505) and leachate. If leachate were mixing with upgradient (MW-504 and MW-505) and leachate. If leachate were mixing with upgradient groundwater (MW-504 and MW-505) and leachate. If leachate were mixing with upgradient groundwater, the sulfate – boron and chloride – boron data for MW-506 and MW-512 would fall on the mixing line and the boron concentrations would range from 0.20 mg/L to 1.13 mg/L based on the sulfate mixing line and approximately 0.80 mg/L to 3.64 mg/L based on the chloride mixing line. However, the boron in downgradient wells was not detected at a concentration above the reporting limit of 0.2 mg/L. Therefore, because boron is not present in the downgradient wells, leachate is not mixing with groundwater.

These binary plots demonstrate that leachate is not mixing with upgradient groundwater and that a source other than the CCR Landfill caused the SSI over the background level for sulfate or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Binary plots are provided in **Appendix E**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the CCR Landfill caused the SSI over the background level, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the CCR Landfill may continue with the detection monitoring program under § 257.94.

5 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Missouri West, Inc. for specific application to the Sibley Generating Station. No warranties, express or implied, are intended or made.

The signatures of the certifying registered geologist and professional engineer on this document represents that to the best of their knowledge, information, and belief in the exercise of their professional judgement in accordance with the standard of practice, it is their professional opinions that the aforementioned information is accurate as of the date of such signature. Any opinion or decisions by them

are made on the basis of their experience, qualifications, and professional judgement and are not to be construed as warranties or guaranties. In addition, opinions relating to regulatory, environmental, geologic, geochemical and geotechnical conditions interpretations or other estimates are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care. Appendix A

Figure 1



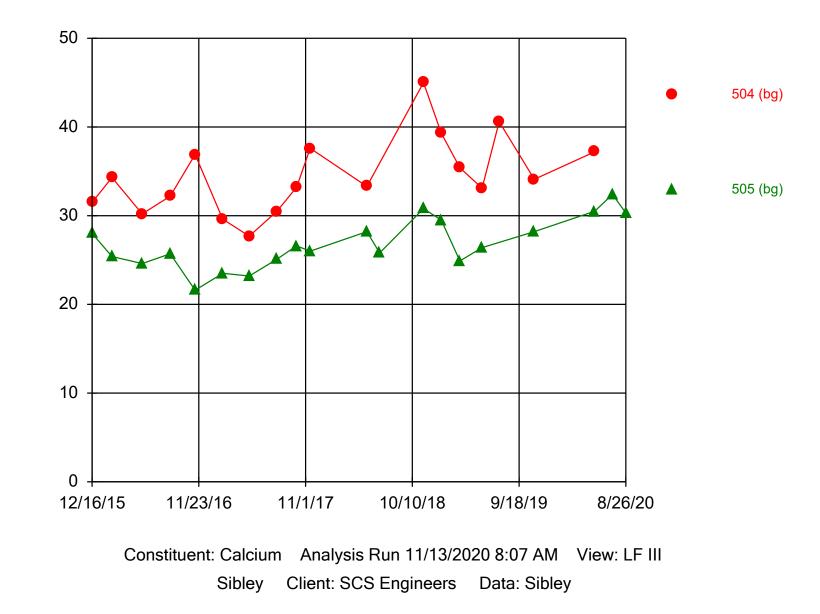
200 SCALE

LEGEND: - 760 GROUNDWATER SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT) • 601 GROUNDWATER MONITORING SYSTEM (738.07) WELLS (GROUNDWATER ELEVATION) - CCR LANDFILL UNIT BOUNDARY GROUNDWATER FLOW DIRECTION WELL(S) ABANDONED APRIL 2017 DUE TO INSUFFICIENT WATER BTP BELOW TOP OF PUMP NOTES: 1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010 2. GOOGLE EARTH AERIAL IMAGE. APRIL 2020.	SHEET TITLE POTENTIOMETRIC SURFACE MAP (MAY 2020)	CCR LANDFILL	Imme Imme ALTERNATIVE SOURCE Imme DEMONSTRATION (MAY 2020) Imme
3. BOUNDARY AND MONITORING WELL LOCATIONS SHOWN ARE APPROXIMATE.			SOURI
0 0 200 400 E FEET	CADD FI 20 - NOV_SW DEMONSTRATION	2/22	¥23

Appendix B

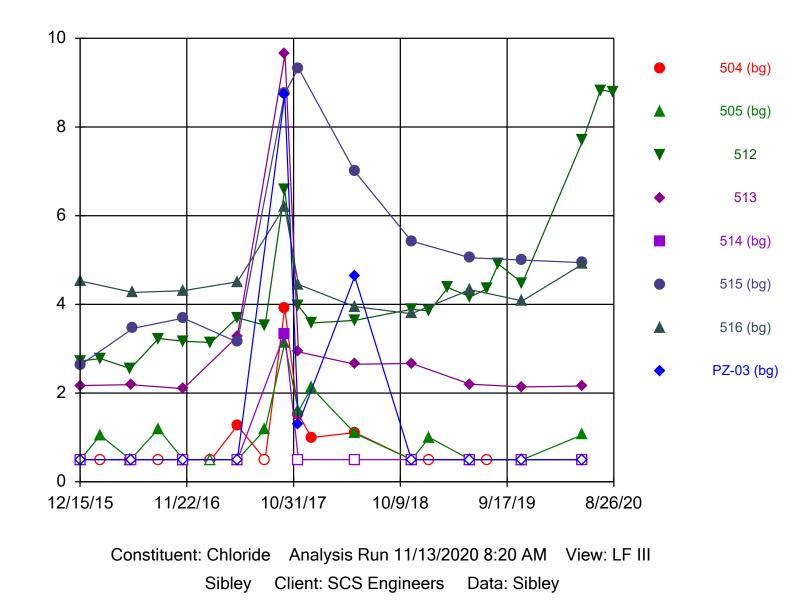
Time Series Plots

Time Series

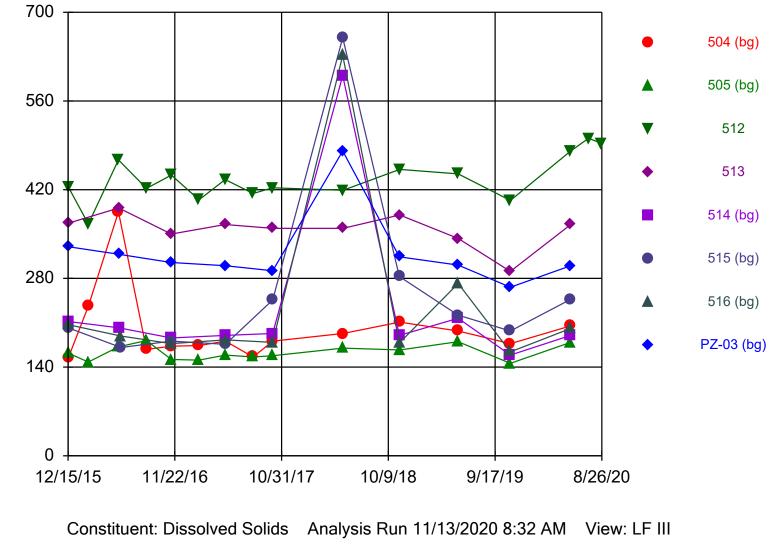


Sanitas[™] v.9.6.27 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.

Time Series



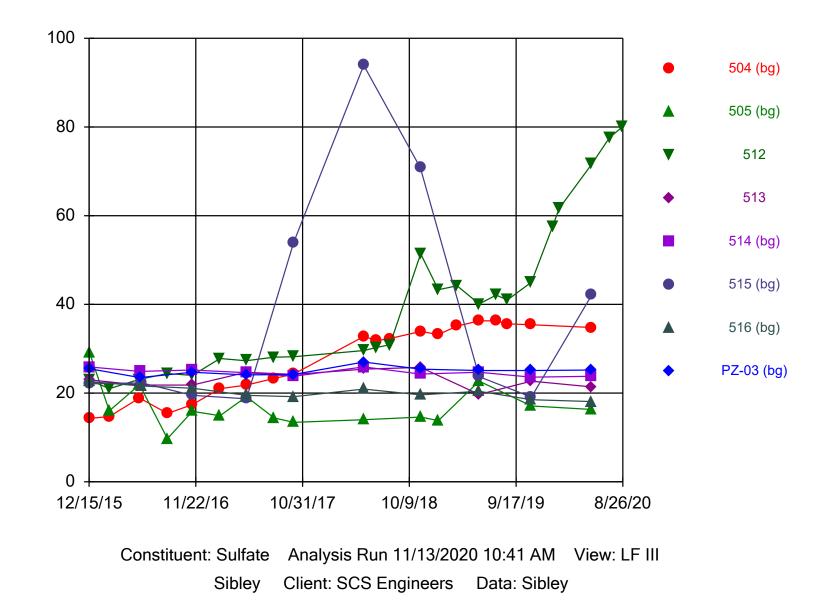
Time Series



Sibley Client: SCS Engineers Data: Sibley

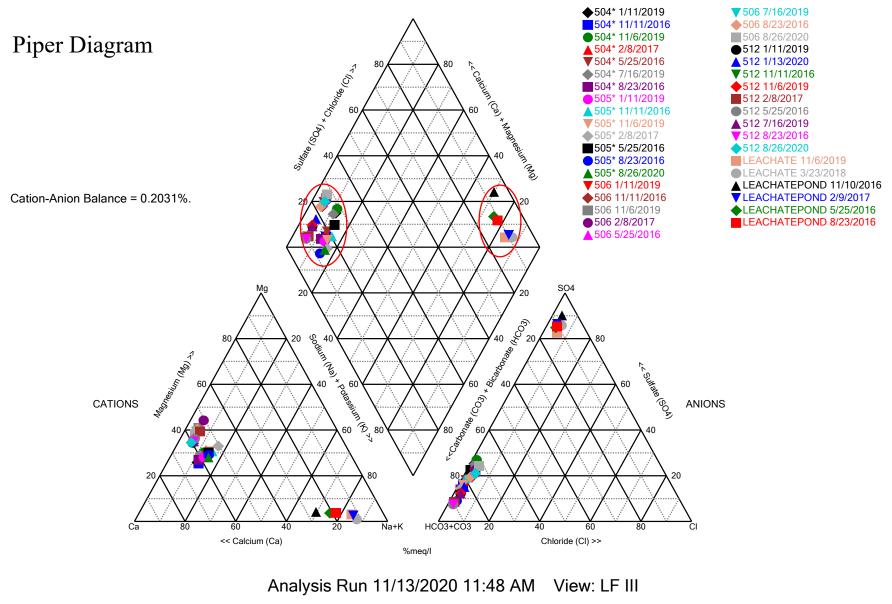
mg/l

Time Series



Appendix C

Piper Diagram Plots and Analytical Results



Sibley Client: SCS Engineers Data: Sibley

Piper Diagram

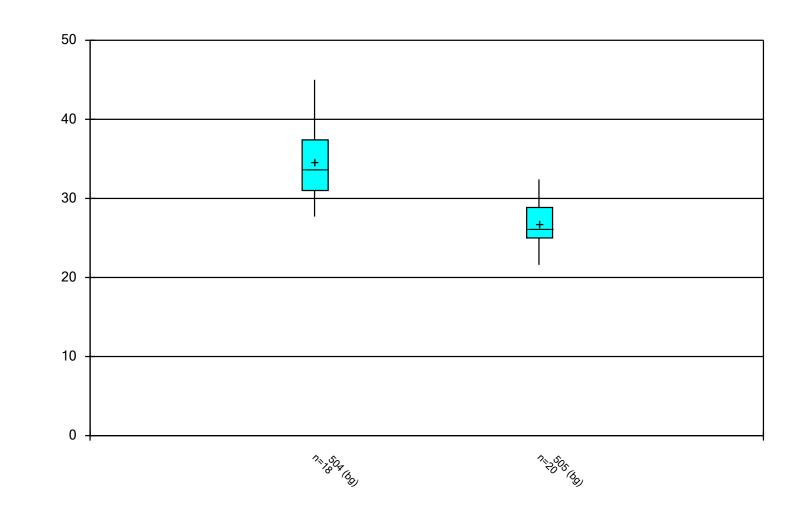
Analysis Run 11/13/2020 11:49 AM View: LF III

Sibley Client: SCS Engineers Data: Sibley

Totals (ppm)	Na	K	Ca	Mg	Cl	S04	HCO3	C03
504* 5/25/2016	6.54	1.27	30.2	8.36	0.5	18.9	89	10
504* 8/23/2016	6.61	1.15	32.2	8.56	0.5	15.4	99.5	10
504* 11/11/2016	8.17	1.3	36.9	8.97	0.5	17.4	94.7	10
504* 2/8/2017	6.83	1.28	29.6	9.94	0.5	21	105	10
504* 1/11/2019	7.64	1.9	39.3	9.85	0.5	33.2	103	10
504* 7/16/2019	7.92	1.49	40.6	11.8	0.5	36.3	124	10
504* 11/6/2019	7.31	1.33	34.1	10.7	0.5	35.4	101	10
505* 5/25/2016	6.93	0.5	24.6	8.05	0.5	21.9	75.3	10
505* 8/23/2016	7.28	0.5	25.7	7.97	1.19	9.73	101	10
505* 11/11/2016	6.91	0.5	21.6	7.39	0.5	15.9	68.5	10
505* 2/8/2017	8.52	0.5	23.5	9.3	0.5	14.9	94	10
505* 1/11/2019	7.54	0.5	29.5	8.42	1	13.8	87.5	10
505* 11/6/2019	8.24	0.5	28.2	9.54	0.5	17.1	93.6	10
505* 8/26/2020	8.95	1	30.3	8.95	1.03	14.3	110	10
506 5/25/2016	8.51	2.19	98.3	43.6	5.76	71	304	10
506 8/23/2016	8.28	1.79	97.2	42.8	6.16	65.8	326	10
506 11/11/2016	8.44	2.37	96.5	41.2	6.13	65	312	10
506 2/8/2017	8.25	2.04	83.6	43.9	5.89	76.5	307	10
506 1/11/2019	8.21	1.85	93	39.7	6.39	67.3	292	10
506 7/16/2019	8.24	1.89	95.3	40.7	7.33	76.1	291	10
506 11/6/2019	8.1	1.88	93.7	42.2	6.66	76.8	306	10
506 8/26/2020	8.15	1	93.9	38.2	7.31	79.6	289	10
512 5/25/2016	10	2.24	98.9	36.8	2.55	23.1	356	10
512 8/23/2016	10.3	2.13	103	36.9	3.23	24.4	384	10
512 11/11/2016	9.96	2.16	100	35.6	3.17	24	352	10
512 2/8/2017	10	2.35	86.4	37.9	3.14	27.8	358	10
512 1/11/2019	10.6	2.25	110	37.8	3.85	43.3	366	10
512 7/16/2019	10.4	2.33	108	38.6	4.35	42.1	363	10
512 11/6/2019	10	2.21	105	39.4	4.48	45	377	10
512 1/13/2020	9.87	2.18	103	38.4	5.97	57.5	391	10
512 8/26/2020	10.4	2.13	114	38.9	8.79	80.1	349	10
LEACHATEPOND 5/25/2016	499	58.6	129	12.9	44.1	1440	10	119
LEACHATEPOND 8/23/2016	479	56.8	108	12.8	42.8	1320	10	104
LEACHATEPOND 11/10/2016	651	75.3	224	22.5	50.4	1820	30.5	68.3
LEACHATEPOND 2/9/2017	678	66.2	89.4	10.8	64.5	2200	38.9	146
LEACHATE 3/23/2018	741	70.3	88.5	4.66	79.1	1690	10	108
LEACHATE 11/6/2019	732	76.4	101	13.5	74.3	1630	53.3	125

Appendix D

Box and Whiskers Plots



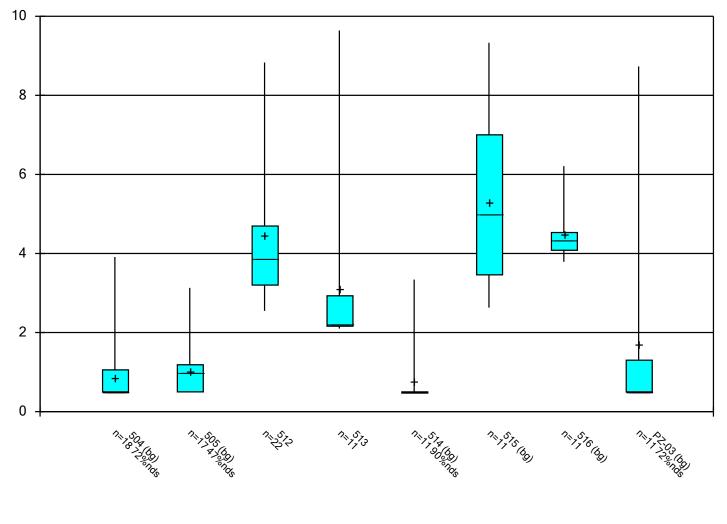
Box & Whiskers Plot

Constituent: Calcium Analysis Run 11/13/2020 8:07 AM View: LF III Sibley Client: SCS Engineers Data: Sibley

Box & Whiskers Plot

Sibley Client: SCS Engineers Data: Sibley Printed 11/13/2020, 8:07 AM

Constituent	Well	<u>N</u>	<u>Mean</u>	Std. Dev.	Std. Err.	Median	<u>Min.</u>	Max.	<u>%NDs</u>
Calcium (mg/L)	504 (bg)	18	34.54	4.327	1.02	33.7	27.7	45	0
Calcium (mg/L)	505 (bg)	20	26.84	2.839	0.6349	26.2	21.6	32.4	0



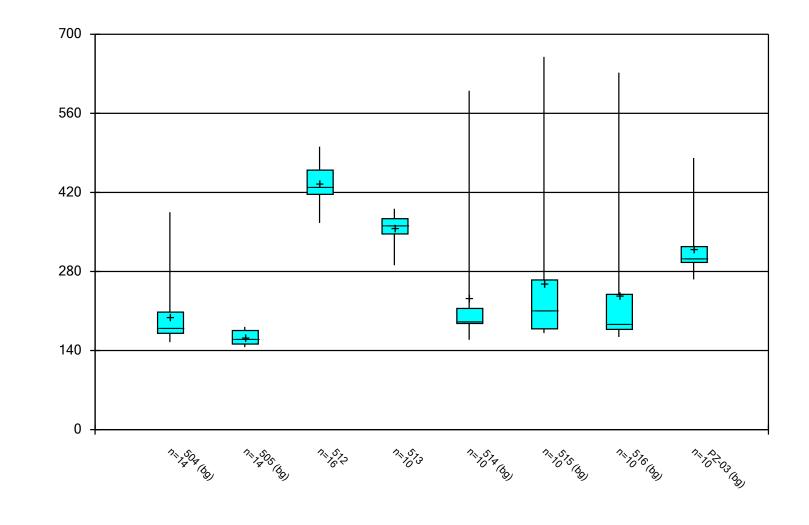
Box & Whiskers Plot

Constituent: Chloride Analysis Run 11/13/2020 8:25 AM View: LF III Sibley Client: SCS Engineers Data: Sibley

Box & Whiskers Plot

Sibley Client: SCS Engineers Data: Sibley Printed 11/13/2020, 8:27 AM

O-m-titure t	14/-11	N				Madian	N.4:	M	
<u>Constituent</u>	Well	<u>IN</u>	<u>Mean</u>	Std. Dev.	Std. Err.	<u>Median</u>	<u>Min.</u>	<u>Max.</u>	<u>%NDs</u>
Chloride (mg/L)	504 (bg)	18	0.8506	0.8286	0.1953	0.5	0.5	3.91	72.22
Chloride (mg/L)	505 (bg)	17	1.024	0.7164	0.1738	1	0.5	3.13	47.06
Chloride (mg/L)	512	22	4.452	1.843	0.393	3.87	2.55	8.83	0
Chloride (mg/L)	513	11	3.102	2.203	0.6642	2.2	2.1	9.64	0
Chloride (mg/L)	514 (bg)	11	0.7582	0.8563	0.2582	0.5	0.5	3.34	90.91
Chloride (mg/L)	515 (bg)	11	5.312	2.215	0.6678	5	2.63	9.33	0
Chloride (mg/L)	516 (bg)	11	4.485	0.6476	0.1953	4.33	3.79	6.21	0
Chloride (mg/L)	PZ-03 (bg)	11	1.696	2.64	0.7959	0.5	0.5	8.73	72.73



Box & Whiskers Plot

Constituent: Dissolved Solids Analysis Run 11/13/2020 8:31 AM View: LF III Sibley Client: SCS Engineers Data: Sibley

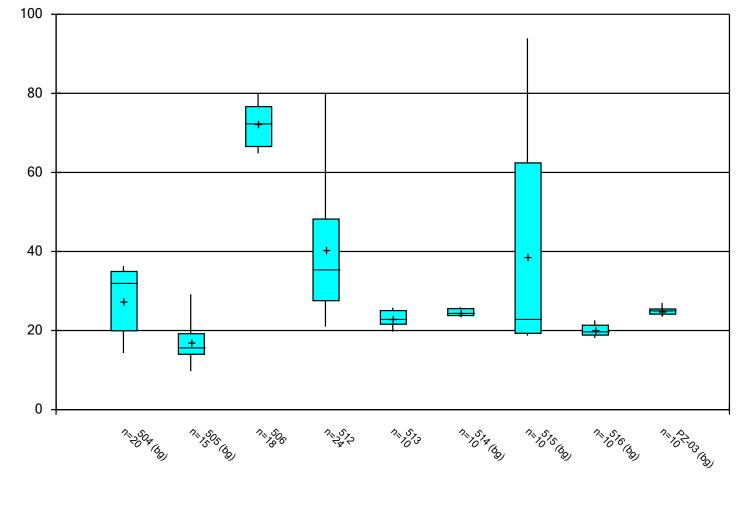
mg/l

Box & Whiskers Plot

Sibley Client: SCS Engineers Data: Sibley Printed 11/13/2020, 8:32 AM

Constituent	Well	<u>N</u>	Mean	Std. Dev.	Std. Err.	<u>Median</u>	<u>Min.</u>	Max.	<u>%NDs</u>
Dissolved Solids (mg/l)	504 (bg)	14	199.4	57.75	15.44	181	155	385	0
Dissolved Solids (mg/l)	505 (bg)	14	163	12.16	3.25	160.5	146	182	0
Dissolved Solids (mg/l)	512	16	437.1	35.68	8.92	430.5	366	501	0
Dissolved Solids (mg/l)	513	10	357	26.92	8.513	362	291	391	0
Dissolved Solids (mg/l)	514 (bg)	10	233.9	129.6	40.98	191.5	159	600	0
Dissolved Solids (mg/l)	515 (bg)	10	258.5	145.6	46.05	212	171	660	0
Dissolved Solids (mg/l)	516 (bg)	10	238.2	141.6	44.77	186	164	632	0
Dissolved Solids (mg/l)	PZ-03 (bg)	10	320.7	58.82	18.6	303	266	481	0

mg/L



Box & Whiskers Plot

Constituent: Sulfate Analysis Run 11/13/2020 11:12 AM View: LF III Sibley Client: SCS Engineers Data: Sibley

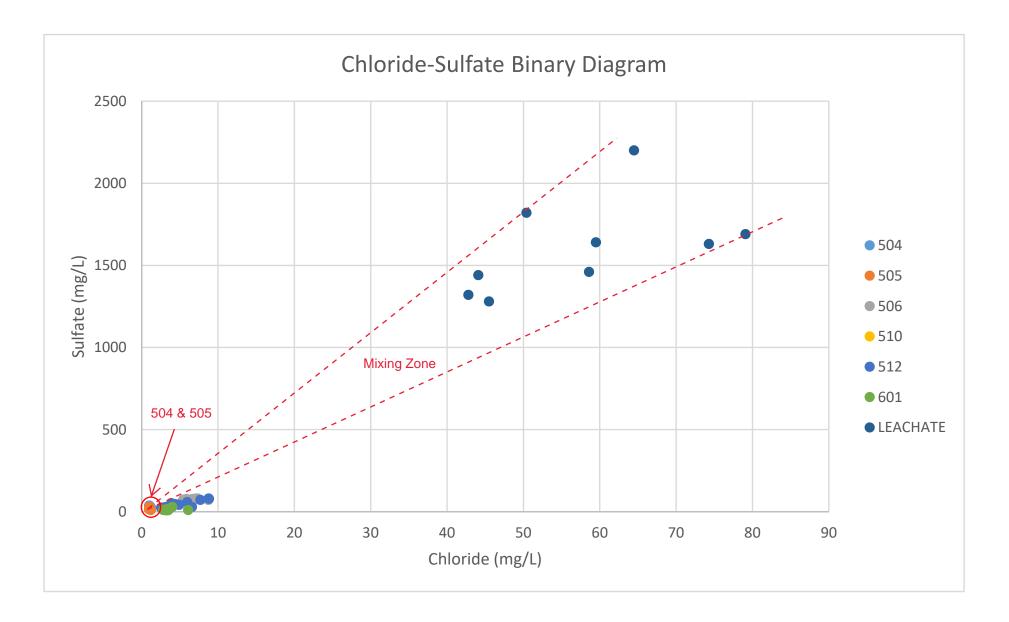
Box & Whiskers Plot

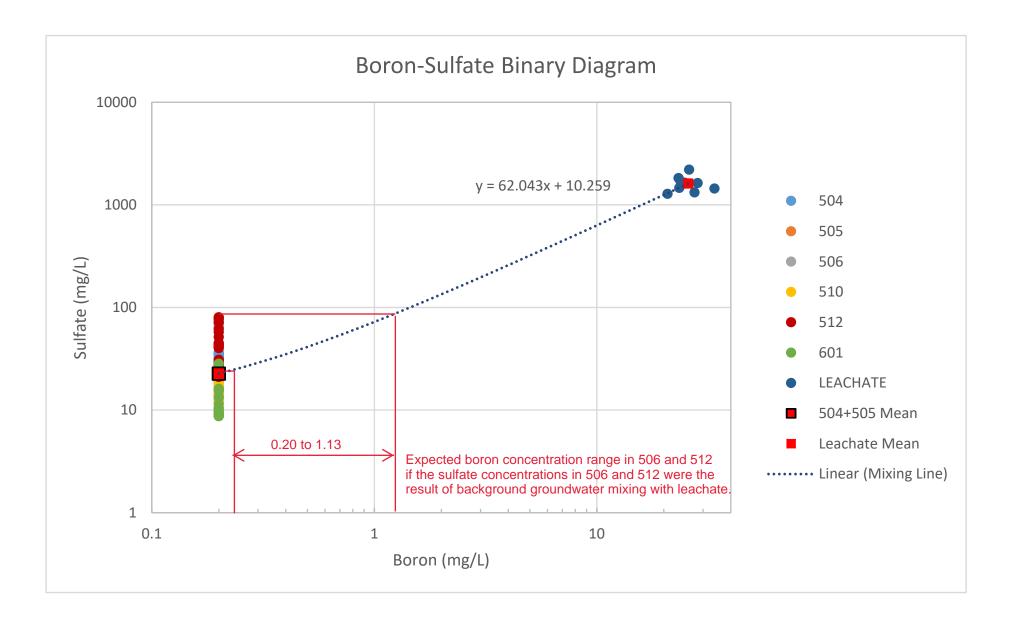
Sibley Client: SCS Engineers Data: Sibley Printed 11/13/2020, 11:13 AM

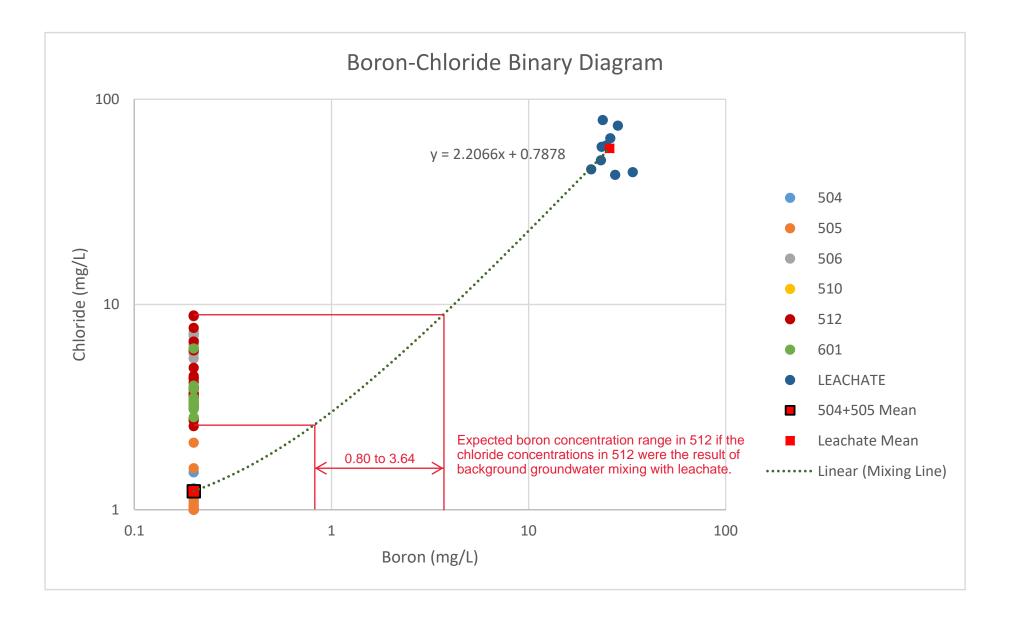
<u>Constituent</u>	Well	<u>N</u>	<u>Mean</u>	Std. Dev.	Std. Err.	<u>Median</u>	Min.	Max.	<u>%NDs</u>
Sulfate (mg/L)	504 (bg)	20	27.43	8.272	1.85	32.05	14.3	36.3	0
Sulfate (mg/L)	505 (bg)	15	16.88	4.741	1.224	15.9	9.73	29.2	0
Sulfate (mg/L)	506	18	72.31	5.185	1.222	72.3	64.8	80	0
Sulfate (mg/L)	512	24	40.55	17.8	3.633	35.5	21	80.1	0
Sulfate (mg/L)	513	10	23.05	1.953	0.6176	22.85	19.7	25.8	0
Sulfate (mg/L)	514 (bg)	10	24.67	0.8274	0.2616	24.65	23.6	25.9	0
Sulfate (mg/L)	515 (bg)	10	38.62	26.34	8.33	23	18.7	93.9	0
Sulfate (mg/L)	516 (bg)	10	20.15	1.421	0.4495	20	18.1	22.6	0
Sulfate (mg/L)	PZ-03 (bg)	10	24.98	0.9578	0.3029	25.1	23.5	27	0

Appendix E

Binary Plots







Addendum 1

2020 Groundwater Monitoring and Corrective Action Report Addendum 1

SCS ENGINEERS

December 16, 2022 File No. 27213167.20

- To: Evergy Metro, Inc. Jared Morrison – Director, Water and Waste Programs
- From: SCS Engineers Douglas L. Doerr, P.E. John R. Rockhold, P.G.



Subject: 2020 Annual Groundwater Monitoring and Corrective Action Report Addendum 1 Evergy Missouri West, Inc. CCR Landfill Sibley Generating Station – Sibley, Missouri

The CCR Landfill at the Sibley Generating Station is subject to the groundwater monitoring and corrective action requirements of the "Coal Combustion Residuals (CCR) Final Rule" (Rule); as described in CFR 40 257.90 through CFR 40 257.98. An Annual Groundwater Monitoring and Corrective Action (GWMCA) Report documenting activities completed in 2020 for the CCR Landfill was completed and placed in the facility's operating record on January 29, 2021, as required by the Rule. The report was subsequently revised and placed in the operating record April 7, 2021. The Annual. The Annual GWMCA report was to fulfill the requirements specified in 40 CFR 257.90(e).

This Addendum has been prepared to supplement the operating record in recognition of comments received by Evergy from the U.S. Environmental Protection Agency (USEPA) on January 11, 2022. In addition to the information listed in 40 CFR 257.90(e), the USEPA indicated in their comments that the GWMCA Report contain the following:

- Results of laboratory analysis of groundwater or other environmental media samples for 40 CFR 257 Appendix III and Appendix IV constituents or other constituents, such as those supporting characterization of site conditions that may ultimately affect a remedy'
- Required statistical analysis performed on laboratory analysis results; and
- Calculated groundwater flow rate and direction.

This information is not specifically referred to in 40 CFR 257.90(e) for inclusion in the GWMCA Reports; however, it is routinely collected, determined and maintained in Evergy's files and is being provided in the attachments to this addendum.

The attachments to this addendum are as follows:

• Attachment 1 – Laboratory Analytical Reports:

Includes laboratory data packages with supporting information such as case narrative, sample and method summary, analytical results, quality control, and chain-of-custody documentation. The laboratory data packages for the following sampling events are provided:

Jared Morrison December 16, 2022 Page 2

- January 2020 First verification sampling for the Fall 2019 detection monitoring sampling event.
- February 2020 Second verification sampling for the Fall 2019 detection monitoring sampling event.
- May 2020 Spring 2020 semiannual detection monitoring sampling event and Appendix IV.
- July 2020 First verification sampling for the Spring 2020 detection monitoring sampling event.
- August 2020 Second verification sampling for the Spring 2020 detection monitoring sampling event.
- November 2020 Fall 2020 semiannual detection monitoring sampling event.
- Attachment 2 Statistical Analyses:

Includes summary of statistical results, prediction limit plots, prediction limit background data, detection sample results, first and second verification re-sample results (when applicable), extra sample results for pH (collected as part of the approved sampling procedures), input parameters, and a Prediction Limit summary table. Statistical analyses completed in 2020 included the following:

- Fall 2019 semiannual detection monitoring statistical analyses.
- Spring 2020 semiannual detection monitoring statistical analyses.
- Attachment 3 Groundwater Potentiometric Surface Maps:

Includes groundwater potentiometric surface maps with the measured groundwater elevations at each well and the generalized groundwater flow direction and the calculated groundwater flow rate. Maps for the following sampling events are provided:

- May 2020 Spring 2020 semiannual detection monitoring sampling event.
- November 2020 Fall 2020 semiannual detection monitoring sampling event.

Jared Morrison December 16, 2022

ATTACHMENT 1

Laboratory Analytical Reports

Jared Morrison December 16, 2022

ATTACHMENT 1-1 January 2020 Sampling Event Laboratory Report



ANALYTICAL REPORT

January 15, 2020

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1178996 01/14/2020 27213168.19 Evergy - Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Тс Ss Cn Sr ʹQc Gl ΆI Sc

Entire Report Reviewed By:

Jubb land

Jeff Carr Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213168.19

SDG: L1178996 DATE/TIME: 01/15/20 11:17 PAGE: 1 of 15

TABLE OF CONTENTS

*	
¹ Cp	
² Tc	
^³ Ss	
⁴ Cn	
⁵Sr	
⁶ Qc	
⁷ Gl	

Â

Sc

Cp: Cover Page	1				
Tc: Table of Contents					
Ss: Sample Summary	3				
Cn: Case Narrative	4				
Sr: Sample Results	5				
MW-512 L1178996-01	5				
DUPLICATE 1 L1178996-02	6				
MW-803 L1178996-04	7				
DUPLICATE 2 L1178996-05	8				
MW-804 L1178996-07	9				
DUPLICATE 3 L1178996-08	10				
Qc: Quality Control Summary	11				
Wet Chemistry by Method 9056A	11				
GI: Glossary of Terms					
Al: Accreditations & Locations					
Sc: Sample Chain of Custody					

SDG: L1178996 DATE/TIME: 01/15/20 11:17 PAGE: 2 of 15

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

			Collected by	Collected date/time	Docoived do	to/timo
MW-512 L1178996-01 GW			Jason R. Franks	01/13/20 15:30	01/14/20 10:5	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1410910	1	01/14/20 20:58	01/14/20 20:58	ELN	Mt. Juliet, TN
DUPLICATE1 L1178996-02 GW			Collected by Jason R. Franks	Collected date/time 01/13/20 15:30	Received da 01/14/20 10:5	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1410910	1	01/14/20 21:55	01/14/20 21:55	ELN	Mt. Juliet, TN
MW-803 L1178996-04 GW			Collected by Jason R. Franks	Collected date/time 01/13/20 15:15	Received da 01/14/20 10:5	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1410910	1	01/14/20 22:10	01/14/20 22:10	ELN	Mt. Juliet, TN
DUPLICATE 2 L1178996-05 GW			Collected by Jason R. Franks	Collected date/time 01/13/20 15:15	Received da 01/14/20 10:5	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Wet Chemistry by Method 9056A	WG1410910	1	date/time 01/14/20 22:53	date/time 01/14/20 22:53	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A MW-804 L1178996-07 GW	WG1410910	1			ELN Received da 01/14/20 10:5	te/time
	WG1410910 Batch	1 Dilution	01/14/20 22:53 Collected by	01/14/20 22:53 Collected date/time	Received da	te/time
MW-804 L1178996-07 GW			01/14/20 22:53 Collected by Jason R. Franks Preparation	01/14/20 22:53 Collected date/time 01/13/20 15:55 Analysis	Received da 01/14/20 10:5	te/time 55
MW-804 L1178996-07 GW Method	Batch	Dilution	01/14/20 22:53 Collected by Jason R. Franks Preparation date/time	01/14/20 22:53 Collected date/time 01/13/20 15:55 Analysis date/time	Received da 01/14/20 10:5 Analyst	te/time 55 Location Mt. Juliet, TN te/time
MW-804 L1178996-07 GW Method Wet Chemistry by Method 9056A	Batch	Dilution	01/14/20 22:53 Collected by Jason R. Franks Preparation date/time 01/15/20 04:39 Collected by	01/14/20 22:53 Collected date/time 01/13/20 15:55 Analysis date/time 01/15/20 04:39 Collected date/time	Received da 01/14/20 10:5 Analyst ELN Received da	te/time 55 Location Mt. Juliet, TN te/time

SDG: L1178996 DATE/TIME: 01/15/20 11:17

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jubb land

Jeff Carr Project Manager

Τс Ss Cn Sr Qc GI AI Sc

PROJECT: 27213168.19

SDG: L1178996 DATE/TIME: 01/15/20 11:17

PAGE: 4 of 15

SAMPLE RESULTS - 01

*

Wet Chemistry by Method 9056A

							Cn	
	Result	Qualifier	RDL	Dilution	Analysis	Batch		Ch
Analyte	ug/l		ug/l		date / time			2
Sulfate	57500		5000	1	01/14/2020 20:58	<u>WG1410910</u>		Tc

³ Ss
⁴Cn
⁵Sr
⁶ Qc
⁷ Gl
⁸ Al
°Sc

SDG: L1178996

SAMPLE RESULTS - 02 L1178996



Ср

Wet Chemistry by Method 9056A

	3 3						l'Cn	н
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp	
Analyte	ug/l		ug/l		date / time		2	1
Sulfate	56100		5000	1	01/14/2020 21:55	WG1410910	⁻Tc	

³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
0
Sc

SDG: L1178996

SAMPLE RESULTS - 04 L1178996

¥

Ss

Cn

Qc

GI

Â

Sc

Wet Chemistry by Method 9056A

	, ,						Cn
	Re	esult <u>Qualifi</u>	er RDL	Dilution	Analysis	Batch	CP
Analyte	ug	g/I	ug/l		date / time		2
Chloride	16	700	1000	1	01/14/2020 22:10	WG1410910	⁻Tc

SAMPLE RESULTS - 05 L1178996

*

Wet Chemistry by Method 9056A

wet chemistry by Method 9056A							1 CD
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte	ug/l		ug/l		date / time		2
Chloride	16800		1000	1	01/14/2020 22:53	<u>WG1410910</u>	⁻ Tc

³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE RESULTS - 07 L1178996

¥

Ss

Cn

Qc

GI

Â

Sc

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	 Ср
Analyte	ug/l		ug/l		date / time		2
Fluoride	281		100	1	01/15/2020 04:39	WG1410910	⁻Tc

SDG: L1178996

SAMPLE RESULTS - 08 L1178996



Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l		date / time		2
Fluoride	333		100	1	01/14/2020 23:07	WG1410910	⁻Tc

³Ss
⁴ Cn
⁵Sr
⁶ Qc
⁷ Gl
⁸ Al
°Sc

ACCOUNT: SCS Engineers - KS

PROJECT: 27213168.19

SDG: L1178996 DATE/TIME: 01/15/20 11:17 PAGE: 10 of 15 Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY L1178996-01,02,04,05,07,08

(MB) R3490820-1	01/14/20 10:47	

(1010) R3490620-1	01/14/20 10.47					
	MB Result	MB Qualifier	MB MDL	MB RDL	٦ ٦	2
Analyte	ug/l		ug/l	ug/l		ĒΤα
Chloride	U		51.9	1000		
Fluoride	U		9.90	100		³ Ss
Sulfate	U		77.4	5000		Ľ

L1178996-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1178996-0	01/14/20 20:58	• (DUP) R3490820-3	01/14/20 21:12
-----------------	----------------	--------------------	----------------

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	5970	5960	1	0.112		15
Fluoride	318	316	1	0.567		15
Sulfate	57500	57500	1	0.0916		15

L1179159-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1179159-04 01/15/20	03:12 • (DUP) F	23490820-8	01/15/20 0	3:27		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	5360	5340	1	0.284		15
Fluoride	ND	0.000	1	0.000		15
Sulfate	ND	1600	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3490820-2 01/14	4/20 11:11				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39400	98.5	80.0-120	
Fluoride	8000	8010	100	80.0-120	
Sulfate	40000	39300	98.4	80.0-120	

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213168.19 DATE/TIME: 01/15/20 11:17

PAGE: 11 of 15



Ср

⁴Cn

Sr

Qc

GI

Â

Sc

Analyte

Chloride

Fluoride

Sulfate

Analyte

Chloride

Fluoride

Wet Chemistry by Method 9056A

ug/l

50000

5000

50000

ug/l

50000

5000

QUALITY CONTROL SUMMARY

Dilution

1

1

Dilution

1

1

Rec. Limits

80.0-120

80.0-120

80.0-120

Rec. Limits

80.0-120

80.0-120

%

%

MS Qualifier

MS Qualifier

E

MSD Qualifier

MSD Qualifier

E

RPD

0.200

0.503

0.169

RPD

0.649

0.227

%

%

MSD Rec.

%

94.6

93.6

87.3

MSD Rec.

%

93.2

94.2

MS Rec.

%

94.4

93.1

87.6

MS Rec.

%

94.0

94.4

MSD Result

ug/l

53300

5000

101000

MSD Result

ug/l

63300

5020

RPD Limits

RPD Limits

%

15

15

%

15

15

15

____ ²Tc

^₄Cn ^₅Sr

Sc

L1178996-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

L1178996-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

ug/l

53100

4980

L1178996-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

ug/l

63700

5030

(OS) L1178996-04 01/14/20 22:10 • (MS) R3490820-6 01/14/20 22:24 • (MSD) R3490820-7 01/14/20 22:39

101000

(OS) L1178996-01 01/14/20 20:58 • (MS) R3490820-4 01/14/20 21:26 • (MSD) R3490820-5 01/14/20 21:41

Spike Amount Original Result MS Result

ug/l

5970

318

57500

Spike Amount Original Result MS Result

ug/l

16700

309

(OS) L1178996-07 01/15/20	0 04:39 • (MS) F	R3490820-9 0	1/15/20 04:53	• (MSD) R3490	820-10 01/15/2	0 05:36						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	19700	66500	66600	93.5	93.7	1	80.0-120			0.183	15
Fluoride	5000	281	4920	4930	92.8	93.0	1	80.0-120			0.266	15
Sulfate	50000	9690	56600	56600	93.9	93.8	1	80.0-120			0.0966	15

PROJECT: 27213168.19

SDG: L1178996 DATE/TIME: 01/15/20 11:17 PAGE: 12 of 15

GLOSSARY OF TERMS

Τс

ŚS

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

PROJECT: 27213168.19

SDG: L1178996 DATE/TIME: 01/15/20 11:17

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska
Alaska	17-026	Nevada
Arizona	AZ0612	New Hampshir
Arkansas	88-0469	New Jersey–N
California	2932	New Mexico ¹
Colorado	TN00003	New York
Connecticut	PH-0197	North Carolina
Florida	E87487	North Carolina
Georgia	NELAP	North Carolina
Georgia ¹	923	North Dakota
Idaho	TN00003	Ohio–VAP
Illinois	200008	Oklahoma
Indiana	C-TN-01	Oregon
lowa	364	Pennsylvania
Kansas	E-10277	Rhode Island
Kentucky ¹⁶	90010	South Carolina
Kentucky ²	16	South Dakota
Louisiana	AI30792	Tennessee ^{1 4}
Louisiana 1	LA180010	Texas
Maine	TN0002	Texas ⁵
Maryland	324	Utah
Massachusetts	M-TN003	Vermont
Michigan	9958	Virginia
Minnesota	047-999-395	Washington
Mississippi	TN00003	West Virginia
Missouri	340	Wisconsin
Montana	CERT0086	Wyoming

lebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee ¹⁴	2006
Texas	T104704245-18-15
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213168.19

L1178996

PAGE: 14 of 15

01/15/20 11:17

SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210			8575 W.	s Payable 110th Street d Park, KS 662	10	Pres Chk				Analysis /	Çontair	<u>er / Preser</u>	vative		Chain of Cust	tody Page <u>of</u> Ce Analytical [®] nel Center for Testing & Incovening
Report to: Jason Franks	-			franks@scsengine @kcpl.com;	ers.com;	1									12065 Lebanor Mount Juliet, T	N 37122
Project Description: Evergy - Sibley Gen	erating Stati	City/State	SERIE	MO	Please Circ PT MT CT		Pres	Pres	Sa						Phone: 615-75 Phone: 800-76 Fax: 615-758-5	7-5859
Phone: 913-681-0030 Fax: 913-681-0012	Client Project 27213168.	#	/	Lab Project # AQUAOPKS-			HDPE-NoPres	9056 125mlHDPE-NoPres	PE-NoPres						SDG # [[] Table #	-18996 F080
Collected by (print): JA30N R. FRANKS	Site/Facility I	D#		P.Ö. #		-	25mlHl	SmIHI	125mHDPE							QUAOPKS
Collected by (signature):	Rush? (Same D	Lab MUST Be	Day	Quote #			9056 12	056 12	56						Template: T Prelogin: P	750308
Immediately Packed on Ice N Y	Two Da	ay5 Dan y10 D ay	ay (Rad Only)	Date Kes	ults Needed	No. of	1	ide - 9	te - 90						PM: 206 - Je PB:	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	Chloride	Fluoride -	Sulfate						Shipped Via Remarks	
MW-512	GRAB	GW	-	1/13/2020	1530	1			x							-01
DUPLICATE 1	Pro-	GW	-		1530	1			Х						-	6
MW-512 MS/MSD		GW	-		1530	1			X							03
MW-803		GW	-		1515	1	x								a feat ()	01
DUPLICATE 2	acami	GW	1	1. 1	1515	1	X								······································	05
MW-803 MS/MSD		GW	-	1.1	1515	1	x									06
MW-804		GW	-		1555	1		X								07
DUPLICATE 3		GW	-		1555	1		X								08
MW-804 MS/MSD	N	GW	/	J.	1555	1		X								pg
	V	L	1.1.1										1			
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater	Remarks:											Temp Other		COC SI Bottle	gned/Accurate; s arrive intact	ACCL: _NP _Y _N _Y _N L:Y _N
DW - Drinking Water OT - Other	Samples returned UPS Fe	rned via: edExCou	irier	Ta	acking #									Suffic VOA Ze	t bottles used: ient volume ser <u>If Applic</u> ro Headspace:	nt:
Relinguished by : (Signature)	A	Date:	/	Time: R	eceived by: (Signa	iture)		lžu.	2 2	Trip Blar		TBR	/ MeoH		vation Correct/ reen <0.5 mR/hr	
Relinguished by : (Signature)		Date:	1	Time: R	eceived by: (Signa	ture)	F			Temp: 0-7-1		Bottles F	leceived:	If preser	rvation required by	Login: Date/Time
Relinquished by : (Signature)		Date:	1	Fime: R	ceived for lab by	: (Signa	ture)			Date:	120	Time:	5	Hold:		Condition: NCF OK



ANALYTICAL REPORT

January 16, 2020

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1178998 01/14/2020 27213169.19 Evergy Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Тс Ss Cn Sr ʹQc Gl ΆI Sc

Entire Report Reviewed By:

Jubb land

Jeff Carr Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.19

SDG: L1178998 DATE/TIME: 01/16/20 08:57 PAGE: 1 of 14

TABLE OF CONTENTS

₩	
¹ Cp	
² Tc	
³ Ss	
⁴ Cn	
⁵Sr	
⁶ Qc	
⁷ Gl	

ΆI

Sc

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
MW-512 L1178998-01	5
MW-803 L1178998-02	6
MW-804 L1178998-03	7
Qc: Quality Control Summary	8
Wet Chemistry by Method 2320 B-2011	8
Wet Chemistry by Method 9056A	9
Metals (ICP) by Method 6010B	11
GI: Glossary of Terms	12
Al: Accreditations & Locations	13
Sc: Sample Chain of Custody	14

SDG: L1178998 DATE/TIME: 01/16/20 08:57

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

*

Ср

Тс

Ss

Cn

Sr

Qc

GI

ΆI

Sc

			Collected by	Collected date/time	Received da	
MW-512 L1178998-01 GW			Jason R. Franks	01/13/20 15:30	01/14/20 10:5	55
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Wet Chemistry by Method 2320 B-2011	WG1410718	1	01/14/20 18:49	01/14/20 18:49	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1410910	1	01/14/20 23:51	01/14/20 23:51	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1410965	1	01/14/20 16:56	01/15/20 11:38	CCE	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-803 L1178998-02 GW			Jason R. Franks	01/13/20 15:15	01/14/20 10:5	55
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Wet Chemistry by Method 2320 B-2011	WG1410718	1	01/14/20 18:56	01/14/20 18:56	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1410910	5	01/15/20 00:05	01/15/20 00:05	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1410965	1	01/14/20 16:56	01/15/20 11:41	CCE	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-804 L1178998-03 GW			Jason R. Franks	01/13/20 15:55	01/14/20 10:5	55
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Wet Chemistry by Method 2320 B-2011	WG1410718	1	01/14/20 19:20	01/14/20 19:20	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1410910	1	01/15/20 00:19	01/15/20 00:19	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1410965	1	01/14/20 16:56	01/15/20 11:49	CCE	Mt. Juliet, TN

SDG: L1178998 DATE/TIME: 01/16/20 08:57

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jubb land

Jeff Carr Project Manager

Τс Ss Cn Sr Qc GI AI Sc

PROJECT: 27213169.19

SDG: L1178998 DATE/TIME: 01/16/20 08:57

PAGE: 4 of 14

Collected date/time: 01/13/20 15:30

SAMPLE RESULTS - 01



Cn

Qc

7

Wet Chemistry by Method 2320 B-2011

							(
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		2
Alkalinity,Bicarbonate	391000		20000	1	01/14/2020 18:49	WG1410718	ŤΤ
Alkalinity,Carbonate	ND		20000	1	01/14/2020 18:49	WG1410718	
							³ S

Sample Narrative:

L1178998-01 WG1410718: Endpoint pH 4.5

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	5970		1000	1	01/14/2020 23:51	WG1410910

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch	GI
Analyte	ug/l		ug/l		date / time		8
Calcium	103000		1000	1	01/15/2020 11:38	WG1410965	ĬAĬ
Magnesium	38400		1000	1	01/15/2020 11:38	WG1410965	
Potassium	2180		1000	1	01/15/2020 11:38	WG1410965	°Sc
Sodium	9870		1000	1	01/15/2020 11:38	WG1410965	

IVI VV - O U S Collected date/time: 01/13/20 15:15

SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.

*

Cn

Qc

7

Wet Chemistry by Method 2320 B-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	— C
Analyte	ug/l		ug/l		date / time		2
Alkalinity,Bicarbonate	302000		20000	1	01/14/2020 18:56	WG1410718	ΤC
Alkalinity,Carbonate	ND		20000	1	01/14/2020 18:56	WG1410718	
							³ Ss

Sample Narrative:

L1178998-02 WG1410718: Endpoint pH 4.5

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Sulfate	130000		25000	5	01/15/2020 00:05	WG1410910

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch	GI
Analyte	ug/l		ug/l		date / time		•
Calcium	114000		1000	1	01/15/2020 11:41	WG1410965	ٌAI
Magnesium	23000		1000	1	01/15/2020 11:41	WG1410965	
Potassium	2250		1000	1	01/15/2020 11:41	WG1410965	9 S C
Sodium	24900		1000	1	01/15/2020 11:41	WG1410965	50

Collected date/time: 01/13/20 15:55

SAMPLE RESULTS - 03



Ss

Cn

Qc

GI

Wet Chemistry by Method 2320 B-2011

Analyte ug/l ug/l date / time		
		2
Alkalinity,Bicarbonate 571000 20000 1 01/14/2020 19:20	WG1410718	Tc
Alkalinity,Carbonate ND 20000 1 01/14/2020 19:20 WC	WG1410718	

Sample Narrative:

L1178998-03 WG1410718: Endpoint pH 4.5

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	20000		1000	1	01/15/2020 00:19	WG1410910
Sulfate	9370		5000	1	01/15/2020 00:19	WG1410910

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch	8
Analyte	ug/l		ug/l		date / time		Ŭ A
Calcium	145000		1000	1	01/15/2020 11:49	WG1410965	
Magnesium	37900		1000	1	01/15/2020 11:49	WG1410965	9
Potassium	6020		1000	1	01/15/2020 11:49	WG1410965	
Sodium	28000		1000	1	01/15/2020 11:49	WG1410965	

SDG: L1178998

Wet Chemistry by Method 2320 B-2011

QUALITY CONTROL SUMMARY

(MB) R3490765-1 01/14	/20 17:18			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Alkalinity,Bicarbonate	3230	J	2710	20000
Alkalinity,Carbonate	U		2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1178843-01 Original Sample (OS) • Duplicate (DUP)

OS) L1178843-01 01/14/20 18:08 • (DUP) R3490765-2 01/14/20 18:16									
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits			
Analyte	ug/l	ug/l		%		%			
Alkalinity,Bicarbonate	38200	38000	1	0.508		20			
Alkalinity,Carbonate	ND	0.000	1	0.000		20			

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

L1179018-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1179018-05 01/14/20	5) L1179018-05 01/14/20 19:37 • (DUP) R3490765-4 01/14/20 19:46										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits					
Analyte	ug/l	ug/l		%		%					
Alkalinity,Bicarbonate	9130	9050	1	0.913	J	20					
Alkalinity,Carbonate	U	0.000	1	0.000		20					

Sample Narrative:

OS: Endpoint pH 4.5 DUP: Endpoint pH 4.5

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213169.19

SDG: L1178998 DATE/TIME: 01/16/20 08:57

PAGE: 8 of 14 Cn

Sr

[°]Qc

GI

ΆI

Sc

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

(MB) R3490820-1	01/14/20 10:47			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Sulfate	U		77.4	5000

L1178996-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1178996-01 01/14/20 20:58 • (DUP) R3490820-3 01/14/20 21:12							
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	ug/l	ug/l		%		%	
Chloride	5970	5960	1	0.112		15	
Sulfate	57500	57500	1	0.0916		15	

L1179159-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1179159-04 01/15/2	0 03:12 • (DUP)	R3490820-8	01/15/20 0	3:27			· · · ·
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	9
Analyte	ug/l	ug/l		%		%	L
Chloride	5360	5340	1	0.284		15	
Sulfate	ND	1600	1	0.000		15	

Laboratory Control Sample (LCS)

(LCS) R3490820-2 01/14/2	CS) R3490820-2 01/14/20 11:11									
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier					
Analyte	ug/l	ug/l	%	%						
Chloride	40000	39400	98.5	80.0-120						
Sulfate	40000	39300	98.4	80.0-120						

L1178996-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1178996-01 01/14/20 20:58 • (MS) R3490820-4 01/14/20 21:26 • (MSD) R3490820-5 01/14/20 21:41												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	5970	53100	53300	94.4	94.6	1	80.0-120			0.200	15
Sulfate	50000	57500	101000	101000	87.6	87.3	1	80.0-120	E	E	0.169	15

ACCOUNT:	
SCS Engineers - KS	

PROJECT: 27213169.19

DATE/TIME: 01/16/20 08:57

PAGE: 9 of 14 Ср

⁺Cn

Sr

Qc

GI

Â

Sc

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

Τс

Ss

Cn

Sr

[°]Qc

GI

Â

Sc

L1178996-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1178996-04 01/14/20	22:10 • (MS) R	3490820-6 01	/14/20 22:24 •	(MSD) R34908	20-7 01/14/20	22:39						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	16700	63700	63300	94.0	93.2	1	80.0-120			0.649	15

L1178996-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1178996-07 01/15/20	78996-07 01/15/20 04:39 • (MS) R3490820-9 01/15/20 04:53 • (MSD) R3490820-10 01/15/20 05:36													
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits		
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%		
Chloride	50000	19700	66500	66600	93.5	93.7	1	80.0-120			0.183	15		
Sulfate	50000	9690	56600	56600	93.9	93.8	1	80.0-120			0.0966	15		

SDG: L1178998 DATE/TIME: 01/16/20 08:57

PAGE: 10 of 14

Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) R3490962-1 01/15/20 10:45

(1010) R3490902-1 01/1	5/20 10.45			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Calcium	U		46.3	1000
Magnesium	22.8	J	11.1	1000
Potassium	U		102	1000
Sodium	U		98.5	1000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3490962-2 01/15/2	20 10:48 • (LCS	D) R3490962-3	3 01/15/20 10:5	50						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Calcium	10000	9760	9750	97.6	97.5	80.0-120			0.0879	20
Magnesium	10000	10200	10100	102	101	80.0-120			0.342	20
Potassium	10000	9760	9710	97.6	97.1	80.0-120			0.542	20
Sodium	10000	9930	9920	99.3	99.2	80.0-120			0.174	20

L1178964-31 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1178964-31 01/15/20	10:53 • (MS) R3	3490962-5 01/	/15/20 10:58 • ((MSD) R34909	62-6 01/15/20	11:01						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	10000	1650	11400	11200	97.4	95.9	1	75.0-125			1.28	20
Magnesium	10000	1590	11600	11500	100	99.5	1	75.0-125			0.846	20
Potassium	10000	2630	12200	12000	95.2	94.0	1	75.0-125			1.00	20
Sodium	10000	17200	27300	26800	101	96.1	1	75.0-125			1.97	20

SDG: L1178998 DATE/TIME: 01/16/20 08:57 Sc

[°]Qc

GLOSSARY OF TERMS

*

Тс

Ss

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
0	
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

J

PROJECT: 27213169.19

The identification of the analyte is acceptable; the reported value is an estimate.

SDG: L1178998 DATE/TIME: 01/16/20 08:57

PAGE: 12 of 14

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebras
Alaska	17-026	Nevada
Arizona	AZ0612	New H
Arkansas	88-0469	New Je
California	2932	New M
Colorado	TN00003	New Ye
Connecticut	PH-0197	North C
Florida	E87487	North C
Georgia	NELAP	North C
Georgia ¹	923	North [
Idaho	TN00003	Ohio-\
Illinois	200008	Oklaho
Indiana	C-TN-01	Oregor
lowa	364	Pennsy
Kansas	E-10277	Rhode
Kentucky ¹⁶	90010	South (
Kentucky ²	16	South I
Louisiana	AI30792	Tennes
Louisiana ¹	LA180010	Texas
Maine	TN0002	Texas
Maryland	324	Utah
Massachusetts	M-TN003	Vermo
Michigan	9958	Virginia
Minnesota	047-999-395	Washin
Mississippi	TN00003	West V
Missouri	340	Wiscon
Montana	CERT0086	Wyomi
		,

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee ¹⁴	2006
Texas	T104704245-18-15
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213169.19

L1178998

PAGE: 13 of 14

01/16/20 08:57

CCS Engineers - KS			Billing Info					1.0	A	nalvsis /	Contain	er / Preservative		Chain of Custody	Page of	
SCS Engineers - KS 3575 W. 110th Street Overland Park, KS 66210			8575 W.	s Payable 110th Street d Park, KS 66		Pres Chk		くと						Pace / Nettonal Col	Analytical [®] Interfor Testing & Innovelion	
eport to: ason Franks			jay.martin	franks@scsengi @kcpl.com;				03		Pres				12065 Lebanon Rd Mount Juliet, TN 371 Phone: 615-758-585		
roject City/State City/State Collected:		SEBLEN		Please Cir PT MT CI	cle:	es.	E-HN	Pres	E-No				Phone: 800-767-585 Fax: 615-758-5859			
hone: 913-681-0030 ax: 913-681-0012	Client Project 27213169.1		/	AQUAOPKS-SIBLEY				250mlHDPE-HNO3	Chloride - 9056 125mlHDPE-NoPres	125mlHDPE-NoPres	SmiHDPE-NoPres		SDG # (178998 Table # F081			
JASON R. FORM	Site/Facility ID	#		P.O. #			125mlHDPE-NoPres	6010 250	25miHI	- 9056 12	HDPE-			Acctnum: AQU	ctnum: AQUAOPKS	
Collected by (signature):	Rush? (L	5 Day	Day (Rad Only)	Quote #	<u></u>	ALKCA 125	Na -	9056 1	SO4 - 9(6125ml			Template:T152 Prelogin: P750 PM: 206 - Jeff C	0311		
mmediately Packed on Ice N Y	Three Da	Two Day 10 Day (Rad Only) Three Day							ride -	Chloride, 1	- 905			PB: Shipped Via:		
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	ALKBI,	Ca, F	Chlo	Chlo	\$04			Remarks	Sample # (lab only)	
MW-512	GRAB	GW	-	1/13/20		3	X	X	X		~				-01	
MW-803 MW-804		GW GW			1515	3	X X	X X		x	X				02	
			. ±/2	El Contraction												
		. 3				-21		0-2-A-								
		-				1		-						2		
ing and the second s Second second sec																
' Matrix: S - Soil AIR - Air F - Filter SW - Groundwater B - Bioassay NW - WasteWater	Remarks:	L					Landard		10 -	gH Flow		Temp	Sample Receipt Checklist COC Seal Present/Intact: _NP _Y _N COC Signed/Accurate:Y _N Bottles arrive intact:Y _N Correct bottles used:Y _N			
DW - Drinking Water DT - Other	Samples retur UPS Fe		rier		Tracking #								Sufficient volume sent: Y_N If Applicable VOA Zero Headspace: _Y_N			
Relinquished by: (Signature)	\square	Date:	120	700 (Begeived by: (Sign	_	2.78 J			Trip Bla		Ved: Yes No HCL / MeoH TBR	RAD SCI	ation Correct/Ch een <0.5 mR/hr:	Zr _n	
Religionshed by : (Signature)	3977	Date:		ime: 1860	Received by: (Signi FedEk	ature)				Temp: C:71,3	1,0%	C Bottles Received:	If preser	vation required by Log	gin: Date/Time	
Relinquished by : (Signature)		Date:	and the second se		Received for lab by	y: (Signa				Date:	1 los	Time: 1055	Hold:		Condition: NCF / OK	

Jared Morrison December 16, 2022

ATTACHMENT 1-2 February 2020 Sampling Event Laboratory Report



ANALYTICAL REPORT

February 06, 2020

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1186188 02/05/2020 27213168.19 Evergy - Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Тс Ss Cn Sr ʹQc Gl AI Sc

Entire Report Reviewed By:

Jubb land

Jeff Carr Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213168.19

SDG: L1186188 DATE/TIME: 02/06/20 18:29

PAGE: 1 of 14

TABLE OF CONTENTS

1 2

*	
¹ Cp	ĺ
² Tc	
³ Ss	
⁴ Cn	
E.	Ĺ

Sr

Qc

GI

ΆI

Sc

Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
MW-512 L1186188-01	5
DUPLICATE 1 L1186188-02	6
MW-804 L1186188-03	7
DUPLICATE 2 L1186188-04	8
Qc: Quality Control Summary	9
Wet Chemistry by Method 9056A	9
GI: Glossary of Terms	12
Al: Accreditations & Locations	13
Sc: Sample Chain of Custody	14

Cp: Cover Page

Tc: Table of Contents

SDG: L1186188 DATE/TIME: 02/06/20 18:29

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

MW-512 L1186188-01 GW			Collected by Jason R. Franks	Collected date/time 02/03/20 11:55	Received da 02/05/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Net Chemistry by Method 9056A	WG1423103	1	02/06/20 00:02	02/06/20 00:02	ELN	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
DUPLICATE 1 L1186188-02 GW			Jason R. Franks	02/03/20 11:55	02/05/20 08	8:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 00:46	02/06/20 00:46	ELN	Mt. Juliet, TN
MW-804 L1186188-03 GW			Collected by Jason R. Franks	Collected date/time 02/03/20 12:45	Received da 02/05/20 08	
		D:1 .:	D	A 1 -		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 01:00	02/06/20 01:00	ELN	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
DUPLICATE 2 L1186188-04 GW			Jason R. Franks	02/03/20 12:45	02/05/20 08	8:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1423103	1	02/06/20 02:12	02/06/20 02:12	ELN	Mt. Juliet. TN

SDG: L1186188 DATE/TIME: 02/06/20 18:29

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jubb land

Jeff Carr Project Manager

Τс Ss Cn Sr Qc GI AI Sc

PROJECT: 27213168.19

SDG: L1186188 DATE/TIME: 02/06/20 18:29

PAGE: 4 of 14

SAMPLE RESULTS - 01

*

Ср

Wet Chemistry by Method 9056A

		-					 1'
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		2
Sulfate	61600	<u>J6</u>	5000	1	02/06/2020 00:02	WG1423103	T



SAMPLE RESULTS - 02 L1186188



Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	'Ср
Analyte	ug/l		ug/l		date / time		2
Sulfate	61900		5000	1	02/06/2020 00:46	WG1423103	⁻Tc

^³ Ss
⁴ Cn
⁵Sr
⁶ Qc
⁷ Gl
⁸ Al
°Sc

ACCOUNT: SCS Engineers - KS

PROJECT: 27213168.19

SDG: L1186188

DATE/TIME: 02/06/20 18:29 PAGE: 6 of 14

SAMPLE RESULTS - 03 L1186188

¥

Ss

Cn

Qc

GI

Â

Sc

Wet Chemistry by Method 9056A

	, ,							Cn
		Result	Qualifier	RDL	Dilution	Analysis	Batch	CP
Analyte		ug/l		ug/l		date / time		2
Fluoride		337		100	1	02/06/2020 01:00	WG1423103	⁻Tc

SAMPLE RESULTS - 04



Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	'Ср
Analyte	ug/l	qualifier	ug/l	Bildton	date / time	Batem	2
Fluoride	335		100	1	02/06/2020 02:12	WG1423103	⁻Tc

³ Ss ⁴ Cn ⁵ Sr ⁶ Qc ⁷ Gl ⁸ Al	
⁵ Sr ⁶ Qc ⁷ Gl ⁸ Al	³ Ss
⁵ Sr ⁶ Qc ⁷ Gl ⁸ Al	
⁶ Qc ⁷ Gl ⁸ Al	⁴ Cn
⁶ Qc ⁷ Gl ⁸ Al	
⁷ Gl ⁸ Al	⁵Sr
⁷ Gl ⁸ Al	
⁸ Al	⁶ Qc
⁸ Al	
Al	⁷ Gl
Al	
⁹ Sc	⁸ Al
°Sc	
	°Sc

ACCOUNT: SCS Engineers - KS PROJECT: 27213168.19

SDG: L1186188 DATE/TIME: 02/06/20 18:29

PAGE: 8 of 14

WG1423103

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

⁴Cn

Sr

Qc

GI

Â

Sc

Method Blank (MB)

Method Biai	k (IVID)				1
(MB) R3497541-1	02/05/20 22:50				
	MB Result	MB Qualifier	MB MDL	MB RDL	Ē
Analyte	ug/l		ug/l	ug/l	
Fluoride	U		9.90	100	1
Sulfate	U		77.4	5000	

L1186180-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1186180-01 02/0	5/20 23:34 • (DUP)	R3497541-3	02/05/20	23:48		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Fluoride	744	745	1	0.188		15
Sulfate	19400	19200	1	0.982		15

L1186330-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1186330-01 02/0	6/20 09:24 • (DUI	P) R349/541-18	8 02/06/2	0 09:39			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	JP RPD nits	
Analyte	ug/l	ug/l		%			
Fluoride	845	852	1	0.837			
Sulfate	11100	11200	1	0.615			

Laboratory Control Sample (LCS)

(LCS) R3497541-2 02/05/	(LCS) R3497541-2 02/05/20 23:05							
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier			
Analyte	ug/l	ug/l	%	%				
Fluoride	8000	8070	101	80.0-120				
Sulfate	40000	38700	96.7	80.0-120				

L1186188-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186188-01 02/06/20	OS) L1186188-01 02/06/20 00:02 • (MS) R3497541-4 02/06/20 00:17 • (MSD) R3497541-5 02/06/20 00:31											
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Fluoride	5000	323	4730	4780	88.1	89.1	1	80.0-120			0.981	15
Sulfate	50000	61600	98100	98700	73.1	74.2	1	80.0-120	JG	<u>J6</u>	0.569	15

ACCOUNT:	PROJECT:	SDG:	DATE/TIME:	PAGE:
SCS Engineers - KS	27213168.19	L1186188	02/06/20 18:29	9 of 14

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY L1186188-01,02,03,04

	³ Ss
1	

Τс

Cn

Sc

L1186188-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186188-03 02/06/2	0 01:00 • (MS)	R3497541-6 02	2/06/20 01:14 •	(MSD) R34975	641-7 02/06/20	01:58						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Fluoride	5000	337	4800	4890	89.2	91.0	1	80.0-120			1.82	15
Sulfate	50000	ND	46500	46700	88.3	88.7	1	80.0-120			0.398	15

L1186193-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186193-01 02/06/20	0 02:26 • (MS)	R3497541-8 02	2/06/20 02:41	• (MSD) R3497	541-9 02/06/2	0 02:55						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Fluoride	5000	209	4350	4470	82.8	85.3	1	80.0-120			2.83	15
Sulfate	50000	2000000	1980000	1980000	0.000	0.000	1	80.0-120	EV	EV	0.0504	15

L1186202-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186202-01 02/06/2	0 03:24 • (MS) F	R3497541-10 C	02/06/20 03:38	3 • (MSD) R349	7541-11 02/06/	20 03:53							8
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	L
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%	g
Fluoride	5000	1050	5500	5530	89.0	89.6	1	80.0-120			0.493	15	
Sulfate	50000	32800	72500	71900	79.4	78.3	1	80.0-120	J6	J6	0.804	15	

L1186202-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

OS) L1186202-03 02/06/20 04:51 • (MS) R3497541-12 02/06/20 05:05 • (MSD) R3497541-13 02/06/20 05:19												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Fluoride	5000	130	4630	4690	90.1	91.2	1	80.0-120			1.17	15
Sulfate	50000	1180000	1200000	1190000	30.6	24.6	1	80.0-120	EV	EV	0.250	15

L1186248-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186248-01 02/06/20 05:48 • (MS) R3497541-14 02/06/20 06:03 • (MSD) R3497541-15 02/06/20 06:17												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Fluoride	5000	329	4880	4940	90.9	92.1	1	80.0-120			1.24	15
Sulfate	50000	30100	71600	72000	83.1	83.8	1	80.0-120			0.503	15

ACCOUNT:	
SCS Engineers - KS	

PROJECT: 27213168.19

SDG: L1186188

DATE/TIME: 02/06/20 18:29

PAGE: 10 of 14 Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

L1186248-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1186248-06 02/06/2	20 07:00 • (MS) R3497541-16	02/06/20 07:4	13 • (MSD) R34	97541-17 02/00	6/20 07:58						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Fluoride	5000	792	5410	5420	92.3	92.6	1	80.0-120			0.272	15
Sulfate	50000	193000	208000	207000	29.4	28.8	1	80.0-120	E J6	E J6	0.142	15

SDG: L1186188 DATE/TIME: 02/06/20 18:29

PAGE: 11 of 14

GLOSSARY OF TERMS

*

Τс

Ss

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

V The sample concentration is too high to evaluate accurate spike recoveries.

PROJECT: 27213168.19

SDG: L1186188 DATE/TIME: 02/06/20 18:29

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alaska17-026NevadaArizonaAZ0612New HaArkansas88-0469New JeCalifornia2932New MaColoradoTN00003New YoConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth DGeorgia ¹ 923North DIdahoTN00003Ohio-VIllinois200008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky ¹⁶ 90010South DLouisianaAl30792TennesLouisiana ¹ LA180010Texas 5Maryland324UtahMinnesota047-999-395WashinMississippiTN00003Werk ViscontMissouri340Wiscont	Alabama	40660	Nebrask
Arkansas88-0469New JeCalifornia2932New MaColoradoTN00003New YoConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth CGeorgia ¹ 923North DIdahoTN00003Ohio-VIllinois20008OklahoiIndianaC-TN-01OregonIowa364PennsyKentucky ¹⁶ 90010South CLouisianaAl30792TennesLouisianaAl30792TennesMaineTN0002Texas 5Marland324UtahMinnesota047-999-395WashimMississippiTN0003West ViMissouri340Wiscont	Alaska	17-026	Nevada
California2932New MaColoradoTN00003New YoConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth DIdahoTN00003Ohio-VIllinois200008OklahooIndianaC-TN-01OregonIowa364PennsyKansasE-10277Rhode IKentucky ¹⁶ 90010South DLouisianaAl30792TennesLouisianaAl30792Texas ⁵ MaineTN0002Texas ⁵ Maryland324UtahMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Arizona	AZ0612	New Ha
ColoradoTN00003New YoConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth DGeorgia 1923North DIdahoTN00003Ohio-VIllinois200008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky 1690010South DLouisianaAl30792TennesLouisianaAl30792Texas 5MaineTN0002Texas 5Maryland324UtahMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Arkansas	88-0469	New Jer
ConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth DGeorgia 1923North DIdahoTN00003Ohio-VIllinois200008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky 1690010South DLouisianaAl30792TennesLouisiana 1LA180010Texas 5MaineTN0002Texas 5Maryland324UtahMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	California	2932	New Me
FloridaE87487North CGeorgiaNELAPNorth DGeorgia 1923North DIdahoTN00003Ohio-VIllinois200008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky 1690010South DLouisianaAl30792TennesLouisianaAl30792Texas 5MaineTN0002Texas 5Maryland324UtahMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Colorado	TN00003	New Yo
GeorgiaNELAPNorth CGeorgia 1923North DIdahoTN00003Ohio-VIllinois20008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky 1690010South DLouisianaAl30792TennesLouisianaAl30792Texas 5MaineTN0002Texas 5Maryland324UtahMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Connecticut	PH-0197	North Ca
Georgia 1923North DIdahoTN00003Ohio-VIllinois20008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky 1690010South CLouisianaAl30792TennesLouisianaLA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Florida	E87487	North Ca
IdahoTN00003Ohio-VIllinois200008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky ¹⁶ 90010South CKentucky 216South CLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Georgia	NELAP	North Ca
Illinois20008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky ¹⁶ 90010South CKentucky 216South CLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002Texas 5Maryland324UtahMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Georgia ¹	923	North D
IndianaC-TN-01OregonIowa364PennsyKansasE-10277Rhode IKentucky ¹⁶ 90010South CKentucky ² 16South CLouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002Texas ⁵ Maryland324UtahMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Idaho	TN00003	Ohio–V
Iowa364PennsyKansasE-10277Rhode IKentucky ¹⁶ 90010South CKentucky ² 16South CLouisianaAl30792TennessLouisiana ¹ LA180010TexasMaineTN0002Texas ⁵ Maryland324UtahMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West ViMissouri340Wiscont	Illinois	200008	Oklahor
KansasE-10277Rhode IKansasE-10277Rhode IKentucky ¹⁶ 90010South DLouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West ViMissouri340Wiscont	Indiana	C-TN-01	Oregon
Kentucky 1690010South CKentucky 216South DLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West ViMissouri340Wiscons	lowa	364	Pennsyl
Kentucky²16South DLouisianaAl30792TennessLouisiana ¹LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West ViMissouri340Wiscons	Kansas	E-10277	Rhode I
LouisianaAl30792TennessLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West VirMissouri340Wiscons	Kentucky ¹⁶	90010	South C
Louisiana 1LA180010TexasMaineTN0002Texas 5Maryland324UtahMassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West VirMissouri340Wiscons	Kentucky ²	16	South D
MaineTN0002Texas 5Maryland324UtahMassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West VirMissouri340Wiscons	Louisiana	AI30792	Tenness
Maryland324MassachusettsM-TN003WermonMichigan9958Minnesota047-999-395MississippiTN0003Missouri340	Louisiana ¹	LA180010	Texas
MassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West VirginiaMissouri340Wiscons	Maine	TN0002	Texas ⁵
Michigan 9958 Virginia Minnesota 047-999-395 Washim Mississippi TN00003 West Vi Missouri 340 Wiscons	Maryland	324	Utah
Minnesota 047-999-395 Washim Mississippi TN00003 West Vi Missouri 340 Wiscons	Massachusetts	M-TN003	Vermon
MississippiTN00003West ViMissouri340Wiscons	Michigan	9958	Virginia
Missouri 340 Wiscom	Minnesota	047-999-395	Washing
	Mississippi	TN00003	West Vir
Montana CERT0086 Wyomir	Missouri	340	Wiscons
	Montana	CERT0086	Wyomin

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee 14	2006
Texas	T104704245-18-15
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213168.19

L1186188

PAGE: 13 of 14

02/06/20 18:29



				Billing Info	rmation:					Analysi	s / Conta	iner / Pres	ervatiye	1	-	Chain of Custody	Page of
CS Engineers - KS 575 W. 110th Street overland Park, KS 66210	V. 110th Street Overland Park, KS 66210		Pres Chk									- Pace /	Analytical ^e Her for Teeting & Innovello				
eport to: ason Franks		-			franks@scsengine @kcpl.com;	ers.com;										12065 Lebanon Rd Mount Juliet, TN 371 Phone: 615-758-585	
roject Description: Evergy - Sibley Gen	eratin	g Stati	City/State Collected:	Starle	m MD	Please Circ PT MT CT	le:	Pres	res							Phone: 800-767-585 Fax: 615-758-5859	
hone: 913-681-0030 ax: 913-681-0012	Clien	t Project 1 3168. 1	Ħ		Lab Project # AQUAOPKS-	SIBLEY		125mHDPE-NoPres	125mIHDPE-NoPres							SDG # CI	186188
Hected by (print): DASON K. TRANKS	Site/I	te/Facility ID # P.		P.O. #			25mlHl	SmIHD							Acctnum: AQU		
Immediately Packed on Ice N Y		Rush? (L _ Same Da _ Next Day _ Two Day Three Da	/5 Day 10 Day		Quote #	ults Needed	No.	- 9056	9056							Template: T129 Prelogin: P753 PM: 206 - Jeff C PB:	8041
Sample ID	Com	ip/Grab	Matrix *	Depth	Date	Time	Cntrs	Fluoride	Sulfate -							Shipped Via: Remarks	Sample # (lab only)
MW-512	60	AB	GW		02/3/20	1/55	1		X						2		- 01
DUPLICATE 1			GW			1155	1		X								02
MW-512 MS/MSD			GW			1155	1		X								01
MW-804			GW			1245	1	X							e je je		03
DUPLICATE 2		1	GW			1245	1	X			-						04
MW-804 MS/MSD		¥	GW			1245	1	x									03
	-		1967 - A. 1975 - 19			and the second	17										
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater	Rema	arks:			T					pi Flo		Temp Other		COC S Bottl	Seal P Signed Les ar	ple Receipt Ch resent/Intact /Accurate: rive intact: ttles used:	
DW - Drinking Water		oles retur PS Fe	dExCou	10000000000000000000000000000000000000	<u>Mrei</u>	racking#								Suffi VOA 2	loient Mero H	volume sent: <u>If Applicab</u> eadspace: on Correct/Che	
Relinquished by : (Signature)	1		Date:	/	1238 6	eeeived by: (Signa		<u>r</u>		Irip B	ank Rece	Ţ	ICL / MeoH BR	RAD S	Screen	<0.5 mR/hr:	2
Relinguished by : (Signature)			Date: 2/4/:	20		eceived by: (Signa ELLEX	iture)		Les States	Temp [. S-	+.1=1.1	SC Bottle	as Received:		ervatio	on required by Log	in: Date/Time
Relinquished by : (Signature)			Date:		Time: R	epeived for lab by	: (Signat	ure)		Date:	5-	Time	Son	Hold:			Condition: NCF OK

. Antonio se

ATTACHMENT 1-3 May 2020 Sampling Event Laboratory Report



ANALYTICAL REPORT

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1220387 05/20/2020 27213169.20 Evergy - Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Тс Ss Cn Sr ʹQc Gl AI Sc

Entire Report Reviewed By:

Jubb land

Jeff Carr Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

SDG: L1220387 DATE/TIME: 05/28/20 15:13 PAGE: 1 of 19

TABLE OF CONTENTS

*	
¹ Cp	
² Tc	
³ Ss	
⁴ Cn	
⁵Sr	
⁶ Qc	
⁷ Gl	
⁸ Al	

Sc

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
MW-504 L1220387-01	6
MW-505 L1220387-02	7
MW-506 L1220387-03	8
MW-510 L1220387-04	9
MW-512 L1220387-05	10
MW-601 L1220387-06	11
DUPLICATE 2 L1220387-07	12
Qc: Quality Control Summary	13
Gravimetric Analysis by Method 2540 C-2011	13
Wet Chemistry by Method 9056A	14
Metals (ICP) by Method 6010B	16
GI: Glossary of Terms	17
Al: Accreditations & Locations	18
Sc: Sample Chain of Custody	19

SDG: L1220387 DATE/TIME: 05/28/20 15:13

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

MW-504 L1220387-01 GW			Collected by G. Penaflor	Collected date/time 05/18/20 12:40	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Gravimetric Analysis by Method 2540 C-2011	WG1480143	1	05/22/20 18:17	05/23/20 02:50	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1480031	1	05/21/20 22:46	05/21/20 22:46	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1479057	1	05/22/20 22:22	05/23/20 14:09	CCE	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-505 L1220387-02 GW			G. Penaflor	05/18/20 11:50	05/20/20 08	:45
Aethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1480143	1	05/22/20 18:17	05/23/20 02:50	TH	Mt. Juliet, Ti
Net Chemistry by Method 9056A	WG1480031	1	05/21/20 23:20	05/21/20 23:20	ELN	Mt. Juliet, Ti
Ietals (ICP) by Method 6010B	WG1479057	1	05/22/20 22:22	05/23/20 14:17	CCE	Mt. Juliet, Th
			Collected by	Collected date/time	Received da	
MW-506 L1220387-03 GW			G. Penaflor	05/18/20 14:10	05/20/20 08	:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1480143	1	05/22/20 18:17	05/23/20 02:50	TH	Mt. Juliet, Tl
Net Chemistry by Method 9056A	WG1480031	1	05/21/20 23:37	05/21/20 23:37	ELN	Mt. Juliet, TI
Aretals (ICP) by Method 6010B	WG1479057	1	05/22/20 22:22	05/23/20 14:19	CCE	Mt. Juliet, TI
	Wornsoon	ļ	03/22/20 22.22	03/23/20 11:13	CCL	wit. Suilet, I
			Collected by	Collected date/time	Received da	te/time
MW-510 L1220387-04 GW			G. Penaflor	05/18/20 16:30	05/20/20 08	::45
<i>l</i> lethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1480143	1	05/22/20 18:17	05/23/20 02:50	TH	Mt. Juliet, TI
Net Chemistry by Method 9056A	WG1480031	1	05/21/20 23:54	05/21/20 23:54	ELN	Mt. Juliet, TI
Aetals (ICP) by Method 6010B	WG1479057	1	05/22/20 22:22	05/23/20 14:22	CCE	Mt. Juliet, T
			Collected by	Collected date/time	Received da	te/time
MW-512 L1220387-05 GW			G. Penaflor	05/18/20 16:55	05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1480143	1	05/22/20 18:17	05/23/20 02:50	TH	Mt. Juliet, T
Vet Chemistry by Method 9056A	WG1480031	1	05/22/20 00:11	05/22/20 00:11	ELN	Mt. Juliet, TI
Aetals (ICP) by Method 6010B	WG1479057	1	05/22/20 22:22	05/23/20 14:25	CCE	Mt. Juliet, Tl
			Collected by	Collected date/time	Received da	te/time
MW-601 L1220387-06 GW			G. Penaflor	05/18/20 15:15	05/20/20 08	:45
Nethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1480143	1	05/22/20 18:17	05/23/20 02:50	TH	Mt. Juliet, Ti
Net Chemistry by Method 9056A	WG1480031	1	05/22/20 00:28	05/22/20 00:28	ELN	Mt. Juliet, Tl
Metals (ICP) by Method 6010B	WG1479057	1	05/22/20 22:22	05/23/20 13:17	CCE	Mt. Juliet, TI

PROJECT: 27213169.20

SDG: L1220387 DATE/TIME: 05/28/20 15:13

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

			Collected by	Collected date/time	Received dat	te/time
DUPLICATE 2 L1220387-07 GW			G. Penaflor	05/18/20 15:20	05/20/20 08	:45
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Gravimetric Analysis by Method 2540 C-2011	WG1480143	1	05/22/20 18:17	05/23/20 02:50	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1480031	1	05/22/20 01:52	05/22/20 01:52	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1479057	1	05/22/20 22:22	05/23/20 14:27	CCE	Mt. Juliet, TN



*

Ср

SDG: L1220387

(

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jubb land

Jeff Carr Project Manager

Τс Ss Cn Sr Qc GI AI Sc

PROJECT: 27213169.20

SDG: L1220387 DATE/TIME: 05/28/20 15:13 PAGE: 5 of 19

SAMPLE RESULTS - 01 L1220387

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l		date / time		2
Dissolved Solids	205000		10000	1	05/23/2020 02:50	WG1480143	Tc

Wet Chemistry by Method 9056A

Collected date/time: 05/18/20 12:40

Wet Chemistry b	by Method 9056A	Ą					3
	Result	Qualifier	RDL	Dilution	Analysis	Batch	L
Analyte	ug/l		ug/l		date / time		4
Chloride	ND		1000	1	05/21/2020 22:46	<u>WG1480031</u>	
Fluoride	182		150	1	05/21/2020 22:46	WG1480031	5
Sulfate	34800		5000	1	05/21/2020 22:46	WG1480031	Ĩ

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	05/23/2020 14:09	WG1479057
Calcium	37200		1000	1	05/23/2020 14:09	WG1479057

SAMPLE RESULTS - 02 L1220387

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l	l	ug/l		date / time		2
Dissolved Solids	179000	1	10000	1	05/23/2020 02:50	WG1480143	ЪС

Wet Chemistry by Method 9056A

Wet Chemistry	by Method 9056A	Ą					³ Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		⁴ Cr
Chloride	1060		1000	1	05/21/2020 23:20	<u>WG1480031</u>	
Fluoride	202		150	1	05/21/2020 23:20	WG1480031	5
Sulfate	16300		5000	1	05/21/2020 23:20	WG1480031	ٌSr

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	05/23/2020 14:17	WG1479057
Calcium	30500		1000	1	05/23/2020 14:17	WG1479057

SAMPLE RESULTS - 03 L1220387

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch		Ср
Analyte	ug/l		ug/l		date / time		2	
Dissolved Solids	444000		10000	1	05/23/2020 02:50	<u>WG1480143</u>		Тс

Wet Chemistry by Method 9056A

Wet Chemistry I	by Method 9056A	Ą					³ Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		⁴ C
Chloride	7110		1000	1	05/21/2020 23:37	WG1480031	
Fluoride	308		150	1	05/21/2020 23:37	WG1480031	5
Sulfate	80000		5000	1	05/21/2020 23:37	WG1480031	Št

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	05/23/2020 14:19	WG1479057
Calcium	92700		1000	1	05/23/2020 14:19	WG1479057

SAMPLE RESULTS - 04 L1220387

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	3					Cn	
	Result	Qualifier RDI	. Dilution	Analysis	Batch	Ср	
Analyte	ug/l	ug/		date / time		2	i
Dissolved Solids	474000	100	00 1	05/23/2020 02:50	WG1480143	⁻ Tc	

Wet Chemistry by Method 9056A

Wet Chemistry b	by Method 90564	4					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Chloride	3300		1000	1	05/21/2020 23:54	WG1480031	
luoride	293		150	1	05/21/2020 23:54	<u>WG1480031</u>	
Sulfate	12300		5000	1	05/21/2020 23:54	WG1480031	

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	05/23/2020 14:22	WG1479057
Calcium	119000		1000	1	05/23/2020 14:22	WG1479057

SAMPLE RESULTS - 05 L1220387

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	 Ср	l
Analyte	ug/l		ug/l		date / time		2	i
Dissolved Solids	481000		10000	1	05/23/2020 02:50	WG1480143	Tc	

Wet Chemistry by Method 9056A

Collected date/time: 05/18/20 16:55

Wet Chemistry by	Method 9056/	4					³ Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		⁴ Cn
Chloride	7690		1000	1	05/22/2020 00:11	WG1480031	CII
Fluoride	286		150	1	05/22/2020 00:11	WG1480031	5
Sulfate	71600		5000	1	05/22/2020 00:11	WG1480031	Sr

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	05/23/2020 14:25	WG1479057
Calcium	110000		1000	1	05/23/2020 14:25	WG1479057

SAMPLE RESULTS - 06 L1220387

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср	1
Analyte	ug/l		ug/l		date / time		2	-
Dissolved Solids	396000		10000	1	05/23/2020 02:50	WG1480143	Tc	

Wet Chemistry by Method 9056A

Collected date/time: 05/18/20 15:15

Wet Chemistry I	by Method 9056A	4					3
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		4
Chloride	3130		1000	1	05/22/2020 00:28	<u>WG1480031</u>	
Fluoride	252		150	1	05/22/2020 00:28	WG1480031	5
Sulfate	9000		5000	1	05/22/2020 00:28	WG1480031	

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	05/23/2020 13:17	WG1479057
Calcium	99600		1000	1	05/23/2020 13:17	WG1479057

SAMPLE RESULTS - 07 L1220387

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

							l'Cn
	Resul	t Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l		date / time		2
Dissolved Solids	40300	00	10000	1	05/23/2020 02:50	WG1480143	⁻Tc

Wet Chemistry by Method 9056A

Wet Chemistry b	by Method 9056A	Ą					³ Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		4 Cr
Chloride	3120		1000	1	05/22/2020 01:52	<u>WG1480031</u>	
Fluoride	238		150	1	05/22/2020 01:52	<u>WG1480031</u>	5
Sulfate	9010		5000	1	05/22/2020 01:52	WG1480031	ٌSr

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	05/23/2020 14:27	WG1479057
Calcium	100000		1000	1	05/23/2020 14:27	WG1479057

WG1480143

Gravimetric Analysis by Method 2540 C-2011

QUALITY CONTROL SUMMARY <u>L1220387-01,02,03,04,05,06,07</u>

Τс

Ss

Cn

Sr

Qc

GI

Â

Sc

Method Blank (MB)

(MB) R3531327-1 05/23	3/20 02:50			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Dissolved Solids	U		2820	10000

L1220387-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1220387-07 05	5/23/20 02:50 • (DU	P) R3531327-	3 05/23/2	0 02:50		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	403000	400000	1	0.747		5

Laboratory Control Sample (LCS)

(LCS) R3531327-2 05	(LCS) R3531327-2 05/23/20 02:50						
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier		
Analyte	ug/l	ug/l	%	%			
Dissolved Solids	8800000	7790000	88.5	85.0-115			

SDG: L1220387 DATE/TIME: 05/28/20 15:13 PAGE: 13 of 19 Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY L1220387-01,02,03,04,05,06,07

Ср

⁴Cn

Sr

Qc

GI

Â

Sc

Method Blank (MB)

(MB) R3530803-1	05/21/20 21:55

(IVID) R5550605-1 05/2	1/20 21.55				
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	ug/l		ug/l	ug/l	Tc
Chloride	U		379	1000	
Fluoride	U		64.0	150	³ Ss
Sulfate	U		594	5000	

L1220387-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1220387-01 05/21/	20 22:46 • (DUP	P) R3530803-3	3 05/21/20	0 23:03		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	ND	ND	1	0.653		15
Fluoride	182	177	1	2.40		15
Sulfate	34800	34900	1	0.174		15

L1220408-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1220408-05 05/22/20 03:17 • (DUP) R3530803-6 05/22/20 03:34									
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits			
Analyte	ug/l	ug/l		%		%			
Chloride	7790	7850	1	0.817		15			
Fluoride	186	193	1	3.60		15			
Sulfate	46800	46700	1	0.0387		15			

Laboratory Control Sample (LCS)

(LCS) R3530803-2 05/21	.CS) R3530803-2 05/21/20 22:12								
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier				
Analyte	ug/l	ug/l	%	%					
Chloride	40000	39000	97.5	80.0-120					
Fluoride	8000	8140	102	80.0-120					
Sulfate	40000	39800	99.4	80.0-120					

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213169.20

SDG: L1220387

DATE/TIME: 05/28/20 15:13

PAGE: 14 of 19 Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY L1220387-01,02,03,04,05,06,07

L1220387-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220387-06 05/22/20 00:28 • (MS) R3530803-4 05/22/20 00:45 • (MSD) R3530803-5 05/22/20 01:35												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	3130	53300	53100	100	99.9	1	80.0-120			0.316	15
Fluoride	5000	252	5270	5240	100	99.7	1	80.0-120			0.602	15
Sulfate	50000	9000	59900	59400	102	101	1	80.0-120			0.795	15

L1220425-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1220425-02 05/22	/20 05:15 • (MS) R3530803-7	05/22/20 05	:32			
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	ug/l	ug/l	ug/l	%		%	
Chloride	50000	2160	51800	99.3	1	80.0-120	
Fluoride	5000	199	5180	99.6	1	80.0-120	
Sulfate	50000	21400	71500	100	1	80.0-120	

ACCOUNT:
SCS Engineers - KS

SDG: L1220387

DATE/TIME: 05/28/20 15:13 Sc

WG1479057

Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY

¹Cp ²Tc ³Ss

⁺Cn

GI

Method Blank (MB)

(MB) R3531525-1 05/23/2	20 13:12			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Boron	U		25.4	200
Calcium	U		389	1000

Laboratory Control Sample (LCS)

(LCS) R3531525-2 05/23	/20 13:14				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Boron	1000	1020	102	80.0-120	
Calcium	10000	10300	103	80.0-120	

L1220387-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

		())		(/ /						
(OS) L1220387-06 05/23/20 13:17 • (MS) R3531525-4 05/23/20 13:22 • (MSD) R3531525-5 05/23/20 13:24											 ⁸ Al		
	Spike Amount	Original Result	t MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%	9
Boron	1000	ND	1040	1050	99.7	100	1	75.0-125			0.413	20	Sc
Calcium	10000	99600	108000	109000	82.5	95.7	1	75.0-125			1.22	20	

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213169.20

SDG: L1220387 DATE/TIME: 05/28/20 15:13 PAGE: 16 of 19

GLOSSARY OF TERMS

*

Тс

ŚS

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

PROJECT: 27213169.20

SDG: L1220387 DATE/TIME: 05/28/20 15:13 PAGE: 17 of 19

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebras
Alaska	17-026	Nevada
Arizona	AZ0612	New Ha
Arkansas	88-0469	New Je
California	2932	New Me
Colorado	TN00003	New Yo
Connecticut	PH-0197	North C
Florida	E87487	North C
Georgia	NELAP	North C
Georgia ¹	923	North D
ldaho	TN00003	Ohio-V
Illinois	200008	Oklaho
Indiana	C-TN-01	Oregon
lowa	364	Pennsy
Kansas	E-10277	Rhode I
Kentucky ¹⁶	90010	South C
Kentucky ²	16	South D
Louisiana	AI30792	Tennes
Louisiana ¹	LA180010	Texas
Maine	TN0002	Texas ⁵
Maryland	324	Utah
Massachusetts	M-TN003	Vermon
Michigan	9958	Virginia
Minnesota	047-999-395	Washin
Mississippi	TN00003	West Vi
Missouri	340	Wiscons
Montana	CERT0086	Wyomir

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico 1	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee 14	2006
Texas	T104704245-18-15
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213169.20

L1220387

PAGE: 18 of 19

05/28/20 15:13

			Billing Information:					1978-11		F	nalvsis / Container / Preservative				(Chain of Custody Page of		
SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210 Report to: Jason Franks		Accounts Payable 8575 W. 110th Street Overland Park, KS 66210			Pres Chk	Pres	27							-	Nettorial Cantar for Testing 8 innovation			
		Email To: jfranks@scsengineers.com;jay.martin@eve												12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858				
Project Description: Evergy - Sibley Generating Station	concettedi							125mlHDPE-NoPres		NoPres					Phone: 800-767-5859 Fax: 615-758-5859			
hone: 913-681-0030	Client Project 27213169.		Lab Project # AQUAOPK			ject # OPKS-SIBLEY		MIHDI	ONH-					SDG # 12.20387 G200 Acctnum: AQUAOPKS				
G. Penafler	Site/Facility I	D#	P.O. #				t		HDPE									
collected by (signature):	Same D	The second se	Day	Quote # Date Results Needed				s (Cld, F, SO4)	6010 250mlHDPE-HNO3	250miHDPE-NoPres						Template: T166706 Prelogin: P769428 PM: 206 - Jeff Carr PB:		
Sample ID	Comp/Grab	Matrix *	Depth	Date		and the second	Cntrs	Anions	. Ca -	TDS 2	and the second		2.2				Shipped Via: Remarks Sample # (lab only	
WW-504	GRAB	GW	T	15/1	8/20	1240		X	X B	×	Caseer of						i. Internal	- 61
/W-505	070	GW		1-1-	0/20	1150	3	X	X	X						the Car		02
viW-506		GW				1410	3	X	x	x								3
/W-510		GW	5			1630	3	X	X	X					14			04
MW-512		GW				1655	3	X	X	X	1999				1	10400		05
иW-601		GW		+		1515	and the second second	X	x	X								06
DUPLICATE 2		GW				1520	and some states	X	X	X	19		1775-72					07
60 MS / MSD	V	GW				1525		x	X	X						erenter de la companya de la company	and a second	ec.
									1									
		e en	10213			Sec. 1					1. Section		1.1			and and a		
SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater	Remarks:				ie Ve Reten			AL AND			pH Flow		Temp Other		COC Seal COC Signe Bottles a Correct h	d/Accurate rrive inta ottles use	tact: <u>-</u> : ct: d:	
DW - Drinking Water OT - Other OT - Other Tracking # Tracking # Tracking #												distant.	Sufficient volume sent: <u>Y</u> N <u>If Applicable</u> VOA Zero Headspace: Y N					
Relinquished by : (Signature)		ate: Time: Received by: (Signature)				ture)	с) 5-19-20 Trip Blank Received: Yes (Ng) HCL / MeoH 1357 Твк							Preservation Correct/Checked: RAD Screen <0.5 mR/hr: Y _N				
Relinquished by : (Signature)		Date:	Time: Received by: (Signat			ture)				TentbuPA6 °C Bottles Received: 2.6-,1=2.5 24			ed:	If preservation required by Login: Date/Time				
Relinquished by : (Signature)	nquished by : (Signature) Date: Time: Received for lab by: ((Signature)				Date: Time: 5/10/10 8:45				Hold: Condition: NCF / OK						



ANALYTICAL REPORT

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1220404 05/20/2020 27213168.20 Evergy - Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Тс Ss Cn Sr ʹQc Gl AI Sc

Entire Report Reviewed By:

Jubb land

Jeff Carr Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213168.20

SDG: L1220404 DATE/TIME: 05/28/20 08:55

TABLE OF CONTENTS

E.	*
	¹ Cp
	² Tc
	³ Ss
	⁴ Cn
	⁵ Sr
	⁶ Qc
	⁷ Gl
	⁸ Al
	⁹ Sc

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
801 L1220404-01	6
802 L1220404-02	7
803 L1220404-03	8
804 L1220404-04	9
805 L1220404-05	10
806R L1220404-06	11
504 L1220404-07	12
505 L1220404-08	13
506 L1220404-09	14
510 L1220404-10	15
512 L1220404-11	16
601 L1220404-12	17
DUPLICATE 2 L1220404-13	18
Qc: Quality Control Summary	19
Mercury by Method 7470A	19
Metals (ICP) by Method 6010B	20
Metals (ICPMS) by Method 6020	21
GI: Glossary of Terms	22
Al: Accreditations & Locations	23
Sc: Sample Chain of Custody	24

PROJECT: 27213168.20

SDG: L1220404

DATE/TIME: 05/28/20 08:55 PAGE: 2 of 25

ONE LAB. NATIONWIDE.

	SAMPLES	SAMPLE SUMMARY						
801 L1220404-01 GW			Collected by G. Penaflor	Collected date/time 05/18/20 13:15	Received da 05/20/20 08			
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location		
Mercury by Method 7470A	WG1479741	1	05/20/20 21:00	05/21/20 07:57	ABL	Mt. Juliet, TN		
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:19	EL	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 00:07	LD	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 01:02	LD	Mt. Juliet, TN		
802 L1220404-02 GW			Collected by G. Penaflor	Collected date/time 05/18/20 12:10	Received date/time 05/20/20 08:45			
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location		
Mercury by Method 7470A	WG1479741	1	05/20/20 21:00	05/21/20 07:59	ABL	Mt. Juliet, TN		
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:21	EL	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 00:11	LD	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 01:06	LD	Mt. Juliet, TN		
			Collected by G. Penaflor	Collected date/time 05/18/20 15:05	Received da 05/20/20 08			
803 L1220404-03 GW								
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location		
Mercury by Method 7470A	WG1479741	1	05/20/20 21:00	05/21/20 08:01	ABL	Mt. Juliet, TN		
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:24	EL	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 00:14	LD	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 01:09	LD	Mt. Juliet, TN		
804 L1220404-04 GW			Collected by G. Penaflor	Collected date/time 05/18/20 16:35	Received da 05/20/20 08			
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location		
Mercury by Method 7470A	WG1479741	1	05/20/20 21:00	05/21/20 08:03	ABL	Mt. Juliet, TN		
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:26	EL	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 00:17	LD	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 01:13	LD	Mt. Juliet, TN		
			Collected by	Collected date/time	Received da	ite/time		
805 L1220404-05 GW			G. Penaflor	05/18/20 17:40	05/20/20 08	3:45		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location		
Mercury by Method 7470A	WG1479741	1	05/20/20 21:00	05/21/20 08:09	ABL	Mt. Juliet, TN		
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:34	EL	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 00:20	LD	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 01:16	LD	Mt. Juliet, TN		
			Collected by	Collected date/time	Received da	te/time		
806R L1220404-06 GW			G. Penaflor	05/18/20 18:00	05/20/20 08	3:45		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location		
Mercury by Method 7470A	WG1479741	1	05/20/20 21:00	05/21/20 08:11	ABL	Mt. Juliet, TN		
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:37	EL	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 00:24	LD	Mt. Juliet, TN		
Metals (ICPMS) by Method 6020	WG1480567	1	05/24/20 19:41	05/25/20 01:20	LD	Mt. Juliet, TN		
			CD C	DAT				

PROJECT:

27213168.20

ACCOUNT:

SCS Engineers - KS

⁵Sr ⁶Qc ⁷Gl ⁸Al ⁹Sc

*

Ср

Тс

Ss

Cn

DATE/TIME:

05/28/20 08:55

SDG:

L1220404

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

504 L1220404-07 GW			Collected by G. Penaflor	Collected date/time 05/18/20 12:50	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:39	EL	Mt. Juliet, TN
505 L1220404-08 GW			Collected by G. Penaflor	Collected date/time 05/18/20 11:50	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:42	EL	Mt. Juliet, TN
506 L1220404-09 GW			Collected by G. Penaflor	Collected date/time 05/18/20 14:10	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:45	EL	Mt. Juliet, TN
510 L1220404-10 GW			Collected by G. Penaflor	Collected date/time 05/18/20 16:30	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:47	EL	Mt. Juliet, TN
512 L1220404-11 GW			Collected by G. Penaflor	Collected date/time 05/18/20 16:55	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:50	EL	Mt. Juliet, TN
601 L1220404-12 GW			Collected by G. Penaflor	Collected date/time 05/18/20 15:15	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:08	EL	Mt. Juliet, TN
DUPLICATE 2 L1220404-13 GW			Collected by G. Penaflor	Collected date/time 05/18/20 15:20	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		

PROJECT: 27213168.20

SDG: L1220404 DATE/TIME: 05/28/20 08:55

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jubb land

Jeff Carr Project Manager

Τс Ss Cn Sr Qc GI AI Sc

PROJECT: 27213168.20

SDG: L1220404 DATE/TIME: 05/28/20 08:55 PAGE: 5 of 25

Collected date/time: 05/18/20 13:15

SAMPLE RESULTS - 01 L1220404

Mercury by Method 7470A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	CP
Analyte	ug/l		ug/l		date / time		2
Mercury	ND		0.200	1	05/21/2020 07:57	WG1479741	Tc

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Barium	112		5.00	1	05/27/2020 12:19	WG1480572
Chromium	ND		10.0	1	05/27/2020 12:19	WG1480572
Cobalt	ND		10.0	1	05/27/2020 12:19	WG1480572
Lithium	ND		15.0	1	05/27/2020 12:19	WG1480572
Molybdenum	ND		5.00	1	05/27/2020 12:19	WG1480572

Metals (ICPMS) by Method 6020

Metals (ICPMS) k	by Method 6020						
	Result	Qualifier	RDL	Dilution	Analysis	Batch	GI
Analyte	ug/l		ug/l		date / time		8
Antimony	ND		4.00	1	05/25/2020 00:07	WG1480567	Ă
Arsenic	ND		2.00	1	05/25/2020 00:07	WG1480567	
Beryllium	ND		2.00	1	05/25/2020 01:02	WG1480567	°Sc
Cadmium	ND		1.00	1	05/25/2020 00:07	WG1480567	50
Lead	ND		5.00	1	05/25/2020 00:07	WG1480567	
Selenium	ND		2.00	1	05/25/2020 00:07	WG1480567	
Thallium	ND		2.00	1	05/25/2020 00:07	WG1480567	

Collected date/time: 05/18/20 12:10

SAMPLE RESULTS - 02

*

Gl

AI

Sc

Mercury by Method 7470A

Result	Qualifier	RDL	Dilution	Analysis	Batch	
ug/l		ug/l		date / time		
ND		0.200	1	05/21/2020 07:59	WG1479741	2
	3	ug/l	ug/l ug/l	ug/l ug/l	ug/l ug/l date / time	ug/l ug/l date / time

S Result Qualifier RDL Dilution Analysis Batch Analyte ug/l date / time ug/l Cn WG1480572 Barium 163 5.00 1 05/27/2020 12:21 WG1480572 ND 10.0 05/27/2020 12:21 Chromium 1 Cobalt ND 10.0 1 05/27/2020 12:21 WG1480572 Lithium ND 15.0 1 05/27/2020 12:21 WG1480572 Molybdenum ND 5.00 1 05/27/2020 12:21 WG1480572 Qc Metals (ICPMS) by Method 6020

Qualifier RDL Dilution Result Analysis Batch Analyte ug/l ug/l date / time Antimony ND 4.00 1 05/25/2020 00:11 WG1480567 2.18 WG1480567 Arsenic 2.00 05/25/2020 00:11 1 ND 2.00 1 05/25/2020 01:06 WG1480567 Beryllium WG1480567 ND 1.00 1 05/25/2020 00:11 Cadmium ND WG1480567 Lead 5.00 1 05/25/2020 00:11 WG1480567 Selenium ND 2.00 1 05/25/2020 00:11 Thallium ND 2.00 05/25/2020 00:11 WG1480567 1

Collected date/time: 05/18/20 15:05

SAMPLE RESULTS - 03 L1220404

Mercury by Method 7470A

wich cury by wic							1 C 1
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l		date / time		2
Mercury	ND		0.200	1	05/21/2020 08:01	<u>WG1479741</u>	Tc
Metals (ICP) by	Method 6010B						³ Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		^₄ Cn
Barium	119		5.00	1	05/27/2020 12:24	WG1480572	
Chromium	ND		10.0	1	05/27/2020 12:24	WG1480572	5
Cobalt	ND		10.0	1	05/27/2020 12:24	WG1480572	⁵Sr
Lithium	ND		15.0	1	05/27/2020 12:24	WG1480572	
Molybdenum	ND		5.00	1	05/27/2020 12:24	<u>WG1480572</u>	⁶ Qc
Metals (ICPMS) by Metho	od 6020						- ⁷ GI
	Result	Qualifier	RDL	Dilution	Analysis	Batch	G

	Result	Qualifier	RDL	Dilution	Analysis	Batch	GI
Analyte	ug/l		ug/l		date / time		8
Antimony	ND		4.00	1	05/25/2020 00:14	WG1480567	Ă١
Arsenic	2.46		2.00	1	05/25/2020 00:14	WG1480567	
Beryllium	ND		2.00	1	05/25/2020 01:09	WG1480567	°Sc
Cadmium	ND		1.00	1	05/25/2020 00:14	WG1480567	50
Lead	ND		5.00	1	05/25/2020 00:14	WG1480567	
Selenium	ND		2.00	1	05/25/2020 00:14	WG1480567	
Thallium	ND		2.00	1	05/25/2020 00:14	WG1480567	

Collected date/time: 05/18/20 16:35

SAMPLE RESULTS - 04 L1220404



Mercury by Method 7470A

mercury by met	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Mercury	ND		0.200	1	05/21/2020 08:03	WG1479741	
Metals (ICP) by	Method 6010B						

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		⁴ C
Barium	477		5.00	1	05/27/2020 12:26	WG1480572	
Chromium	ND		10.0	1	05/27/2020 12:26	WG1480572	5
Cobalt	ND		10.0	1	05/27/2020 12:26	WG1480572	ँSr
Lithium	21.0		15.0	1	05/27/2020 12:26	WG1480572	
Molybdenum	ND		5.00	1	05/27/2020 12:26	WG1480572	⁶ Q

Metals (ICPMS) by Method 6020

SDG: L1220404

Collected date/time: 05/18/20 17:40

SAMPLE RESULTS - 05

*

Mercury by Method 7470A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Mercury	ND		0.200	1	05/21/2020 08:09	WG1479741	
Metals (ICP) by N	Vethod 6010B						
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Barium	143		5.00	1	05/27/2020 12:34	WG1480572	
Chromium	ND		10.0	1	05/27/2020 12:34	WG1480572	
Cobalt	ND		10.0	1	05/27/2020 12:34	WG1480572	
Lithium	ND		15.0	1	05/27/2020 12:34	WG1480572	
Molybdenum	ND		5.00	1	05/27/2020 12:34	WG1480572	
Metals (ICPMS) k	by Method 6020						
, , ,	Posult	Qualifier	וחמ	Dilution	Analysis	Patch	

	Result	Qualifier	RDL	Dilution	Analysis	Batch	G
Analyte	ug/l		ug/l		date / time		8
Antimony	ND		4.00	1	05/25/2020 00:20	WG1480567	Ă
Arsenic	ND		2.00	1	05/25/2020 00:20	WG1480567	
Beryllium	ND		2.00	1	05/25/2020 01:16	WG1480567	°Sc
Cadmium	ND		1.00	1	05/25/2020 00:20	WG1480567	50
Lead	ND		5.00	1	05/25/2020 00:20	WG1480567	
Selenium	ND		2.00	1	05/25/2020 00:20	WG1480567	
Thallium	ND		2.00	1	05/25/2020 00:20	WG1480567	

Collected date/time: 05/18/20 18:00

SAMPLE RESULTS - 06 L1220404



Mercury by Method 7470A

	, ,	Result	Qualifier	RDL	Dilution	Analysis	Batch	'Ср
Analyte		ug/l		ug/l		date / time		2
Mercury		ND		0.200	1	05/21/2020 08:11	WG1479741	Tc

Metals (ICP) by Method 6010B

Metals (ICP) by Method 6010B							
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		⁴ Cn
Barium	71.4		5.00	1	05/27/2020 12:37	WG1480572	
Chromium	ND		10.0	1	05/27/2020 12:37	WG1480572	5
Cobalt	ND		10.0	1	05/27/2020 12:37	WG1480572	ĭSr
Lithium	16.3		15.0	1	05/27/2020 12:37	WG1480572	
Molybdenum	2160		5.00	1	05/27/2020 12:37	<u>WG1480572</u>	⁶ Qo

Metals (ICPMS) by Method 6020

vietais (ICPIVIS) I	by Method 6020						
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
analyte	ug/l		ug/l		date / time		
Intimony	ND		4.00	1	05/25/2020 00:24	WG1480567	
Arsenic	5.55		2.00	1	05/25/2020 00:24	WG1480567	
Beryllium	ND		2.00	1	05/25/2020 01:20	WG1480567	
Cadmium	ND		1.00	1	05/25/2020 00:24	WG1480567	
ead	ND		5.00	1	05/25/2020 00:24	WG1480567	
Selenium	ND		2.00	1	05/25/2020 00:24	WG1480567	
hallium	ND		2.00	1	05/25/2020 00:24	WG1480567	

Collected date/time: 05/18/20 12:50

SAMPLE RESULTS - 07



Ср

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		2
Lithium	ND		15.0	1	05/27/2020 12:39	WG1480572	Tc
Molybdenum	ND		5.00	1	05/27/2020 12:39	WG1480572	

³ Ss
⁴ Cn
⁵Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SDG: L1220404

DATE/TIME: 05/28/20 08:55

Collected date/time: 05/18/20 11:50

SAMPLE RESULTS - 08 L1220404



Ср

Cn

Qc

GI

Â

Sc

Metals (ICP) by Method 6010B

							I Cn /
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		2
Lithium	ND		15.0	1	05/27/2020 12:42	WG1480572	Tc
Molybdenum	ND		5.00	1	05/27/2020 12:42	WG1480572	
							³Ss

Collected date/time: 05/18/20 14:10

SAMPLE RESULTS - 09



Metals (ICP) by Method 6010B

							1	Col
	Result	Qualifier	RDL	Dilution	Analysis	Batch		Ср
Analyte	ug/l		ug/l		date / time		2	2
Lithium	ND		15.0	1	05/27/2020 12:45	WG1480572		Tc
Molybdenum	ND		5.00	1	05/27/2020 12:45	WG1480572	L	

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213168.20

SDG: L1220404 DATE/TIME: 05/28/20 08:55 PAGE: 14 of 25

SAMPLE RESULTS - 10

¥

Ср

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch	— Ср
Analyte	ug/l		ug/l		date / time		2
Lithium	ND		15.0	1	05/27/2020 12:47	WG1480572	Tc
Molybdenum	ND		5.00	1	05/27/2020 12:47	WG1480572	

³ Ss
⁴ Cn
⁵Sr
⁶ Qc
⁷ Gl
⁸ AI
⁹ Sc

SAMPLE RESULTS - 11



Ср

Тс

Metals (ICP) by Method 6010B

	D !!	0 110	DDI	D:1 .::		
	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Lithium	ND		15.0	1	05/27/2020 12:50	WG1480572
Molybdenum	ND		5.00	1	05/27/2020 12:50	WG1480572

ACCOUNT:									
SCS Engineers - KS									

PROJECT: 27213168.20

SDG: L1220404 DATE/TIME: 05/28/20 08:55 PAGE: 16 of 25

SAMPLE RESULTS - 12 L1220404



Ср

Ss

Cn

Qc

GI

Â

Sc

Metals (ICP) by Method 6010B

							 Cn	1
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp	L
Analyte	ug/l		ug/l		date / time		 2	i.
Lithium	ND		15.0	1	05/27/2020 12:08	WG1480572	Tc	L
Molybdenum	ND		5.00	1	05/27/2020 12:08	WG1480572		1

SAMPLE RESULTS - 13



Ср

Metals (ICP) by Method 6010B

	Result	Qualifier RDL	Dilution	Analysis	Batch
Analyte	ug/l	ug/l		date / time	
Lithium	ND	15.0	1	05/27/2020 12:53	WG1480572
Molybdenum	ND	5.00	1	05/27/2020 12:53	WG1480572

PROJECT: 27213168.20

SDG: L1220404 DATE/TIME: 05/28/20 08:55 PAGE: 18 of 25

WG1479741

Mercury by Method 7470A

QUALITY CONTROL SUMMARY

Тс

Ss

Cn

Sr

ິQc

GI

Â

Sc

Method Blank (MB)

(MB) R3530267-1 05/21/20 07:21								
	MB Result	MB Qualifier	MB MDL	MB RDL				
Analyte	ug/l		ug/l	ug/l				
Mercury	U		0.100	0.200				

Laboratory Control Sample (LCS)

(LCS) R3530267-2 05/21/20 07:23										
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier					
Analyte	ug/l	ug/l	%	%						
Mercury	3.00	3.02	101	80.0-120						

PROJECT: 27213168.20

SDG: L1220404 DATE/TIME: 05/28/20 08:55 PAGE: 19 of 25 Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY <u>L1220404-01,02,03,04,05,06,07,08,09,10,11,12,13</u>

()				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Barium	U		0.895	5.00
Chromium	U		5.00	10.0
Cobalt	U		0.807	10.0
Lithium	U		5.74	15.0
Molybdenum	U		1.04	5.00

Laboratory Control Sample (LCS)

(LCS) R3532351-2 0	S) R3532351-2 05/27/20 12:06									
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier					
Analyte	ug/l	ug/l	%	%						
Barium	1000	987	98.7	80.0-120						
Chromium	1000	945	94.5	80.0-120						
Cobalt	1000	953	95.3	80.0-120						
Lithium	1000	953	95.3	80.0-120						
Molybdenum	1000	986	98.6	80.0-120						

L1220404-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220404-12 05/27/20 12:08 • (MS) R3532351-4 05/27/20 12:13 • (MSD) R3532351-5 05/27/20 12:16												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	328	1290	1300	96.3	97.3	1	75.0-125			0.751	20
Chromium	1000	ND	939	953	93.9	95.3	1	75.0-125			1.40	20
Cobalt	1000	ND	961	972	96.1	97.2	1	75.0-125			1.15	20
Lithium	1000	ND	962	977	95.4	97.0	1	75.0-125			1.58	20
Molybdenum	1000	ND	990	998	98.8	99.7	1	75.0-125			0.822	20

Тс

Ss

Cn

Sr

[°]Qc

GI

AI

Sc

Metals (ICPMS) by Method 6020

QUALITY CONTROL SUMMARY

(MB) R3531397-1	05/24/20 23:01

(0/2 1/20 20:01				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	ug/l		ug/l	ug/l	
Antimony	U		1.32	4.00	
Arsenic	U		0.735	2.00	
Beryllium	U		0.454	2.00	
Cadmium	U		0.478	1.00	
Lead	U		2.49	5.00	
Selenium	U		0.657	2.00	
Thallium	U		0.460	2.00	

Laboratory Control Sample (LCS)

(LCS) R3531397-2 05/	/24/20 23:04					7
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	Í GI
Analyte	ug/l	ug/l	%	%		
Antimony	50.0	46.7	93.3	80.0-120		8
Arsenic	50.0	46.7	93.4	80.0-120		
Beryllium	50.0	41.1	82.2	80.0-120		9
Cadmium	50.0	48.7	97.5	80.0-120		Sc
Lead	50.0	45.5	90.9	80.0-120		
Selenium	50.0	48.4	96.8	80.0-120		
Thallium	50.0	45.6	91.2	80.0-120		

DATE/TIME: 05/28/20 08:55 PAGE: 21 of 25



Тс

Ss

Cn

Sr

Qc

GLOSSARY OF TERMS

₩

Тс

ŚS

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

PROJECT: 27213168.20

SDG: L1220404 DATE/TIME: 05/28/20 08:55

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebras
Alaska	17-026	Nevada
Arizona	AZ0612	New H
Arkansas	88-0469	New Je
California	2932	New M
Colorado	TN00003	New Y
Connecticut	PH-0197	North (
Florida	E87487	North (
Georgia	NELAP	North (
Georgia ¹	923	North I
Idaho	TN00003	Ohio-V
Illinois	200008	Oklaho
Indiana	C-TN-01	Oregor
lowa	364	Pennsy
Kansas	E-10277	Rhode
Kentucky ¹⁶	90010	South
Kentucky ²	16	South
Louisiana	AI30792	Tennes
Louisiana ¹	LA180010	Texas
Maine	TN0002	Texas
Maryland	324	Utah
Massachusetts	M-TN003	Vermo
Michigan	9958	Virginia
Minnesota	047-999-395	Washir
Mississippi	TN00003	West V
Missouri	340	Wiscon
Montana	CERT0086	Wyomi

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee ^{1 4}	2006
Texas	T104704245-18-15
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213168.20

L1220404

PAGE: 23 of 25

05/28/20 08:55

		PRACE.	Billing Infor	mation:					Analysis / Container / Preservative Chain of C						ustody	Page of 😹			
SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210		Accounts Payable 8575 W. 110th Street Overland Park, KS 66210						h								Pre	2 ace A	Nalytical [*] er for Testing 8 innovel	
Report to: Jason Franks Project Description: Evergy - Sibley Generating Station Collected:			Email To: jfranks@scsengineers.com;jay.martin@eve						03								12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858		
		Collected:	Sibley			Please Ci PT MT	rcle: T Eī	03	E-HNC								Phone: 800- Fax: 615-758	8-5859	
Phone: 913-681-0030	Client Project # 27213168.20			Lab Proj AQUA	iect # OPKS-SI	IBLEY		250miHDPE-HNO3	250miHDPE-HNO3								SDG #	12 2 520	-6464 1
Collected by (print): G. Pen 9 Flor	Site/Facility ID)#		P.O. #				MIHOP									Acctnum:		
Collected by (signature):		10 Da	Day	Quote	# te Results Std	Needed	No. of	- 6010	Is - CCR AP IV								Template Prelogin: PM: 206 - PB:	P770 Jeff Ca	370
Sample ID	Comp/Grab	Matrix *	Depth	Di	ate	Time	Cntrs	Mo	etals					The second		Section	Shipped V Remar		Sample # (lab only
01 02 03		GW GW GW					10	3	X X	7									
701 702 703 704 801	CARAB	GW GW GW GW		5/6	8/20	1315			X X X X X	7									
The second s	GRAB	GW GW GW GW		5/12	8/20	13/5 1210			X X X X	7									
802	GRAB			5/R	8/20	13/5 1210 1505			x x x x	7									n
802 803	GRAB	GW		5/12	8/20	13/5 1210 1505 1635			X X X X X	7									02 03
802 803 804	GRAB	GW GW		5/R	8/20	13/5 1210 1505 16 3 5			× , × , × , × , × , × , × , × , × , × ,	7									02 03 04
802 803 804 805	GRAB	GW GW GW		5/13	8/20	1635			× × × × × × × × × × × ×										02 03 04 05
802 803 804 805 806R	GRAB Remarks:CCR AP	GW GW GW GW	etals-Ba,Cr			1635 1740 1800) 1		X X X X X X X X X X X X X	7						Samp			- 0 02 03 04 05 06 cklist
802 803 804 805 806R * Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay	CMAB A Remarks:CCR AP metals - Hg	GW GW GW GW	etals-Ba,Cr			1635 1740 1800) 1		X X X X X X X X X X X X X	70	pH		Temp		COC S Bottl	eal Pr igned/ es arr	esent/In Accurate ive intac	tact: : ct:	
802 803 804 805 806R * Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water		GW GW GW GW GW IV 6010 M	etals-Ba,Cr			16 3 5 1740 1800 metals-Sb,4) 1		X X X X X X X X X X X X X	7			-168 · · ·		COE S Bottl Corre Suffi VOA Z	eal Pr igned/ es arr ct bot cient ero He	esent/Int Accurate ive intac tles used volume se <u>If Appl</u> . adspace;	tact: : ct: d; ent: <u>icable</u>	
802 803 804 805 806R * Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other Relinguished by : (Signature)	metals - Hg Samples returned UPS FedEx	GW GW GW GW GW IV 6010 M	Time	,Co,Li,M	lo 6020 I	16 3 5 1740 1800 metals-Sb,4) 1 As,Be,(Cd,Pb,S	X X X X X X X X X X Se,TI 74			Receive	Other d: Yes (4 HCL /		COC S Bottl Corre Suffi VOA Z Prese	eal Pr igned/ es arr ct bot cient ero He rvatio	esent/Int Accurate ive intac tles usec volume se <u>If Appl</u>	tact: : ct: d: ent: <u>icable</u> t/Chec	
802 803 804 805 806R * Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other	metals - Hg Samples returned UPSFedEx LuL	GW GW GW GW GW VIV 6010 M	Time	,co,U,M	o 6020 r Trackin Refere	1635 1740 1800 metals-Sb,4) 1 As,Be,(ture)	Cd,Pb,S	X X X X X X X X X X X X X	2	Flow_	°C	Other d: Yes / HCL / TBR Bottles Re	MeoH .	COC S Bottl Corre Suffi VOA Z Prese RAD S	eal Pr igned/ es arr ct bot cient ero He rvatio creen	esent/Int Accurate ive intac tles used volume se <u>If Appl</u> adspace: n Correct <0.5 mR/)	<pre>tact: ct: d; ent: icable t/Chec hr:</pre>	

	i de la de			Billing Infor	mation:	(1) (1) (1)	Т			Analysis /	/ Containe	r / Preserva	ative			Chain of Custody	Page 2 of
SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210			8575 W.	s Payable 110th Stre I Park, KS 6		Pres Chk	K								Pace	Analytical* inner for Testing 3 innovat	
Report to: Jason Franks	- 20			Email To: jfranks@sc	sengineers.co	m;jay.martin@e	vergy.c		3							12065 Lebanon Rd Mount Juliet, TN 3 Phone: 615-758-58	7122
Project Description: Evergy - Sibley Generating Station			City/State Collected:	Sibley	,mo	Please C PT MT		8	DNH-							Phone: 800-767-58 Fax: 615-758-5859	Contract Reserved
Phone: 913-681-0030 Client Project # 27213168.20				Lab Project			E-HNO	250mlHDPE-HNO3							SDG # 12 Table #	20404	
Collected by (print): G. Pengflor Collected by (signature): Collected by			1#		P.O. #			nHDF								Acctnum: AQ	UAOPKS
Collected by (signature):	RI		10 Da	1 Protocollide	Quote # Date R	esults Needed	No. of	Li, Mo - 6010 250mHDPE-HNO3	s - CCR AP IV							Template: T16 Prelogin: P77 PM: 206 - Jeff PB:	0370
Sample ID	Comp	o/Grab	Matrix *	Depth	Date	Time	Cr trs	J, Mo	Metals				Edu-			Shipped Via: Remarks	Sample # (lab only
504	60	AB	GW	1	5/18/	12.50) 1	X		157							07
505	1	17-7E-	GW	a dana da seria	l'i	1150	0 1	X									08
506			GW	4-17-12 		1410) 1	X					- The			in the second	09
510			GW	and the		1630) 1	X								Service of	10
112			GW		Page - C. G.	1655	5 1	X		1.10-		117			200		11
i01			GW	No. St. Comes		15/5	1	x		1997			279			a and a surger	12
601 MS/MSD			GW		4.1.114	152	5 1	X		18					and all	T MERCAR ONLY	12
DUPLICATE 2		1	GW	126	V	1520	COLUMN STREET, STREET, ST.	x				-2-1		3		1	13
		37.			112.70	1.29							1 1919			- Stie	
			19 ⁹⁴ - 1												1		
	Remarks: netals - H		IV 6010 M	etals-Ba,Cr	,Co,Li,Mo 6	020 metals-Sb,	As,Be,C	d,Pb,S	e,TI 7470	pH Flow	1.83	Temp Other		coc s Bottl	eal Pr igned/ es arr	le Receipt Ch esent/Intact Accurate: ive intact:	
NAU Drinking Water	Samples re UPS		via: Courier		Tr	acking.#								Suffi	cient	tles used: volume sent: <u>If Applicab</u> adspace:	
Relinquished by : (Signature)	h_	Dat 5	te: /19/20	Time	357 R	ceived by: (Signa	ture)	51	920	Trìp Blan	ik Receive	d: Yes (N HCL/ TBR	a suggest of the second s	Prese	rvatio	n Correct/Ch <0.5 mR/hr:	ecked: $\boxed{\frac{Y}{Y}}_{1}$
Relinquished by : (Signature)		Dat	te:	Time	22	ceived by: (Signa				11000pf 2.6-	1= 2.	Bottles Rec	reived:	If pres	ervation	required by Log	gin: Date/Time
Relinquished by : (Signature)		Dat	te:	Time	RI RI	ceived for lab by	: (Signat	ure)		Date:	0/10	Time:	15	Hold:			Condition: NCF / OK



ANALYTICAL REPORT

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1220442 05/20/2020 27213167.20 Evergy - Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Entire Report Reviewed By:

tidson

Donna Eidson Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213167.20

SDG: L1220442 DATE/TIME: 06/18/20 15:34

PAGE: 1 of 25

Cp ²Tc ³Ss ⁴Cn ⁵Sr ⁶Qc ⁷Gl ⁸Al ⁹Sc

TABLE OF CONTENTS

TIONWIDE.	*
	¹ Cp
	² Tc
	³ Ss
	⁴ Cn
	⁵ Sr
	⁶ Qc
	⁷ Gl
	⁸ Al
	⁹ Sc

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	6
Sr: Sample Results	7
801 L1220442-01	7
802 L1220442-02	8
803 L1220442-03	9
804 L1220442-04	10
805 L1220442-05	11
806R L1220442-06	12
DUPLICATE 2 L1220442-07	13
504 L1220442-08	14
505 L1220442-09	15
506 L1220442-10	16
510 L1220442-11	17
512 L1220442-12	18
601 L1220442-13	19
Qc: Quality Control Summary	20
Radiochemistry by Method 904	20
Radiochemistry by Method SM7500Ra B M	21
GI: Glossary of Terms	22
Al: Accreditations & Locations	23
Sc: Sample Chain of Custody	24

SDG: L1220442 DATE/TIME: 06/18/20 15:34

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

801 L1220442-01 Non-Potable Water			Collected by G. Penaflor	Collected date/time 05/18/20 13:15	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	
802 L1220442-02 Non-Potable Water			G. Penaflor	05/18/20 12:10	05/20/20 08	8:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN
803 L1220442-03 Non-Potable Water			Collected by G. Penaflor	Collected date/time 05/18/20 15:05	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN
			Collected by G. Penaflor	Collected date/time 05/18/20 16:35	Received da 05/20/20 08	
804 L1220442-04 Non-Potable Water			G. Pelialioi	05/16/20 10.35	05/20/20 08	0.40
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN
			Collected by	Collected date/time		
805 L1220442-05 Non-Potable Water			G. Penaflor	05/18/20 17:40	05/20/20 08	3:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	
806R L1220442-06 Non-Potable Water			G. Penaflor	05/18/20 18:00	05/20/20 08	3:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN

PROJECT: 27213167.20

SDG: L1220442 DATE/TIME: 06/18/20 15:34

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

SA SA	IVIPLE 3		ЛАКТ		0.12.2	AD. NATION
DUPLICATE 2 L1220442-07 Non-Potable Water			Collected by G. Penaflor	Collected date/time 05/18/20 15:20	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN
504 L1220442-08 Non-Potable Water			Collected by G. Penaflor	Collected date/time 05/18/20 12:40	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283 WG1486283	1 1	06/04/20 09:38 06/04/20 09:38	06/15/20 09:30	JMR RGT	Mt. Juliet, TN Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	I	06/04/20 09:38	06/05/20 15:28	RGI	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
505 L1220442-09 Non-Potable Water			G. Penaflor	05/18/20 11:50	05/20/20 08	3:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN
506 L1220442-10 Non-Potable Water			Collected by G. Penaflor	Collected date/time 05/18/20 14:10	Received da 05/20/20 08	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 19:44	RGT	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
510 L1220442-11 Non-Potable Water			G. Penaflor	05/18/20 16:30	05/20/20 08	3:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 19:44	RGT	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	
512 L1220442-12 Non-Potable Water			G. Penaflor	05/18/20 16:55	05/20/20 08	3:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 13:40	JMR	Mt. Juliet, TN
5 5		1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN

PROJECT: 27213167.20

SDG: L1220442 DATE/TIME: 06/18/20 15:34 **PAGE**: 4 of 25

ONE LAB. NATIONWIDE.

			Collected by	Collected date/time	Received dat	e/time
601 L1220442-13 Non-Potable Water			G. Penaflor	05/18/20 15:15	05/20/20 08	:45
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Radiochemistry by Method 904	WG1482009	1	05/26/20 12:34	06/15/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1486283	1	06/04/20 09:38	06/15/20 13:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1486283	1	06/04/20 09:38	06/05/20 15:28	RGT	Mt. Juliet, TN



*

Ср

PROJECT: 27213167.20

SDG: L1220442

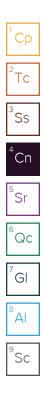
DATE/TIME: 06/18/20 15:34

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Donna Eidson Project Manager



SDG: L1220442

PAGE: 6 of 25

Collected date/time: 05/18/20 13:15

SAMPLE RESULTS - 01 L1220442



Â

Sc

Radiochemistry by Method 904

,	,						1'Cn
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	Cp
Analyte	pCi/l		+ / -	pCi/l	date / time		2
RADIUM-228	0.222		0.681	1.04	06/15/2020 09:30	WG1482009	Tc
(T) Barium	108			62.0-143	06/15/2020 09:30	WG1482009	
(T) Yttrium	82.5			79.0-136	06/15/2020 09:30	WG1482009	³ Ss

Radiochemistry by Method Calculation

Radiochemistry by Method Calculation									
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch			
Analyte	pCi/l		+/-	pCi/l	date / time		5		
Combined Radium	0.270		0.826	1.3	06/15/2020 09:30	WG1486283	ଁSr		

Radiochemistry by	y Method SM75	500Ra B M					⁶ Q
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		⁷ G
RADIUM-226	0.0484		0.145	0.261	06/05/2020 15:28	WG1486283	
(T) Barium-133	95.7			30.0-143	06/05/2020 15:28	WG1486283	0

Collected date/time: 05/18/20 12:10

SAMPLE RESULTS - 02 L1220442



۵C

GI

Â

Sc

Radiochemistry by Method 904

,	,						l'Cn
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		2
RADIUM-228	0.735		0.656	1.04	06/15/2020 09:30	WG1482009	Tc
(T) Barium	113			62.0-143	06/15/2020 09:30	WG1482009	
(T) Yttrium	86.4			79.0-136	06/15/2020 09:30	WG1482009	³ Ss

Radiochemistry by Method Calculation

Radiochemistry by Method Calculation									
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch		Cn	
Analyte	pCi/l		+/-	pCi/l	date / time		_	5	
Combined Radium	1.02		0.854	1.21	06/15/2020 09:30	WG1486283	Ŭ	Śr	

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
Analyte	pCi/l		+/-	pCi/l	date / time	
RADIUM-226	0.284		0.198	0.174	06/05/2020 15:28	WG1486283
(T) Barium-133	105			30.0-143	06/05/2020 15:28	WG1486283

Collected date/time: 05/18/20 15:05

SAMPLE RESULTS - 03 L1220442



۵C

GI

Â

Sc

Radiochemistry by Method 904

	· ,						
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		
RADIUM-228	2.15		0.716	1.12	06/15/2020 09:30	WG1482009	
(T) Barium	106			62.0-143	06/15/2020 09:30	WG1482009	
(T) Yttrium	87.6			79.0-136	06/15/2020 09:30	WG1482009	

Radiochemistry by Method Calculation

Radiochemistry by	Method Calcu	ulation					4
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	 Cn
Analyte	pCi/l		+/-	pCi/l	date / time		5
Combined Radium	2.26		0.865	1.34	06/15/2020 09:30	WG1486283	^ĭ Sr

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+ / -	pCi/l	date / time		
RADIUM-226	0.111		0.149	0.216	06/05/2020 15:28	WG1486283	
(T) Barium-133	101			30.0-143	06/05/2020 15:28	WG1486283	

Collected date/time: 05/18/20 16:35

SAMPLE RESULTS - 04 L1220442

ΆI

Sc

Radiochemistry by Method 904

,	<i>,</i>						1'Cn
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	Cp
Analyte	pCi/l		+ / -	pCi/l	date / time		2
RADIUM-228	0.718		0.631	1.06	06/15/2020 09:30	WG1482009	Tc
(T) Barium	118			62.0-143	06/15/2020 09:30	WG1482009	
(T) Yttrium	85.5			79.0-136	06/15/2020 09:30	WG1482009	³ Ss

Radiochemistry by Method Calculation

Radiochemistry by Method Calculation								⁴ Cp
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch		Cn
Analyte	pCi/l		+/-	pCi/l	date / time			5
Combined Radium	1.03		0.914	1.42	06/15/2020 09:30	WG1486283		^ĭ Sr

Radiochemistry b	Result			MDA	Analysis Date	Patch	Q.
	Result	Qualifier	Uncertainty	IVIDA	Analysis Date	Batch	
Analyte	pCi/l		+ / -	pCi/l	date / time		⁷ Gl
RADIUM-226	0.309		0.283	0.357	06/05/2020 15:28	WG1486283	
(T) Barium-133	105			30.0-143	06/05/2020 15:28	WG1486283	

Collected date/time: 05/18/20 17:40

SAMPLE RESULTS - 05 L1220442



۵C

GI

Â

Sc

Radiochemistry by Method 904

	,,					
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
Analyte	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.16		0.650	0.914	06/15/2020 09:30	WG1482009
(T) Barium	106			62.0-143	06/15/2020 09:30	WG1482009
(T) Yttrium	87.3			79.0-136	06/15/2020 09:30	WG1482009

Radiochemistry by Method Calculation

Radiochemistry by Method Calculation								
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch		Cn
Analyte	pCi/l		+/-	pCi/l	date / time		5	
Combined Radium	2.74		0.960	1.15	06/15/2020 09:30	WG1486283		Śr

Radiochemistry by Method SM7500Ra B M

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	- L
Analyte	pCi/l		+/-	pCi/l	date / time		- F
RADIUM-226	0.577		0.310	0.232	06/05/2020 15:28	WG1486283	
(T) Barium-133	97.6			30.0-143	06/05/2020 15:28	WG1486283	L.

SDG: L1220442

Collected date/time: 05/18/20 18:00

SAMPLE RESULTS - 06 L1220442



Sc

Radiochemistry by Method 904

	,						
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		
RADIUM-228	-0.225		0.666	1	06/15/2020 09:30	WG1482009	
(T) Barium	101			62.0-143	06/15/2020 09:30	WG1482009	
(T) Yttrium	87.4			79.0-136	06/15/2020 09:30	WG1482009	

Radiochemistry by Method Calculation

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		
Combined Radium	0.0780		0.819	1.26	06/15/2020 09:30	WG1486283	
Radiochemistry b	y Method SM75 Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
	0:1		+/-	pCi/l	date / time		
Analyte	pCi/l		/	14 4 11 1			
Analyte RADIUM-226	pCi/l 0.0780		0.153	0.258	06/05/2020 15:28	WG1486283	

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		
RADIUM-226	0.0780		0.153	0.258	06/05/2020 15:28	WG1486283	G
(T) Barium-133	100			30.0-143	06/05/2020 15:28	WG1486283	8
							Ă

DUPLICATE 2 Collected date/time: 05/18/20 15:20

SAMPLE RESULTS - 07 L1220442

Â

Sc

Radiochemistry by Method 904

	,						
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+ / -	pCi/l	date / time		2
RADIUM-228	-0.0567		0.537	0.807	06/15/2020 09:30	WG1482009	T
(T) Barium	101			62.0-143	06/15/2020 09:30	WG1482009	
(T) Yttrium	94.3			79.0-136	06/15/2020 09:30	WG1482009	³ S

Radiochemistry by Method Calculation

Radiochemistry by	Method Calcu	ulation					4
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	Cr
Analyte	pCi/l		+/-	pCi/l	date / time		.
Combined Radium	0.324		0.764	1.03	06/15/2020 09:30	WG1486283	ଁSr

Radiochemistry by	y Method SM75	500Ra B M					⁶ Qc
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		⁷ Gl
RADIUM-226	0.324		0.227	0.219	06/05/2020 15:28	WG1486283	0
(T) Barium-133	106			30.0-143	06/05/2020 15:28	WG1486283	0

Collected date/time: 05/18/20 12:40

SAMPLE RESULTS - 08 L1220442

٥Ç

GI

Â

Sc

Radiochemistry by Method 904

	- ,						
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		
RADIUM-228	0.453		0.544	0.839	06/15/2020 09:30	WG1482009	
(T) Barium	108			62.0-143	06/15/2020 09:30	<u>WG1482009</u>	
(T) Yttrium	99.2			79.0-136	06/15/2020 09:30	WG1482009	

Radiochemistry by Method Calculation

Radiochemistry by	Method Calcu	ulation					4
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	 Cn
Analyte	pCi/l		+/-	pCi/l	date / time		5
Combined Radium	0.469		0.647	1.08	06/15/2020 09:30	WG1486283	^ĭ Sr

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		[
RADIUM-226	0.0166		0.103	0.24	06/05/2020 15:28	WG1486283	
(T) Barium-133	108			30.0-143	06/05/2020 15:28	WG1486283	

Collected date/time: 05/18/20 11:50

SAMPLE RESULTS - 09 L1220442



Qc

Gl

Â

Sc

Radiochemistry by Method 904

,	,						1'Cn
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	Cp
Analyte	pCi/l		+ / -	pCi/l	date / time		2
RADIUM-228	0.149		0.648	1.07	06/15/2020 09:30	WG1482009	Tc
(T) Barium	111			62.0-143	06/15/2020 09:30	WG1482009	
(T) Yttrium	93.5			79.0-136	06/15/2020 09:30	WG1482009	³ Ss

Radiochemistry by Method Calculation

Radiochemistry by	Method Calcu	ulation					⁴ Cp
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	Cn
Analyte	pCi/l		+ / -	pCi/l	date / time		5
Combined Radium	0.270		0.841	1.37	06/15/2020 09:30	WG1486283	[°] Sr

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
Analyte	pCi/l		+/-	pCi/l	date / time	
RADIUM-226	0.121		0.193	0.299	06/05/2020 15:28	WG1486283
(T) Barium-133	96.0			30.0-143	06/05/2020 15:28	WG1486283

Collected date/time: 05/18/20 14:10

SAMPLE RESULTS - 10



*

Qc

Gl

Â

Sc

Radiochemistry by Method 904

,	,						 l'Cn
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	Cp
Analyte	pCi/l		+/-	pCi/l	date / time		2
RADIUM-228	0.0969		0.605	0.936	06/15/2020 13:40	WG1482009	Tc
(T) Barium	96.9			62.0-143	06/15/2020 13:40	WG1482009	
(T) Yttrium	100			79.0-136	06/15/2020 13:40	WG1482009	³ Ss

Radiochemistry by Method Calculation

							 ⁴ Cn
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	CII
Analyte	pCi/l		+ / -	pCi/l	date / time		5
Combined Radium	0.370		0.835	1.18	06/15/2020 13:40	WG1486283	Sr

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
Analyte	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.273		0.230	0.247	06/05/2020 19:44	WG1486283
(T) Barium-133	97.1			30.0-143	06/05/2020 19:44	WG1486283

Collected date/time: 05/18/20 16:30

SAMPLE RESULTS - 11 L1220442

Qc

Gl

Â

Sc

Radiochemistry by Method 904

	- ,						
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		
RADIUM-228	-0.151		0.556	0.79	06/15/2020 13:40	WG1482009	
(T) Barium	107			62.0-143	06/15/2020 13:40	<u>WG1482009</u>	
(T) Yttrium	92.9			79.0-136	06/15/2020 13:40	WG1482009	

Radiochemistry by Method Calculation

Radiochemistry by	/ Method Calcu	ulation					4
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		5
Combined Radium	0.198		0.773	1.08	06/15/2020 13:40	WG1486283	ଁSr

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		
RADIUM-226	0.198		0.217	0.287	06/05/2020 19:44	WG1486283	
(T) Barium-133	110			30.0-143	06/05/2020 19:44	WG1486283	

Collected date/time: 05/18/20 16:55

SAMPLE RESULTS - 12 L1220442



Qc

Gl

Â

Sc

Radiochemistry by Method 904

	,						
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		
RADIUM-228	1.41		0.718	1.13	06/15/2020 13:40	WG1482009	
(T) Barium	99.8			62.0-143	06/15/2020 13:40	<u>WG1482009</u>	
(T) Yttrium	88.5			79.0-136	06/15/2020 13:40	WG1482009	

Radiochemistry by Method Calculation

Radiochemistry by	/ Method Calcu	ulation					4
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	Cn
Analyte	pCi/l		+/-	pCi/l	date / time		5
Combined Radium	1.52		0.877	1.36	06/15/2020 13:40	WG1486283	ິSr

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
Analyte	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.119		0.159	0.231	06/05/2020 15:28	<u>WG1486283</u>
(T) Barium-133	99.3			30.0-143	06/05/2020 15:28	WG1486283

Collected date/time: 05/18/20 15:15

SAMPLE RESULTS - 13 L1220442



٥Ç

GI

Â

Sc

Radiochemistry by Method 904

	- ,						
	Result	Qualifier	Uncertainty	MDA	Analysis Date	<u>Batch</u>	
Analyte	pCi/l		+/-	pCi/l	date / time		
RADIUM-228	3.26		0.657	0.955	06/15/2020 13:40	WG1482009	
(T) Barium	112			62.0-143	06/15/2020 13:40	<u>WG1482009</u>	
(T) Yttrium	91.4			79.0-136	06/15/2020 13:40	WG1482009	

Radiochemistry by Method Calculation

Radiochemistry by	Method Calcu	ulation					4	
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch		~[1
Analyte	pCi/l		+ / -	pCi/l	date / time		5	
Combined Radium	3.36		0.800	1.17	06/15/2020 13:40	WG1486283	ĬS	Sr

	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	- I
Analyte	pCi/l		+/-	pCi/l	date / time		[
RADIUM-226	0.0976		0.143	0.215	06/05/2020 15:28	WG1486283	
(T) Barium-133	101			30.0-143	06/05/2020 15:28	WG1486283	

Radiochemistry by Method 904

QUALITY CONTROL SUMMARY <u>L1220442-01,02,03,04,05,06,07,08,09,10,11,12,13</u>

⁺Cn

Sr

Qc

GI

Â

Sc

Method Blank (MB)

(MB) R3540062-1 (06/15/20 09:30			
	MB Result	MB Qualifier	MB MDA	
Analyte	pCi/l		pCi/l	
Radium-228	0.127		0.482	
(T) Barium	115			
(T) Yttrium	93.8			

L1221494-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1221494-01 06/15/20	0 13:40 • (DUP)	R3540062-5	06/15/20	09:30				
	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	pCi/l		%			%	
Radium-228	1.41	1.55	1	9.73	0.160		20	3
(T) Barium	111	111						
(T) Yttrium	98.8	80.0						

Laboratory Control Sample (LCS)

(LCS) R3540062-2 (06/15/20 09:30					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	
Analyte	pCi/l	pCi/l	%	%		
Radium-228	5.00	5.58	112	80.0-120		
(T) Barium			111			
(T) Yttrium			80.7			

PROJECT: 27213167.20

SDG: L1220442 DATE/TIME: 06/18/20 15:34 PAGE: 20 of 25

Radiochemistry by Method SM7500Ra B M

QUALITY CONTROL SUMMARY <u>L1220442-01,02,03,04,05,06,07,08,09,10,11,12,13</u>

Cn

Sr

Qc

GI

A

Method Blank (MB)

	((12))		
(MB) R3537637-1 06/	/05/20 15:28		
	MB Result	MB Qualifier	MB MDA
Analyte	pCi/l		pCi/l
Radium-226	0.0208		0.0501
(T) Barium-133	96.5		

L1220442-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1220442-01 06/05/20 15:28 • (DUP) R3537637-5 06/05/20 15:28										
	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit		
Analyte	pCi/l	pCi/l		%			%			
Radium-226	0.0484	-0.120	1	200	0.894		20	3		
(T) Barium-133	95.7	106								

Laboratory Control Sample (LCS)

LCS) R3537637-2 06/0	5/20 15:28				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.31	106	80.0-120	
(T) Barium-133			103		

L1220442-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1220442-13 06/05/20 15:28 • (MS) R3537637-3 06/05/20 15:28 • (MSD) R3537637-4 06/05/20 15:28													
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.1	0.0976	20.9	20.9	103	103	1	75.0-125			0.192		20
(T) Barium-133		101			102	107							

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213167.20

SDG: L1220442 DATE/TIME: 06/18/20 15:34

PAGE: 21 of 25

GLOSSARY OF TERMS

*

Τс

ŚS

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

PROJECT: 27213167.20

SDG: L1220442 DATE/TIME: 06/18/20 15:34 PAGE: 22 of 25

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebra
Alaska	17-026	Nevad
Arizona	AZ0612	New H
Arkansas	88-0469	New J
California	2932	New M
Colorado	TN00003	New Y
Connecticut	PH-0197	North
Florida	E87487	North
Georgia	NELAP	North
Georgia ¹	923	North
Idaho	TN00003	Ohio-
Illinois	200008	Oklaho
Indiana	C-TN-01	Orego
lowa	364	Penns
Kansas	E-10277	Rhode
Kentucky ¹⁶	90010	South
Kentucky ²	16	South
Louisiana	AI30792	Tenne
Louisiana 1	LA180010	Texas
Maine	TN0002	Texas
Maryland	324	Utah
Massachusetts	M-TN003	Vermo
Michigan	9958	Virgini
Minnesota	047-999-395	Washi
Mississippi	TN00003	West \
Missouri	340	Wisco
Montana	CERT0086	Wyom

lebraska	NE-OS-15-05
levada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee ¹⁴	2006
Texas	T104704245-18-15
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213167.20

L1220442

PAGE: 23 of 25

06/18/20 15:34

			Billing Inform	mation:					1	Analysis	/ Contair	ner / Preservativ	e I	1	Chain of Custody	Page of	
SCS Engineers - KS 1575 W. 110th Street Overland Park, KS 66210			Accounts 8575 W. 3 Overland	110th Str	reet		Pres Chk	U							Pace. Netional Co	Analytical * anter for Testing 8 innoved	
eport to: ason Franks	Sper .	Email To: ifranks@sc:	sengineers	.com;jay	.martin@ev	ergy.c							1	12065 Lebanon Rd Mount Juliet, TN 37	122		
roject Description:				, MO		Please Cir	cle	33						1 2 3 1	Phone: 615-758-58 Phone: 800-767-58 Fax: 615-758-5859		
vergy - Sibley Generating Station	Client Project #		siewy	Lab Proje		PT MT C	<u>yn</u>	HNO3							SDG # 122	20442	
one: 913-681-0030	27213167			AQUAC	PKS-SI	BLEY		Add							G2		
S. Peyaflor	Site/Facility	Site/Facility ID #			(det)		4	11-HDPE							Acctnum: AQI	UAOPKS	
ollected by (signature):	Rush?	Notified)	Quote #	•			Annalisia P.C. State		n Star					Template:T11			
Haller Tenfl	Haller Tenth Same Day Fro Next Day 50		Day y (Rad Only)	Date	Results		RA228							Prelogin: P76 PM: 206 - Jeff (
nme diately acked on Ice N Y X	Two D Three	ay (Rad Only)		cto		No. of	and an and a second of all the						and a	PB:			
Sample ID	Comp/Grab		Depth	Dat	te	Time	Cntrs	RA226,	an interest						Shipped Via: Remarks	Sample # (lab only	
		1	1	100				-				1-12			Remarks		
01	GRAB	NPW		5/18	120	1315	2	X						22 8-		[
02		NPW		1		1210	2	X							-	02	
03		NPW				1505	2	X								03	
04		NPW				1635	+	X						Conception of		04	
05		NPW			1997 - 1997 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	1740	1.000	X								05	
OGR		NPW	California M		ele la	1800	2	X					- 21			00	
UPLICATE Z		NPW	and the set			1520	-	X					all the		to cy a	07	
601 MS/MSD	W	NPW		V		1525	2	X							Marketer - 1	13	
MSD		NPW					2	Y		1. 10 10 10 10 10 10 10 10 10 10 10 10 10				at the		X	
			<u> </u>											0	Receipt Ch		
	Remarks: RA 2						LOR	NON	1-ARES	pH		_ Temp Other	COC S	eal Pres	sent/Intact: curate: /e intact:	NP Y N	
ww - WasteWater pw - Drinking Water	<u></u>	1.1.		BOTTL	Es +	XFER	DI	DHA	103 21	S FIOW			Corre	et bottl	les used: olume sent:	171717	
OT - Other	Samples returne UP5 FedI		•		Trackin	g.#								lero Head		Y P	
Relinguished by : (Signature)	:(Signature) Date:			357	Received by: (Signatu				9-20	Trip Blar	Trip Blank Received: Yes / No HCL / MeoH TBR			Preservation Correct/Checked: 7 RAD Screen <0.5 mR/hr: 7 N			
Relinquished by : (Signature)		Date:	Time		Receive	d by: (Signat	ure)		e haa	Tehop 2.6-	Contraction of the same of the second	C Bottles Receiv	ed: If pres	ervation r	equired by log	in: Date/Time	
/ Relinquished by : (Signature)	1.100	Date:	Time	к 	Receive	ed for lab by:	(Signat	ture)		Date;	nlas	Time:) P245	Hold:			Condition: NCF / OK	

「「「「「「」」

- 110th Street d Park, KS 66210	8	Accounts Payable 8575 W. 110th Street Overland Park, KS 66210					n					iner / Pre	servat			Chain	of Custody Pace Anal National Danter for			
E ranks	J	mail To: franks@scse	vergy.c										Mount Ju	banon Rd liet, TN 37122						
Cenerating Station	Collected			,MO		PT MT		HNO3									Phone: 60 Phone: 80 Fax: 615-	15-758-5858 00-767-5859 758-5859		
Sibley Generating Station City Col Sibley Generating Station Client Project # 27213167.20 Site/Facility ID #				Lab Project		BLEY		1 pp	HPP								SDG #	12204		
	Site/Facility II)#		P.O. #				IL-HDPE-Add									Table #	16209		
acted by (print): Penaflor Penaflor	A			Quote #				EH									Acctnum	AQUAOPK		
Hectodby (Signature)		ay Five D	ay	and the second			1										Template	T115110		
11 - C	Next Da Two Da Three D		(Rad Only) y (Rad Only)		Results	Needed	No. cf	6, RA228									PM: 206 -	P769516 Jeff Carr		
acked on Ice N Y X Sample ID	Comp/Grab	Matrix *	Depth	Date	e	Time	Cntrs	RA22			19-94- 1						PB: Shipped V	a:		
	GRAG	NPW		5/18	120	1240	7 2	X						-			Remark	Sample #		
504		NPW				1150	2	x												
505		NPW	1.00 million (1.00 million)			1410	2	X								1.5/2				
510		NPW				1630	2	X								-				
512		NPW				1655	2	X						-		-				
601	V	NPW		V		1515	2	X				1		-		1				
		NPW						XZ					X				1	-		
		NPW			-		2	X						12.2			1775			
		NPW			-	Maria Maria		= 4						(m)			5.1			
1	Remarks: RA 2	26/228 - Ren	ort separat	tely and co	mbined	d.	2													
* Mauro air E Filtor							pH Temp					Sample Receipt Checklist Coc seal Present/Intact:NPYN Coc signed/Accurate.								
GW WesterWater			Tracking #					Flow Other					COC Sid	gned/Ac	curate:	_NP ¥				
WW - Wasterwater DW - Drinking Water DT - Other	Samples returne													lent vo	es used: lume sent:	6-				
or relinquished by : (Signature)				Time: Received by: (Signature) 1357 Jawa					5-19.20			Trip Blank Received: Yes / No HCL / MeoH				Sufficient volume sent: If Applicable VOA Zero Headspace: Preservation Correct/Checked: Zy _N RAD Screen <0.5 mR/hr:				
Religiquished by : (Signature)		Date:	Time:		Received	re)	135	Tehup PAG °C Bottles Received:			L	If preservation required by Login: Date/Time								
peinquished by : (Signature)	r - Andrews	Date:	Time:		Received for lab by: (Signatu)	2.6-,1=2.5 78 Date: Time:											
Reinquisned by : (Signature)					11	1 1	em			St.	104	Tim	e: 8145	F	lold:			Conditions		
				1.7.7. A VII.	- All		enty	and -	1.19	101	write	2	41					NCF / 6		

ATTACHMENT 1-4 July 2020 Sampling Event Laboratory Report



ANALYTICAL REPORT

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1240487 07/16/2020 27213169.20 Evergy - Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Тс Ss Cn Sr ʹQc Gl ΆI Sc

Entire Report Reviewed By:

Jubb land

Jeff Carr Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

SDG: L1240487 DATE/TIME: 07/23/20 15:11 PAGE: 1 of 17

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
MW-505 L1240487-01	5
DUPLICATE 1 L1240487-02	6
MW-506 L1240487-03	7
MW-512 L1240487-04	8
DUPLICATE 2 L1240487-05	9
MW-804 L1240487-06	10
Qc: Quality Control Summary	11
Gravimetric Analysis by Method 2540 C-2011	11
Wet Chemistry by Method 9056A	12
Metals (ICP) by Method 6010B	14
GI: Glossary of Terms	15
Al: Accreditations & Locations	16
Sc: Sample Chain of Custody	17

	¹ Cp
	² Tc
[³ Ss
[⁴ Cn
	⁵Sr
	⁶ Qc
	⁷ Gl
	⁸ Al
	⁹ Sc

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

SDG: L1240487 DATE/TIME: 07/23/20 15:11 PAGE: 2 of 17

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

1W-505 L1240487-01 GW			Collected by	Collected date/time 07/14/20 10:05	Received da 07/16/20 08:	
ethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
etals (ICP) by Method 6010B	WG1511288	1	07/19/20 18:31	07/19/20 23:28	EL	Mt. Juliet, TN
OUPLICATE 1 L1240487-02 GW			Collected by	Collected date/time 07/14/20 10:10	Received da 07/16/20 08:	
ethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
etals (ICP) by Method 6010B	WG1511288	1	07/19/20 18:31	07/19/20 23:46	EL	Mt. Juliet, TN
1W-506 L1240487-03 GW			Collected by	Collected date/time 07/14/20 10:55	Received da 07/16/20 08:	
ethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
et Chemistry by Method 9056A	WG1510683	1	07/18/20 17:10	07/18/20 17:10	ELN	Mt. Juliet, TN
1W-512 L1240487-04 GW			Collected by	Collected date/time 07/14/20 09:55	Received da 07/16/20 08:	
ethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
ravimetric Analysis by Method 2540 C-2011 /et Chemistry by Method 9056A	WG1512349 WG1510683	1 1	07/21/20 18:45 07/18/20 18:18	07/21/20 20:34 07/18/20 18:18	AEC ELN	Mt. Juliet, TN Mt. Juliet, TN
OUPLICATE 2 L1240487-05 GW			Collected by	Collected date/time 07/14/20 09:55	Received da 07/16/20 08:	
ethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
ravimetric Analysis by Method 2540 C-2011 /et Chemistry by Method 9056A	WG1512349 WG1510683	1 1	07/21/20 18:45 07/18/20 17:27	07/21/20 20:34 07/18/20 17:27	AEC ELN	Mt. Juliet, TN Mt. Juliet, TN
1W-804 L1240487-06 GW			Collected by	Collected date/time 07/14/20 11:05	Received da 07/16/20 08:	
ethod	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		

SDG: L1240487

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jubb land

Jeff Carr Project Manager

Τс Ss Cn Sr Qc GI AI Sc

PROJECT: 27213169.20

SDG: L1240487 DATE/TIME: 07/23/20 15:11 PAGE: 4 of 17

SAMPLE RESULTS - 01



Metals (ICP) by Method 6010B

							 1'
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		2
Calcium	32400		1000	1	07/19/2020 23:28	WG1511288	

SAMPLE RESULTS - 02



Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch	 Ср
Analyte	ug/l		ug/l		date / time		 2
Calcium	32000		1000	1	07/19/2020 23:46	WG1511288	⁻Tc

³ Ss
⁴ Cn
⁵Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE RESULTS - 03 L1240487

¥

Ss

Cn

Qc

GI

Â

Sc

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	'Ср
Analyte	ug/l		ug/l		date / time		2
Sulfate	78600		5000	1	07/18/2020 17:10	WG1510683	⁻Tc

SAMPLE RESULTS - 04

*

°Cn

Qc

GI

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l		date / time		2
Dissolved Solids	501000		10000	1	07/21/2020 20:34	<u>WG1512349</u>	Tc
Wet Chemistry by	/ Method 9056A						³ Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	

	Result	Qualifier	RDL	Dilution	Analysis	Batch	L
Analyte	ug/l		ug/l		date / time		4
Chloride	8830		1000	1	07/18/2020 18:18	WG1510683	L
Sulfate	77600		5000	1	07/18/2020 18:18	WG1510683	5

Chloride

Sulfate

SAMPLE RESULTS - 05

*

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

8400

73500

							L'OR
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l		date / time		2
Dissolved Solids	501000		10000	1	07/21/2020 20:34	WG1512349	Tc
Wet Chemistry by	/ Method 9056A	N N					³ Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		⁴ Cn
Chlarida	0400		1000	1	07/10/2020 17:27	WC1E10C02	

1

1

07/18/2020 17:27

07/18/2020 17:27

WG1510683

WG1510683

1000

5000

SAMPLE RESULTS - 06 L1240487

¥

Ss

Cn

Qc

GI

Â

Sc

Wet Chemistry by Method 9056A

	, ,						Cn l
	Res	ult <u>Qualifier</u>	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/		ug/l		date / time		2
Chloride	209	00	1000	1	07/18/2020 19:08	WG1510683	⁻Tc

WG1512349

Gravimetric Analysis by Method 2540 C-2011

QUALITY CONTROL SUMMARY L1240487-04,05

ONE LAB. NATIONWIDE.

Тс

Ss

Cn

Sr

ິQc

Method Blank (MB)

(MB) R3552211-1 07/2	1/20 20:34			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Dissolved Solids	U		2820	10000

L1239512-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1239512-01 07/21/	20 20:34 • (DUP)) R3552211-3	07/21/20 2	20:34		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	128000	130000	1	1.55		5

L1240490-04 Original Sample (OS) • Duplicate (DUP)

L1240490-04 Or	iginal Sample	e (OS) • Du	uplicate	(DUP)			⁷ Gl
(OS) L1240490-04 07/	21/20 20:34 • (DU	IP) R3552211-4	4 07/21/20	20:34			
	Original Result	t DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	⁸ Al
Analyte	ug/l	ug/l		%		%	
Dissolved Solids	1200000	1210000	1	1.49		5	°Sc

Laboratory Control Sample (LCS)

(LCS) R3552211-2 07	//21/20 20:34				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8820000	100	85.0-115	

DATE/TIME: 07/23/20 15:11

WG1510683

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

(MB) R3551061-1 07	7/18/20 09:04				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	ug/l		ug/l	ug/l	
Chloride	U		379	1000	
Sulfate	U		594	5000	

L1240151-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1240151-01 07/18/20) 12:40 • (DUP) F	83551061-4 0	7/18/20 12	:57		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfate	14300	14200	1	0.400		15

L1240151-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1240151-01 07/18/20	0 15:29 • (DUP)	R3551061-5 C	07/18/20 15	5:46		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	157000	157000	5	0.0626		15

L1240510-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1240510-02 07/18/2	0 19:59 • (DUP)	R3551061-6	07/18/20 2	20:16		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	1990	1990	1	0.0853		15
Sulfate	ND	ND	1	1.19		15

Laboratory Control Sample (LCS)

(LCS) R3551061-2 07/18/2	20 09:21 Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39900	99.8	80.0-120	
Sulfate	40000	38200	95.5	80.0-120	

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

SDG: L1240487 DATE/TIME: 07/23/20 15:11 PAGE: 12 of 17



Ср

⁺Cn

GI

QUALITY CONTROL SUMMARY

Τс

Ss

Cn

Sr

Qc

GI

Â

Sc

L1240100-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1240100-01 07/18/20	0 12:06 • (MS) R	3551061-3 07/	/18/20 12:23			
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits
Analyte	ug/l	ug/l	ug/l	%		%
Chloride	50000	42400	91000	97.1	1	80.0-120
Sulfate	50000	ND	51100	97.1	1	80.0-120

L1240487-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1240487-04 07/18/2	20 18:18 • (MS) F	23551061-7 07	/18/20 18:35 • (I	MSD) R355106	1-8 07/18/20 18	3:52						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	8830	56100	56900	94.5	96.1	1	80.0-120			1.43	15
Sulfate	50000	77600	120000	121000	85.1	86.8	1	80.0-120	E	E	0.692	15

DATE/TIME: 07/23/20 15:11

PAGE: 13 of 17

WG1511288

Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY

Тс

Ss

Ċn

Sr

Qc

GI

Â

Sc

Method Blank (MB)

(MB) R3550989-1 (07/19/20 23:22			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Calcium	U		389	1000

Laboratory Control Sample (LCS)

(LCS) R3550989-2 07	/19/20 23:25				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Calcium	10000	9890	98.9	80.0-120	

L1240487-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1240487-01 07/19/2	0 23:28 • (MS)	R3550989-4 (07/19/20 23:33	• (MSD) R3550	989-5 07/19/2	20 23:36						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	10000	32400	41300	41300	89.7	89.8	1	75.0-125			0.0124	20

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213169.20

SDG: L1240487 DATE/TIME: 07/23/20 15:11 PAGE: 14 of 17

GLOSSARY OF TERMS

Τс

ŚS

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

PROJECT: 27213169.20

SDG: L1240487

DATE/TIME: 07/23/20 15:11

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alaska17-026NevadaArizonaAZ0612New HArkansas88-0469New JCalifornia2932New MColoradoTN00003New YConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth CGeorgia ¹ 923North CIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010South CLouisianaAl30792TennesLouisiana324UtahMaryland324UtahMinnesota047-999-395WashinMinsissispipiTN0003WerrouMississippiTN0003West VWissouri340Wiscouri	Alabama	40660	Nebras
ArizonaAZ0612Arkansas88-0469California2932ColoradoTN00003ConnecticutPH-0197FloridaE87487GeorgiaNELAPGeorgia ¹ 923IdahoTN00003Oka0008Illinois20008IndianaC-TN-01Oregor0vaKansasE-10277KansasE-10277Kentucky ¹⁶ 90010Kentucky ¹⁶ 90010LouisianaA130792LouisianaA130792MaineTN0002MaineTN0003Wardand324Withigan9958VirginiaMassachusettsMinnesota047-999-395MississippiTN00003West WMissouri340Wiscouri340			
Arkansas88-0469New JeCalifornia2932New MColoradoTN00003New YeConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth CGeorgia ¹ 923North CIdahoTN00003Ohio-NIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010South CLouisianaAl30792TennesLouisiana1Al80010Texas SMarlenTN0002Texas SMarland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscour			
California2932New MColoradoTN00003New YConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth CGeorgia 1923North CIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South CLouisianaAl30792TennesLouisianaAl30792TexasMaineTN0002TexasMaineTN0003VermonMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont			
ColoradoTN00003New YaConnecticutPH-0197North GFloridaE87487North GGeorgiaNELAPNorth GGeorgia 1923North GIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South GLouisianaAl30792TennesLouisianaAl30792TexasMaineTN0002TexasMaineTN0003VermonMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscour			
ConnecticutPH-0197North GFloridaE37487North GGeorgiaNELAPNorth GGeorgia 1923North GIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South GLouisianaAl30792TennesLouisianaAl30792TexasMaineTN0002TexasMaineTN0003VermonMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West VMissouri340Wiscont			
FloridaE87487North CGeorgiaNELAPNorth CGeorgia 1923North CIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South CLouisianaAl30792TennesLouisianaAl30792TexasMaineTN0002TexasMaineTN0003VermonMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West VMissouri340Wiscont			
GeorgiaNELAPNorth CGeorgia 1923North DIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South DLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaineM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West VMissouri340Wiscont			North C
Georgia 1923North IIdahoTN00003Ohio-VIllinois20008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashinMississippiTN0003West VMissouri340Wiscont	Georgia	NELAP	North C
IdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010South ILouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashinMississippiTN0003West VMissouri340Wiscont	•	923	North D
IndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010South OKentucky ² 16South OLouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West VMissouri340Wiscont		TN00003	Ohio–V
Iowa364PensyKansasE-10277RhodeKentucky ¹⁶ 90010South OKentucky ² 16South OLouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West VMissouri340Wiscont	Illinois	200008	Oklaho
KansasE-10277RhodeKansasE-10277RhodeKentucky ¹⁶ 90010South OKentucky ² 16South OLouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermooMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West VMissouri340Wiscont	Indiana	C-TN-01	Oregon
Kentucky 1690010South 0Kentucky 216South 0LouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermooMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West VMissouri340Wiscont	lowa	364	Pennsy
Kentucky 216South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermootMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West VMissouri340Wiscont	Kansas	E-10277	Rhode
Kentucky 216South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermootMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West VMissouri340Wiscont	Kentucky ¹⁶	90010	South C
Louisiana 1LA180010TexasMaineTN0002Texas 5Maryland324UtahMassachusettsM-TN003VermoiMichigan9958VirginiaMinnesota047-99-395WashimMississippiTN0003West VMissouri340Wiscont		16	South E
MaineTN0002Texas 5Maryland324UtahMassachusettsM-TN003VermoiMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West VMissouri340Wiscont	Louisiana	AI30792	Tennes
Maryland324UtahMassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN00003West VMissouri340Wiscon	Louisiana ¹	LA180010	Texas
MassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN00003West VMissouri340Wiscont	Maine	TN0002	Texas ⁵
Michigan9958VirginiaMinnesota047-999-395WashinMississippiTN00003West VMissouri340Wiscont	Maryland	324	Utah
Minnesota 047-999-395 Washin Mississippi TN00003 West V Missouri 340 Wiscont	Massachusetts	M-TN003	Vermor
Mississippi TN00003 West V Missouri 340 Wiscom	Michigan	9958	Virginia
Missouri 340 Wiscon	Minnesota	047-999-395	Washin
	Mississippi	TN00003	West V
Montana CERT0086 Wyomi	Missouri	340	Wiscon
	Montana	CERT0086	Wyomii

lebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee ¹⁴	2006
Texas	T104704245-18-15
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213169.20

L1240487

07/23/20 15:11

SCS Engineers - KS			Billing Info	Annucion.			1000	1			nalver						Chain of Custody	/ Pape of
8575 W. 110th Street	SCS Engineers - KS						Pres	3					ner / Preserva			- e	2	
Overland Park, KS 66210			- Company -	. 110th St d Park, K		10	Chk	7									- Pace Nettorial C	Analytical* inner for Testing & tonovatile
Report to: Jason Franks			Email To: jfranks@s	csengineers	s.com;ja	ay.martin@e	vergy.c				1						12065 Lebanon Rd Mount Juliet, TN 3	
Project Description:		City/State	Lauratur alit.	-110	- ti	Please C					30-2-			-			Phone: 615-758-58 Phone: 800-767-58	
Evergy - Sibley Generating Station		Collected:				PT MT		03		es				.152		- 44	Fax: 615-758-5859	
Phone: 913-681-0030	Client Project 27213169.		d	Lab Proje		BIBLEY		250mlHDPE-HNO3	Pres	125mHDPE-NoPres	res						SDG # 1038	1246487
Collected by (print):	Site/Facility I)#		P.O. #	0. #		1	DHIMO	DE-No	ACHIN	-NoP	oPres			Acctnum: AQUAC			
Collected by (signature):	1997 - E. 1	ab MUST Be	e Day		Jote #		6010 250	125mlHDPE-NoPres	125n	Sulfate 125mlHDPE-NoPres	250miHDPE-NoPres				Template: T166706 Prelogin: P784778		4778	
Immediately Packed on Ice N Y	Two Da	/ 10 Da	r (Rad Only) ay (Rad Only)	Date	Results	Needed	No. of	12	Chloride 12	Chloride, SO4	e 125	Soml					PM: 206 - Jeff PB:	Carr
Sample ID	Comp/Grab	Matrix *	Depth	Dat	e	Time	Cntrs	Calcium	lori	lori	fat	52					Shipped Via:	
			L			L		Ca	5	5	Sul	TDS					Remarks	Sample # (lab only)
MW-505		GW	1.2	7/14	420	1,00 5	1	X						- 11			100	-01
MW-505 MS/MSD		GW	774	1-1-	120	1015	1	x	- 49									07
DUPLICATE 1		GW	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	7/1	4/20	1016	1	X										0203
MW-506		GW			-	and a start and a start and a start a st	1				X							2.7
MW-512		GW		1714	60	100					~							0303
MW-512 MS/MSD				1 =/14/	120	955	2			X	19	X				1894		0405
DUPLICATE 2		GW		1-11	Ino	485	FAS			X								04
		GW		7/10	10	955	2			X		X				-		05
MW-804		GW		FA	420	lios	1		х							2		06
											- 20 MBA							
ss - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater	Remarks:									Temp Other		Sample Receipt Checklist COC Seal Present/Intact: NP Y COC Signed/Accurate: Bottles arrive intact: Correct bottles used;			ecklist			
pW - Drinking Water oT - Other	Samples returned via: Tracking.# / (84	5	F 43		0 70.58			Suffic	ient)	volume sent: <u>If Applicab</u>	CI_N	
Relinquished by : (Signature) Date:		1/15/2	7 Time:	325		d by: (Signat		7-15					ed: Yes/NG HCL/M TBR		H			
Relinquished by : (Signature)	Dái	e:	Time:			d by: (Signat		1		1	emp: 1.4-	1-130		rived:	If preser	vation	required by log	in: Date/Time
Relinquished by : (Signature)	Dat	e:	Time:		Receive	d for lab by:	(Signatu	re)		D	ate: ///6	the	Time:	:45	Hold:			Condition: NCF / OK

Jared Morrison December 16, 2022

ATTACHMENT 1-5 August 2020 Sampling Event Laboratory Report



ANALYTICAL REPORT

September 02, 2020

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1255482 08/27/2020 27213169.20 Evergy - Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Тс Ss Cn Sr ʹQc Gl AI Sc

Entire Report Reviewed By:

Jubb land

Jeff Carr Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

SDG: L1255482 DATE/TIME: 09/02/20 11:06

PAGE: 1 of 19

TABLE OF CONTENTS

*

Ср

Ss

Cn

Sr

Qc

GI

ΆI

Sc

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
MW-505 L1255482-01	5
DUPLICATE 1 L1255482-02	6
MW-506 L1255482-03	7
MW-512 L1255482-04	8
DUPLICATE 2 L1255482-05	9
MW-804 L1255482-06	10
Qc: Quality Control Summary	11
Gravimetric Analysis by Method 2540 C-2011	11
Wet Chemistry by Method 9056A	13
Metals (ICP) by Method 6010B	15
GI: Glossary of Terms	17
Al: Accreditations & Locations	18
Sc: Sample Chain of Custody	19

SDG: L1255482 DATE/TIME: 09/02/20 11:06

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

MW-505 L1255482-01 GW			Collected by Whit Martin	Collected date/time 08/26/20 15:55	Received da 08/27/20 09		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	
Metals (ICP) by Method 6010B	WG1535590	1	08/31/20 22:55	09/01/20 14:16	TRB	Mt. Juliet, TN	
DUPLICATE1 L1255482-02 GW			Collected by Whit Martin	Collected date/time 08/26/20 15:55	Received da 08/27/20 09		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	
Metals (ICP) by Method 6010B	WG1535075	1	09/01/20 12:43	09/01/20 18:13	TRB	Mt. Juliet, TN	
MW-506 L1255482-03 GW			Collected by Whit Martin	Collected date/time 08/26/20 14:55	Received da 08/27/20 09		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	
Wet Chemistry by Method 9056A	WG1533924	1	08/28/20 11:06	08/28/20 11:06	LBR	Mt. Juliet, TN	
MW-512 L1255482-04 GW			Collected by Collected date/time Whit Martin 08/26/20 14:10		Received date/time 08/27/20 09:30		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	
Gravimetric Analysis by Method 2540 C-2011 Wet Chemistry by Method 9056A	WG1534612 WG1533924	1 1	08/29/20 10:05 08/28/20 11:17	08/29/20 13:00 08/28/20 11:17	TH LBR	Mt. Juliet, TN Mt. Juliet, TN	
DUPLICATE 2 L1255482-05 GW			Collected by Whit Martin	Collected date/time 08/26/20 14:10	Received da 08/27/20 09		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	
Gravimetric Analysis by Method 2540 C-2011 Wet Chemistry by Method 9056A	WG1534611 WG1533924	1 1	08/29/20 09:50 08/28/20 11:49	08/29/20 12:53 08/28/20 11:49	TH LBR	Mt. Juliet, TN Mt. Juliet, TN	
MW-804 L1255482-06 GW			Collected by Whit Martin	Collected date/time 08/26/20 13:25	Received da 08/27/20 09		
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location	
Wet Chemistry by Method 9056A	WG1533924	1	08/28/20 12:00	08/28/20 12:00	LBR	Mt. Juliet, TN	

PROJECT: 27213169.20

SDG: L1255482 DATE/TIME: 09/02/20 11:06

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jubb land

Jeff Carr Project Manager

Τс Ss Cn Sr Qc GI AI Sc

SDG: L1255482 DATE/TIME: 09/02/20 11:06

PAGE: 4 of 19



Ss

Cn

Qc

GI

Â

Sc

	Result	Qualifier	RDL	Dilution	Analysis	Batch	' Cr	р
Analyte	ug/l		ug/l		date / time		2	-
Calcium	30300		1000	1	09/01/2020 14:16	WG1535590	Tc	2



Τс

Metals (ICP) by Method 6010B

· · · · · ·							1°C
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		2
Calcium	30700		1000	1	09/01/2020 18:13	WG1535075	T



ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

SDG: L1255482 D 09

DATE/TIME: 09/02/20 11:06 PAGE: 6 of 19

*

Wet Chemistry by Method 9056A

							1'Cn	
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср	
Analyte	ug/l		ug/l		date / time		2	i.
Sulfate	79600		5000	1	08/28/2020 11:06	WG1533924	Tc	

³ Ss
⁴ Cn
⁵Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

SDG: L1255482 DATE/TIME: 09/02/20 11:06

PAGE: 7 of 19

SAMPLE RESULTS - 04 L1255482

Qc

GI

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

Chavine the range											
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp				
Analyte	ug/l		ug/l		date / time		2				
Dissolved Solids	493000		10000	1	08/29/2020 13:00	<u>WG1534612</u>	² Tc				
Wet Chemistry by	Method 9056A	X.					³ Ss				
	Result	Qualifier	RDL	Dilution	Analysis	Batch					
Analyte	ug/l		ug/l		date / time		4 Cr				
Chloride	8790		1000	1	08/28/2020 11:17	WG1533924					

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		⁴ Cn
Chloride	8790		1000	1	08/28/2020 11:17	WG1533924	CII
Sulfate	80100		5000	1	08/28/2020 11:17	WG1533924	5
							ິSr

Sulfate

SAMPLE RESULTS - 05

*

*Q*c

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

81600

	Result	Qualifier	RDL	Dilution	Analysis	Batch		
Analyte	ug/l		ug/l		date / time			
Dissolved Solids	483000		10000	1	08/29/2020 12:53	WG1534611		
Wet Chemistry by	Method 90564	4					3	
	Result	Qualifier	RDL	Dilution	Analysis	Batch	L	
Analyte	ug/l		ug/l		date / time		4	
Chloride	9050		1000	1	08/28/2020 11:49	WG1533924		

1

08/28/2020 11:49

WG1533924

5000

*

Wet Chemistry by Method 9056A

							 l'Cn	L
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp	l
Analyte	ug/l		ug/l		date / time		2	i
Chloride	20800		1000	1	08/28/2020 12:00	WG1533924	Tc	

³ Ss
4
[≁] Cn
5
⁵Sr
6
[°] Qc
7
[′] Gl
8
ĨĂĬ
°Sc

Gravimetric Analysis by Method 2540 C-2011

QUALITY CONTROL SUMMARY L1255482-05

ONE LAB. NATIONWIDE.

Тс

Ss

Cn

Sr

ິQc

Method Blank (MB)

(MB) R3565358-1 08/29/20 12:53						
	MB Result	MB Qualifier	MB MDL	MB RDL		
Analyte	ug/l		ug/l	ug/l		
Dissolved Solids	U		2820	10000		

L1255045-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1255045-01 08/29/2	OS) L1255045-01 08/29/20 12:53 • (DUP) R3565358-3 08/29/20 12:53 Original Result DUP Result Dilution DUP RPD DUP Qualifier DUP RPD												
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits							
Analyte	ug/l	ug/l		%		%							
Dissolved Solids	276000	275000	1	0.363		5							

L1255660-03 Original Sample (OS) • Duplicate (DUP)

L1255660-03 Orig	L1255660-03 Original Sample (OS) • Duplicate (DUP)									
(OS) L1255660-03 08/2	29/20 12:53 • (DU	P) R3565358-	4 08/29/2	20 12:53						
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits		⁸ Al		
Analyte	ug/l	ug/l		%		%				
Dissolved Solids	325000	332000	1	2.13		5		°Sc		

Laboratory Control Sample (LCS)

(LCS) R3565358-2 08	CS) R3565358-2 08/29/20 12:53											
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier							
Analyte	ug/l	ug/l	%	%								
Dissolved Solids	8800000	8510000	96.7	77.4-123								

DATE/TIME: 09/02/20 11:06

Gravimetric Analysis by Method 2540 C-2011

QUALITY CONTROL SUMMARY L1255482-04

ONE LAB. NATIONWIDE.

Тс

Ss

Cn

Sr

ິQc

Method Blank (MB)

(MB) R3565362-1 08	MB) R3565362-1 08/29/20 13:00									
	MB Result	MB Qualifier	MB MDL	MB RDL						
Analyte	ug/l		ug/l	ug/l						
Dissolved Solids	U		2820	10000						

L1253986-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1253986-16 08/2	'29/20 13:00 • (DUF	P) R3565362-	3 08/29/2	0 13:00		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	79000	77000	1	2.56		5

L1255554-04 Original Sample (OS) • Duplicate (DUP)

L1255554-04 Orig	ginal Sample	e (OS) • Du	plicate	(DUP)			⁷ Gl
(OS) L1255554-04 08/2	9/20 13:00 • (DU	P) R3565362-	-4 08/29/2	20 13:00			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	⁸ Al
Analyte	ug/l	ug/l		%		%	
Dissolved Solids	8190000	9500000	1	14.9	<u>J3</u>	5	⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3565362-2 0	CS) R3565362-2 08/29/20 13:00											
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier							
Analyte	ug/l	ug/l	%	%								
Dissolved Solids	8800000	8330000	94.7	77.4-123								

DATE/TIME: 09/02/20 11:06

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

(MB) R3565005-1 08	8/28/20 05:09			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		379	1000
Sulfate	U		594	5000
ounate	3		001	0000

L1255046-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1255046-01 (08/28/20 06:23 • (DU	P) R3565005	-3 08/28/2	20 06:34				
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits		
Analyte	ug/l	ug/l		%		%		
Chloride	ND	ND	1	0.000		15		
Sulfate	16100	16900	1	4.57		15		

L1255482-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1255482-06 08/28/	/20 12:00 • (DUI	P) R3565005-	10 08/28/	20 12:33					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits			
Analyte	ug/l	ug/l		%		%			
Chloride	20800	20600	1	1.01		15			
Sulfate	27800	27600	1	0.647		15			

Laboratory Control Sample (LCS)

(LCS) R3565005-2 08/28/20 05:19												
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier							
Analyte	ug/l	ug/l	%	%								
Chloride	40000	39900	99.8	80.0-120								
Sulfate	40000	39900	99.7	80.0-120								

L1255433-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255433-01 08/28/2	(OS) L1255433-01 08/28/20 07:07 • (MS) R3565005-4 08/28/20 07:18 • (MSD) R3565005-5 08/28/20 07:28												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%	
Chloride	50000	16600	69200	67900	105	102	1	80.0-120			1.91	15	
Sulfate	50000	47900	98500	97900	101	100	1	80.0-120			0.558	15	

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213169.20

SDG: L1255482 DATE/TIME: 09/02/20 11:06

PAGE: 13 of 19

ONE LAB. NATIONWIDE.

¹Cp

⁺Cn

Sr

Qc

GI

Â

Sc

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

Τс

Ss

Cn

Sr

Qc

GI

Â

Sc

L1255433-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255433-06 08/28/2	(OS) L1255433-06 08/28/20 08:23 • (MS) R3565005-6 08/28/20 08:34 • (MSD) R3565005-7 08/28/20 08:45												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%	
Chloride	50000	20000	71300	70500	103	101	1	80.0-120			1.23	15	
Sulfate	50000	182000	232000	225000	101	87.4	1	80.0-120	E	E	2.92	15	

L1255482-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255482-04 08/28/	(OS) L1255482-04 08/28/20 11:17 • (MS) R3565005-8 08/28/20 11:27 • (MSD) R3565005-9 08/28/20 11:38														
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits			
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%			
Chloride	50000	8790	60500	60000	103	102	1	80.0-120			0.858	15			
Sulfate	50000	80100	130000	130000	99.0	99.0	1	80.0-120	E	E	0.0218	15			

SDG: L1255482 DATE/TIME: 09/02/20 11:06

PAGE: 14 of 19

Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY

Τс

Ss

Ċn

Sr

Qc

GI

Â

Sc

Method Blank (MB)

(MB) R3566317-1 09/0	01/20 17:28				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	ug/l		ug/l	ug/l	
Calcium	U		389	1000	

Laboratory Control Sample (LCS)

(LCS) R3566317-2 09/0	01/20 17:31				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Calcium	10000	9650	96.5	80.0-120	

L1255259-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255259-09 09/01/2	20 17:34 • (MS)	R3566317-4 0	9/01/20 17:39 •	(MSD) R35663	317-5 09/01/20	17:42						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	10000	77100	85800	85600	86.5	84.5	1	75.0-125			0.238	20

PROJECT: 27213169.20

SDG: L1255482 DATE/TIME: 09/02/20 11:06 PAGE: 15 of 19

Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) R3566286-1 09/0	01/20 14:11			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Calcium	U		389	1000

Laboratory Control Sample (LCS)

(LCS) R3566286-2 09/0	01/20 14:13				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Calcium	10000	9690	96.9	80.0-120	

L1255482-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1255482-01 09/01/2	(OS) L1255482-01 09/01/20 14:16 • (MS) R3566286-4 09/01/20 14:22 • (MSD) R3566286-5 09/01/20 14:24														
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits			
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%			
Calcium	10000	30300	39500	39400	92.5	91.7	1	75.0-125			0.213	20			

GI

Â

Sc

GLOSSARY OF TERMS

*

Тс

Ss

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

J3 The associated batch QC was outside the established quality control range for precision.

PROJECT: 27213169.20

SDG: L1255482 DATE/TIME: 09/02/20 11:06

PAGE: 17 of 19

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alaska17-026NevadiArizonaAZ0612New HArkansas88-0469New JCalifornia2932New MColoradoTN00003New YConnecticutPH-0197North OFloridaE87487North OGeorgiaNELAPNorth OGeorgia^1923North OIllinois200008OklaboIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKansasE-10277RhodeKansaiAl30792TenneeLouisianaAl30792TenneeLouisiana324UtahMaryland324UtahMinnesota047-999-395WashirMinssisippiTN00003West WMissouri340Wiscor	Alabama	40660	Nebras
ArizonaA20612New HArkansas88-0469New HCalifornia2932New MColoradoTN00003New MConnecticutPH-0197North GFloridaE87487North GGeorgiaNELAPNorth GGeorgia ¹ 923North GIdahoTN00003OhioIIllinois20008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010SouthLouisianaA130792TennesLouisiana 1LA180010TexasMaireTN0002TexasMarjand324UtahMinnesota047-999-395WashirMississippiTN00003West WMissouri340Wiscont			
Arkansas88-0469New JeCalifornia2932New MColoradoTN00003New YConnecticutPH-0197North GFloridaE87487North GGeorgiaNELAPNorth GGeorgia 1923North GIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010SouthLouisianaAl30792TennesLouisianaAl30792TennesMaineTN0002TexasMaineTN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West WMissouri340Wiscont			
California2932ColoradoTN00003ConnecticutPH-0197FloridaE87487GeorgiaNELAPGeorgia ¹ 923IdahoTN00003Illinois200008IndianaC-TN-01Iowa364Kentucky ¹⁶ 90010Kentucky ² 16LouisianaAl30792LouisianaAl30792Louisiana324MaineTN0003Minnesota047-999-395MinssispipiTN0003Missouri340Wiscouri340			
ColoradoTN00003New YConnecticutPH-0197North OFloridaE87487North OGeorgiaNELAPNorth OGeorgia 1923North OIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South OLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaine9958VirginiaMinnesota047-999-395WashirMississippiTN0003West WMissouri340Wiscouri			
ConnecticutPH-0197North GFloridaE87487North GGeorgiaNELAPNorth GGeorgia 1923North GIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South GLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaine324UtahMinnesota047-999-395WashirMississippiTN0003West WMissouri340Wiscort			
FloridaE87487North OGeorgiaNELAPNorth OGeorgia 1923North OIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South OLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscort			
GeorgiaNELAPNorth OGeorgia 1923North DIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South DLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont			North C
Georgia 1923North IIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Georgia	NELAP	North C
IdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010South ILouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscort	•	923	North D
IndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010South IKentucky ² 16South ILouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont		TN00003	Ohio–V
Iowa364PensyKansasE-10277RhodeKentucky ¹⁶ 90010South 0Kentucky ² 16South 0LouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Illinois	200008	Oklaho
KansasE-10277RhodeKansasE-10277South JKentucky ¹⁶ 90010South JLouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Indiana	C-TN-01	Oregon
Kentucky 1690010South IKentucky 216South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	lowa	364	Pennsy
Kentucky 216South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Kansas	E-10277	Rhode
Kentucky 216South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Kentucky ¹⁶	90010	South C
Louisiana 1LA180010TexasMaineTN0002Texas 1Maryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont		16	South E
MaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Louisiana	AI30792	Tennes
Maryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscont	Louisiana ¹	LA180010	Texas
MassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscont	Maine	TN0002	Texas ⁵
Michigan9958VirginiaMinnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscont	Maryland	324	Utah
Minnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscon	Massachusetts	M-TN003	Vermor
MississippiTN00003West VMissouri340Wiscon	Michigan	9958	Virginia
Missouri 340 Wiscon	Minnesota	047-999-395	Washin
	Mississippi	TN00003	West V
Montana CERT0086 Wyomi	Missouri	340	Wiscon
	Montana	CERT0086	Wyomii

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico 1	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee 14	2006
Texas	T104704245-18-15
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213169.20

L1255482

09/02/20 11:06

	1. 			Billing Information:						A	nalvsis /	/ Contair	ner / Prese	ervative		Chain of Custody Page of		
SCS Engineers - KS 575 W. 110th Street Overland Park, KS 66210			Accounts Payable 8575 W. 110th Street Overland Park, KS 66210					77]	Pace A Netional Can	Analytical * stor for Testing & Ionava
Report to: Jason Franks			Email To: jfranks@scsengineers.com;jay.martin@ever													N P	12065 Lebanon Rd Mount Juliet, TN 371 Phone: 615-758-5858	· 4-2-4-1-1
Project Description: Evergy - Sibley Generating Station		City/State Collected:	Sibler	MO		Please Ci PT MT C	TET	CO		res							hone: 800-767-5859 ax: 615-758-5859	首教理
Phone: 913-681-0030	Client Project	t #		Lab Proje		IBLEY		250mIHDPE-HNO3	Pres	PE-NoP	res					5	MO	75348 49
Collected by (print): Whit Martin	Site/Facility ID # Rush? (Lab MUST Be Notifie			P.O. #				Omihi	DPE-No	IDHIM	PE-NoP	NoPres					Acctnum: AQU	
Collected by (signature): Manufacture Immediately Packed on Ice N Y X		Day Five lay 5 Da ay 10 D		Quote #		Needed	No. of	- 6010	de 125mlHDPE-NoPres	de, SO4 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	250mlHDPE-NoPres				P	emplate: T166 Prelogin: P789 PM: 206 - Jeff C PB:	904
Sample ID	Comp/Grab	Matrix *	Depth	Da	ite	Time	Cntrs	Calcium	Chloride	Chloride,	sulfat	TDS 2				S	Remarks	Sample # (lab o
MW-505	Grab	GW	1	18/2	6/20	1555	1	X									pi la	-0
MW-505 MS/MSD	Grab	GW		8/2	6/20	1555	1	X										6
DUPLICATE 1 "	Grab	GW		8/2	6/20	1555	1	X										(
MW-506	Grab	GW		8/20	5/20	1455	1.				X		-3					
MW-512	Grab	GW	1.1.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2	8/20	6/20	1410	2			X		X						0
MW-512 MS/MSD	Grab	GW		8/20	6/20	1410	1.			X								1 1
DUPLICATE 2 ·	Grab	GW		8/2	6/20	11410	2			X		X						(
MW-804	Grab	GW		8/2	6/20	1325	1		X									(
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other Samples returned via: UPSFedExCourier		Pri - j								pH Flow		_ Temp		COC S: Bottle Correc	eal Pres igned/Ac es arriv ct bottl	Receipt Che sent/Intact: courate: re intact: les used:	NP Y	
					Trackin			179	10:			32:			VOA Z	ero Head		e _Y
Relinquished by : (Signature) Date: B/26/		20 Time				<u> </u>	-		Trip Bla	ip Blank Received: Yes / No HCL / MeoH TBR				Preservation Correct/Checked: RAD Screen <0.5 mR/hr: Y_N				
Relinquished by: (Signature)		Date: 26	20 [8	60	11	ed by: (Signa	ture)	H F			Tehner 3.9	13:	C Bottle	s Received:		ervation n	equired by Logi	.n: Date/Time
Refinquished by : (Signature)		Date:	Time	CONTRACTOR OF CASE OF	- 1012226819149	ed for lab by	1	7	1		Date:	1. la	time	9:30	Hold:			Condition



ANALYTICAL REPORT

September 03, 2020

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1255481 08/27/2020 27213169.20 Evergy Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Тс Ss Cn Sr ʹQc Gl AI Sc

Entire Report Reviewed By:

Jubb land

Jeff Carr Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

SDG: L1255481 DATE/TIME: 09/03/20 14:26

PAGE: 1 of 14

TABLE OF CONTENTS

*	
¹ Cp	
² Tc	
³ Ss	
⁴ Cn	
⁵Sr	
⁶ Qc	
⁷ Gl	

[®]Al

Sc

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
MW-505 L1255481-01	5
MW-506 L1255481-02	6
MW-512 L1255481-03	7
MW-804 L1255481-04	8
Qc: Quality Control Summary	9
Wet Chemistry by Method 2320 B-2011	9
Wet Chemistry by Method 9056A	10
Metals (ICP) by Method 6010B	11
GI: Glossary of Terms	12
Al: Accreditations & Locations	13
Sc: Sample Chain of Custody	14

SDG: L1255481 DATE/TIME: 09/03/20 14:26

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

			Collected by Whit Martin	Collected date/time 08/26/20 15:55	Received da 08/27/20 09	
MW-505 L1255481-01 GW				00/20/20 15.55	00/27/20 09	.50
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Net Chemistry by Method 2320 B-2011	WG1534051	1	09/02/20 23:21	09/02/20 23:21	MCG	Mt. Juliet, TN
Vet Chemistry by Method 9056A	WG1533924	1	08/28/20 10:33	08/28/20 10:33	LBR	Mt. Juliet, TN
letals (ICP) by Method 6010B	WG1535077	1	09/01/20 11:45	09/01/20 15:18	EL	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-506 L1255481-02 GW			Whit Martin	08/26/20 14:55	08/27/20 09	:30
<i>I</i> lethod	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Vet Chemistry by Method 2320 B-2011	WG1534051	1	09/02/20 23:30	09/02/20 23:30	MCG	Mt. Juliet, TN
Vet Chemistry by Method 9056A	WG1533924	1	08/28/20 10:44	08/28/20 10:44	LBR	Mt. Juliet, TN
letals (ICP) by Method 6010B	WG1535077	1	09/01/20 11:45	09/01/20 15:20	EL	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-512 L1255481-03 GW			Whit Martin	08/26/20 14:10	08/27/20 09	:30
flethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Vet Chemistry by Method 2320 B-2011	WG1534051	1	09/02/20 23:37	09/02/20 23:37	MCG	Mt. Juliet, TN
Atals (ICP) by Method 6010B	WG1535077	1	09/01/20 11:45	09/01/20 15:23	EL	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-804 L1255481-04 GW			Whit Martin	08/26/20 13:25	08/27/20 09	:30
flethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Vet Chemistry by Method 2320 B-2011	WG1534051	1	09/02/20 23:44	09/02/20 23:44	MCG	Mt. Juliet, TN
			00/00/00 40 55	00/20/20 10-55		Ma Juliat Th
Vet Chemistry by Method 9056A	WG1533924	1	08/28/20 10:55	08/28/20 10:55	LBR	Mt. Juliet, TN

SDG: L1255481 DATE/TIME: 09/03/20 14:26

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jubb land

Jeff Carr Project Manager

Τс Ss Cn Sr Qc GI AI Sc

PROJECT: 27213169.20

SDG: L1255481 DATE/TIME: 09/03/20 14:26 PAGE:

4 of 14

Collected date/time: 08/26/20 15:55

SAMPLE RESULTS - 01



Ss

Cn

Qc

GI

Wet Chemistry by Method 2320 B-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l		date / time		2
Alkalinity,Bicarbonate	110000		20000	1	09/02/2020 23:21	WG1534051	Tc
Alkalinity,Carbonate	ND		20000	1	09/02/2020 23:21	WG1534051	

Sample Narrative:

L1255481-01 WG1534051: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	1030		1000	1	08/28/2020 10:33	WG1533924
Sulfate	14300		5000	1	08/28/2020 10:33	WG1533924

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch	8
Analyte	ug/l		ug/l		date / time		Ă١
Magnesium	8950		1000	1	09/01/2020 15:18	WG1535077	
Potassium	ND		2000	1	09/01/2020 15:18	WG1535077	9 20
Sodium	8950		3000	1	09/01/2020 15:18	WG1535077	50

SDG: L1255481 Collected date/time: 08/26/20 14:55

SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.



Cn

Qc

7

Wet Chemistry by Method 2320 B-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte	ug/l		ug/l		date / time		2
Alkalinity,Bicarbonate	289000		20000	1	09/02/2020 23:30	WG1534051	Tc
Alkalinity,Carbonate	ND		20000	1	09/02/2020 23:30	WG1534051	
							³ Ss

Sample Narrative:

L1255481-02 WG1534051: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	7310		1000	1	08/28/2020 10:44	WG1533924

	Result	Qualifier	RDL	Dilution	Analysis	Batch	GI
Analyte	ug/l		ug/l		date / time		8
Calcium	93900		1000	1	09/01/2020 15:20	WG1535077	ĨA
Magnesium	38200		1000	1	09/01/2020 15:20	WG1535077	
Potassium	ND		2000	1	09/01/2020 15:20	WG1535077	⁹ Sc
Sodium	8150		3000	1	09/01/2020 15:20	WG1535077	50

Collected date/time: 08/26/20 14:10

SAMPLE RESULTS - 03



Cn

Qc

Gl

ΆI

Sc

Wet Chemistry by Method 2320 B-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	 Ср
Analyte	ug/l		ug/l		date / time		2
Alkalinity,Bicarbonate	349000		20000	1	09/02/2020 23:37	<u>WG1534051</u>	Tc
Alkalinity,Carbonate	ND		20000	1	09/02/2020 23:37	<u>WG1534051</u>	
Comula Nevretives							³ Ss

Sample Narrative:

L1255481-03 WG1534051: Endpoint pH 4.5 Headspace

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Calcium	114000		1000	1	09/01/2020 15:23	WG1535077
Magnesium	38900		1000	1	09/01/2020 15:23	WG1535077
Potassium	2130		2000	1	09/01/2020 15:23	WG1535077
Sodium	10400		3000	1	09/01/2020 15:23	WG1535077

Collected date/time: 08/26/20 13:25

SAMPLE RESULTS - 04



Cn

Qc

7

Wet Chemistry by Method 2320 B-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	 Ср
Analyte	ug/l		ug/l		date / time		2
Alkalinity,Bicarbonate	491000		20000	1	09/02/2020 23:44	WG1534051	Tc
Alkalinity,Carbonate	ND		20000	1	09/02/2020 23:44	WG1534051	
Comula Nevretives							³ Ss

Sample Narrative:

L1255481-04 WG1534051: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Sulfate	27100		5000	1	08/28/2020 10:55	WG1533924

	Result	Qualifier	RDL	Dilution	Analysis	Batch	(
Analyte	ug/l		ug/l		date / time		8
Calcium	148000		1000	1	09/01/2020 15:26	WG1535077	Ĕ Ă
Magnesium	35100		1000	1	09/01/2020 15:26	<u>WG1535077</u>	
Potassium	5410		2000	1	09/01/2020 15:26	WG1535077	9 <
Sodium	26900		3000	1	09/01/2020 15:26	WG1535077	

Wet Chemistry by Method 2320 B-2011

QUALITY CONTROL SUMMARY

Method Blank (MB)

Method Blank (IV							
(MB) R3566888-1 09/0	2/20 22:33						
	MB Result	MB Qualifier	MB MDL	MB RDL		2	
Analyte	ug/l		ug/l	ug/l		Tc	
Alkalinity,Bicarbonate	U		8450	20000			
Alkalinity,Carbonate	U		8450	20000		³ Ss	

Sample Narrative:

BLANK: Endpoint pH 4.5

L1255315-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1255315-01 09/02/20 22:52 • (DUP) R3566888-2 09/02/20 22:59									
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits			
Analyte	ug/l	ug/l		%		%			
Alkalinity,Bicarbonate	381000	381000	1	0.0890		20			
Alkalinity,Carbonate	ND	ND	1	0.000		20			

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
 ⁷ Gl

SDG: L1255481 DATE/TIME: 09/03/20 14:26

PAGE: 9 of 14 Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) R3565005-1 08/28/20 05:09								
	MB Result	MB Qualifier	MB MDL	MB RDL				
Analyte	ug/l		ug/l	ug/l				
Chloride	U		379	1000				
Sulfate	U		594	5000				

Laboratory Control Sample (LCS)

(LCS) R3565005-2 08/28/	/20 05:19						
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>CS Qualifier</u>		
Analyte	ug/l	ug/l	%	%			
Chloride	40000	39900	99.8	80.0-120			
Sulfate	40000	39900	99.7	80.0-120			

DATE/TIME: 09/03/20 14:26

Sc

*

Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY L1255481-01,02,03,04

Method Blank (MB)

(MB) R3566148-1	09/01/20 14:20

(IVID) R5500146-1 09/0	1/20 14.20			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Calcium	U		389	1000
Magnesium	U		111	1000
Potassium	U		510	2000
Sodium	U		1400	3000

Laboratory Control Sample (LCS)

LCS) R3566148-2 09/01/20 14:23								
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier			
Analyte	ug/l	ug/l	%	%				
Calcium	10000	9910	99.1	80.0-120				
Magnesium	10000	9380	93.8	80.0-120				
Potassium	10000	9340	93.4	80.0-120				
Sodium	10000	9980	99.8	80.0-120				

Sr

ິQc

GI

Â

Sc

GLOSSARY OF TERMS

₩

Τс

ŚS

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

PROJECT: 27213169.20

SDG: L1255481 DATE/TIME: 09/03/20 14:26

PAGE: 12 of 14

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebras
Alaska	17-026	Nevada
Arizona	AZ0612	New Ha
Arkansas	88-0469	New Je
California	2932	New Me
Colorado	TN00003	New Yo
Connecticut	PH-0197	North C
Florida	E87487	North C
Georgia	NELAP	North C
Georgia ¹	923	North D
Idaho	TN00003	Ohio–V
Illinois	200008	Oklaho
Indiana	C-TN-01	Oregon
lowa	364	Pennsy
Kansas	E-10277	Rhode
Kentucky ¹⁶	90010	South C
Kentucky ²	16	South D
Louisiana	Al30792	Tennes
Louisiana ¹	LA180010	Texas
Maine	TN0002	Texas ⁵
Maryland	324	Utah
Massachusetts	M-TN003	Vermon
Michigan	9958	Virginia
Minnesota	047-999-395	Washin
Mississippi	TN00003	West Vi
Missouri	340	Wiscons
Montana	CERT0086	Wyomir

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee 14	2006
Texas	T104704245-18-15
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213169.20

L1255481

PAGE: 13 of 14

09/03/20 14:26

			Billing Infor	rmation:				-		halvsis	/ Contai	ner / Pre	servative	1	Chain of Custor	ly Page of
SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210			Accounts Payable 1575 W. 110th Street Overland Park, KS 66210				27			22				- Pack	Analytical* Canter for Testing & Innovati	
Report to: Jason Franks			Email To: jfranks@so	csengineers.com	;jay.martin@	evergy.c		03		Pres					12065 Lebanon R Mount Juliet, TN	37122
Project Description:		City/State	c.11	110	Please	Circle:	-	NH	es	No	03				Phone: 615-758-5 Phone: 800-767-5 Fax: 615-758-585	859
Evergy Sibley Generating Station		Collected:	Zibley		PT MT	ETET	Pres	PE-	oPr	DE	NH	s				C CUD
Phone: 913-681-0030	Client Project 27213169		1	Lab Project #	-SIBLEY		E-Nof	250mIHDPE-HNO3	N-34C	SmIHD	IDPE-	NoPre			SDG # L MO4	1255481
Collected by (print): Whit Martin	Site/Facility	ID #		P.O. #			125mlHDPE-NoPres	10 250	125mlHDPE-NoPres	9056 125miHDPE-NoPres	6010 250miHDPE-HNO3	5mlHDPE-NoPres			Acctnum: AC	
Collected by (signature):	Rush? Same	(Lab MUST Be Day Five		Quote #				a - 6010	9056 12	1	0102	N			Template: T1 Prelogin: P7	
Immediately Packed on Ice N Y	Next D	Day 5 Day Day 10 Day	(Rad Only) by (Rad Only)		Its Needed	No. of	ALKCA	Mg, Na		Chloride, SO4	- eN	9056 1			PM: 206 - Jeff PB:	Carr
Sample ID	Comp/Grab	1	Depth	Date	Time	Cntrs	ALKBI,	Ca, K, I	Chloride	chlorid	K, Mg,	SO4 - 9			Shipped Via: Remarks	Sample # (lab only)
MW-505	Grab	GW	1	18/26/2	01550	5 3	X	0		x	X	S				-01
1W-506	Grab	GW		8/26/2	01450	3	X	X	X							07
1W-512	Grab	GW		8/26/2	01410) 2	X	x								03
viw-804	Grab			8/26/2	0 1320	7 3	x	X				x				. 04
				1												
						_										
										-						
						1										
^s Matrix: SS - Soil AIR - Air F - Filter SW - Groundwater B - Bioassay NW - WasteWater	Remarks:	Ĩ								pH Flow		_ Temp _ Other	a Salara	COC Seal COC Sign Bottles	ample Receipt C Present/Intact med/Accurate: arrive intact: bottles used:	
DW - Drinking Water Samples		d via: xCourier		Trac	king.#	ł	1790 3036 3230					Sufficie VOA Zero	ent volume sent: <u>If Applicat</u> Headspace:	ole _Y _N		
Relinquished by : (Signature) Date: B126/20 1700 2				wed by: (Sign			Trip Blank Received: Yes / No HCL / MeoH TBR			Preservation Correct/Checked:YN RAD Screen <0.5 mR/hr:YN						
Relinquished by: (Signature)		Ale S	20 KG	0 7	Received by: (Signature)			4	temp:/		3 .	C Bottle	is Received:	If preserve	ation required by Lo	gin: Date/Time
Relinquished by : (Signature)	ľ	Date:	Time	: Rece	ived for lab b	y: (Signat	uren	it	5	Date:	12/1	1 Time	7:30	Hold:		Condition: NCF / OK

5

Jared Morrison December 16, 2022

ATTACHMENT 1-6 November 2020 Sampling Event Laboratory Report



ANALYTICAL REPORT

November 25, 2020

SCS Engineers - KS

Sample Delivery Group: Samples Received: Project Number: Description: L1285493 11/13/2020 27213169.20 Evergy - Sibley Generating Station

Report To:

Jason Franks 8575 W. 110th Street Overland Park, KS 66210

Entire Report Reviewed By:

Jubb land

Jeff Carr Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

SDG: L1285493 DATE/TIME: 11/25/20 07:22

TABLE OF CONTENTS

¥	
¹ Cp	
² Tc	
³ Ss	
⁴ Cn	
⁵ Sr	
⁶ Qc	
⁷ Gl	
⁸ Al	

Sc

Cp: Cover Page						
Tc: Table of Contents	2					
Ss: Sample Summary	3					
Cn: Case Narrative	5					
Sr: Sample Results	6					
MW-504 L1285493-01	6					
MW-505 L1285493-02	7					
MW-506 L1285493-03	8					
MW-510 L1285493-04	9					
MW-512 L1285493-05	10					
MW-601 L1285493-06	11					
DUPLICATE L1285493-07	12					
Qc: Quality Control Summary	13					
Gravimetric Analysis by Method 2540 C-2011	13					
Wet Chemistry by Method 9056A	14					
Metals (ICP) by Method 6010B	16					
GI: Glossary of Terms	17					
Al: Accreditations & Locations						
Sc: Sample Chain of Custody						

SDG: L1285493 DATE/TIME: 11/25/20 07:22 PAGE: 2 of 19

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

	SAMPLES					
MW-504 L1285493-01 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 12:05	Received dat 11/13/20 12:30	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1578112	1	11/18/20 02:37	11/18/20 07:45	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 18:07	11/23/20 18:07	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577837	1	11/18/20 22:12	11/19/20 22:56	CCE	Mt. Juliet, TN
			Collected by	Collected date/time		
MW-505 L1285493-02 GW			Jason R. Franks	11/11/20 12:45	11/13/20 12:3	C
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1578112	1	11/18/20 02:37	11/18/20 07:45	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 18:32	11/23/20 18:32	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577837	1	11/18/20 22:12	11/19/20 22:58	CCE	Mt. Juliet, TN
MW-506 L1285493-03 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 10:05	Received da 11/13/20 12:3	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1578112	1	11/18/20 02:37	11/18/20 07:45	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 18:45	11/23/20 18:45	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577837	1	11/18/20 22:12	11/19/20 23:01	CCE	Mt. Juliet, TN
MW-510 L1285493-04 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 10:45	Received dat 11/13/20 12:3	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time	·	
Gravimetric Analysis by Method 2540 C-2011	WG1578112	1	11/18/20 02:37	11/18/20 07:45	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 18:58	11/23/20 18:58	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577837	1	11/18/20 22:12	11/19/20 23:04	CCE	Mt. Juliet, TN
			Collected by	Collected date/time	Received dat	te/time
MW-512 L1285493-05 GW			Jason R. Franks	11/11/20 12:45	11/13/20 12:3	C
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1578112	1	11/18/20 02:37	11/18/20 07:45	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 19:11	11/23/20 19:11	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577837	1	11/18/20 22:12	11/19/20 23:07	CCE	Mt. Juliet, TN
MW-601 L1285493-06 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 11:45	Received dat 11/13/20 12:3	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
		Bildtoll	date/time	date/time	, mary st	
Gravimetric Analysis by Method 2540 C-2011	WG1578112	1	11/18/20 02:37	11/18/20 07:45	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A Metals (ICP) by Method 6010B	WG1580299	1	11/23/20 19:24	11/23/20 19:24	ELN	Mt. Juliet, TN
	WG1577837	1	11/18/20 22:12	11/19/20 22:24	CCE	Mt. Juliet, TN

PROJECT: 27213169.20

SDG: L1285493 DATE/TIME: 11/25/20 07:22

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

DUPLICATE L1285493-07 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 11:50	Received da 11/13/20 12:3	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Gravimetric Analysis by Method 2540 C-2011	WG1578112	1	11/18/20 02:37	11/18/20 07:45	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 20:29	11/23/20 20:29	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577837	1	11/18/20 22:12	11/19/20 23:10	CCE	Mt. Juliet, TN



*

Ср

SDG: L1285493

: 93

CASE NARRATIVE

*

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jubb land

Jeff Carr Project Manager

Τс Ss Cn Sr Qc GI AI Sc

PROJECT: 27213169.20

SDG: L1285493 DATE/TIME: 11/25/20 07:22

2

PAGE: 5 of 19

SAMPLE RESULTS - 01 L1285493

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	ug/l		ug/l		date / time		2
Dissolved Solids	201000		10000	1	11/18/2020 07:45	WG1578112	Tc

Wet Chemistry by Method 9056A

Wet Chemistry b	y Method 9056A	4					³ Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		4 Cp
Chloride	ND		1000	1	11/23/2020 18:07	WG1580299	CII
Fluoride	172		150	1	11/23/2020 18:07	WG1580299	5
Sulfate	33100		5000	1	11/23/2020 18:07	WG1580299	⁵ Sr

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Boron	ND		200	1	11/19/2020 22:56	WG1577837	
Calcium	36300		1000	1	11/19/2020 22:56	WG1577837	

SAMPLE RESULTS - 02 L1285493

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	-						I C
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		2
Dissolved Solids	175000		10000	1	11/18/2020 07:45	WG1578112	T

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time	—	
Dissolved Solids	175000		10000	1	11/18/2020 07:45	WG1578112	2
Wet Chemistry by	Method 90564	7					3
		~					3
	Result	Qualifier	RDL	Dilution	Analysis	Batch	[
			RDL ug/l	Dilution	Analysis date / time	Batch	4
Analyte	Result			Dilution 1		Batch WG1580299	4
Analyte Chloride Fluoride	Result ug/l		ug/l	Dilution 1 1	date / time		[

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Boron	ND		200	1	11/19/2020 22:58	WG1577837	
Calcium	29100		1000	1	11/19/2020 22:58	WG1577837	

SAMPLE RESULTS - 03 L1285493

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

							10	\sim ,
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ľ	
Analyte	ug/l		ug/l		date / time		2	_
Dissolved Solids	451000		10000	1	11/18/2020 07:45	<u>WG1578112</u>	1	Гс

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l	duamer	ug/l	Didton	date / time	Baten
Dissolved Solids	451000		10000	1	11/18/2020 07:45	WG1578112
Wet Chemistry by	/ Method 9056A Result	Qualifier	RDL	Dilution	Analusia	Datab
	Result	Quaimer	RDL	Dilution	Analysis	Batch
Analyte	ug/l	Quanner	ug/l	Dilution	date / time	Batch
Analyte Chloride		Quaimer		1		WG1580299
•	ug/l		ug/l	1 1	date / time	

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	11/19/2020 23:01	WG1577837
Calcium	93400		1000	1	11/19/2020 23:01	WG1577837

SAMPLE RESULTS - 04 L1285493

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

							C C
	Result	Qualifier F	RDL I	Dilution	Analysis	Batch	
Analyte	ug/l	ι	l/gu		date / time		2
Dissolved Solids	475000	1	0000 1	1	11/18/2020 07:45	<u>WG1578112</u>	T

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	475000		10000	1	11/18/2020 07:45	WG1578112
Mot Chamiotry (b)						
wel Chemistry by	/ Method 9056A	λ				
wet Chemistry by			RDI	Dilution	Δnalysis	Batch
	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte			RDL ug/l	Dilution	Analysis date / time	Batch
	Result			Dilution 1		Batch WG1580299
Analyte	Result ug/l		ug/l	Dilution 1 1	date / time	

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	11/19/2020 23:04	WG1577837
Calcium	120000		1000	1	11/19/2020 23:04	WG1577837

SAMPLE RESULTS - 05 L1285493

*

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

								I'C
	Re	esult	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug	g/l		ug/l		date / time		2
Dissolved Solids	50	00080		10000	1	11/18/2020 07:45	WG1578112	T

Wet Chemistry by Method 9056A

Collected date/time: 11/11/20 12:45

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	508000		10000	1	11/18/2020 07:45	WG1578112
Wet Chemistry by	y Method 9056A Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
<u> </u>	9750		1000	1	11/23/2020 19:11	WG1580299
Chloride	5750					
Fluoride	265		150	1	11/23/2020 19:11	WG1580299

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	11/19/2020 23:07	WG1577837
Calcium	115000		1000	1	11/19/2020 23:07	WG1577837

SAMPLE RESULTS - 06 L1285493

Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

							I C
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		2
Dissolved Solids	397000		10000	1	11/18/2020 07:45	WG1578112	Tc

Wet Chemistry by Method 9056A

Collected date/time: 11/11/20 11:45

ordvinietiie Andig		010 0 20					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Dissolved Solids	397000		10000	1	11/18/2020 07:45	WG1578112	
Wet Chemistry by	/ Method 9056A Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Chloride	3190		1000	1	11/23/2020 19:24	WG1580299	
Fluoride	235		150	1	11/23/2020 19:24	WG1580299	
Sulfate	9390		5000	1	11/23/2020 19:24	<u>WG1580299</u>	

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	11/19/2020 22:24	WG1577837
Calcium	100000		1000	1	11/19/2020 22:24	WG1577837

SAMPLE RESULTS - 07 L1285493



Qc

Gl

Â

Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier RDL	. Dilution	Analysis	Batch	Ср
Analyte	ug/l	ug/l		date / time		2
Dissolved Solids	407000	100	00 1	11/18/2020 07:45	<u>WG1578112</u>	Tc

Wet Chemistry by Method 9056A

	by Method 9056 Result		RDL	Dilution	Analysis	Batch	
Arrahata		Qualifier		Diution		Batch	
Analyte	ug/l		ug/l		date / time		
Chloride	3160		1000	1	11/23/2020 20:29	WG1580299	L
Fluoride	236		150	1	11/23/2020 20:29	WG1580299	r
Sulfate	9120		5000	1	11/23/2020 20:29	WG1580299	

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	11/19/2020 23:10	WG1577837
Calcium	101000		1000	1	11/19/2020 23:10	WG1577837

WG1578112

Gravimetric Analysis by Method 2540 C-2011

QUALITY CONTROL SUMMARY L1285493-01,02,03,04,05,06,07

Тс

Ss

Cn

Sr

ິQc

Method Blank (MB)

(MB) R3595277-1 11/18	3/20 07:45			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Dissolved Solids	U		2820	10000

L1285326-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1285326-01 11/18/2	20 07:45 • (DUP)	R3595277-3	11/18/20 0	7:45		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	5370000	5500000	1	2.50		5

L1285493-06 Original Sample (OS) • Duplicate (DUP)

L1285493-06 Ori	ginal Sample	e (OS) • Du	uplicate	(DUP)		
DS) L1285493-06 11/18	/20 07:45 • (DUP) R3595277-4	11/18/20 0)7:45		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
nalyte	ug/l	ug/l		%		%
Dissolved Solids	397000	405000	1	2.00		5

Laboratory Control Sample (LCS)

(LCS) R3595277-2 11/1	LCS) R3595277-2 11/18/20 07:45								
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier				
Analyte	ug/l	ug/l	%	%					
Dissolved Solids	8800000	8800000	100	77.4-123					

ACCOUNT:						
SCS Engineers - KS						

PROJECT: 27213169.20

SDG: L1285493

DATE/TIME: 11/25/20 07:22

PAGE: 13 of 19

Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY L1285493-01,02,03,04,05,06,07

Ср

¹Cn

Sr

Qc

GI

Â

Sc

Method Blank (MB)

(MB) R3596818-1	11/23/20 17:13

	MB Result	MB Qualifier	MB MDL	MB RDL	
nalyte	ug/l		ug/l	ug/l	
ġ	U		379	1000	
ride	U		64.0	150	
ate	U		594	5000	

L1285493-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1285493-01 11/23/2	0 18:07 • (DUP)	R3596818-3	11/23/20 18	3:19		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	ND	ND	1	2.27		15
Fluoride	172	171	1	0.643		15
Sulfate	33100	33100	1	0.0683		15

L1285502-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1285502-01 11/23/20 23:18 • (DUP) R3596818-8 11/23/20 23:31						
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	1510	1490	1	1.47		15
Fluoride	176	175	1	0.569		15
Sulfate	33400	33100	1	1.04		15

Laboratory Control Sample (LCS)

(LCS) R3596818-2 11/23/2	20 17:26				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39500	98.8	80.0-120	
Fluoride	8000	8210	103	80.0-120	
Sulfate	40000	40300	101	80.0-120	

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213169.20

SDG: L1285493

DATE/TIME: 11/25/20 07:22

PAGE: 14 of 19 Wet Chemistry by Method 9056A

QUALITY CONTROL SUMMARY <u>L1285493-01,02,03,04,05,06,07</u>

L1285493-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285493-06 11/23/2	0 19:24 • (MS) F	R3596818-4 11/	23/20 19:37 • (MSD) R35968	18-5 11/23/20 2	20:16						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	3190	55000	54600	104	103	1	80.0-120			0.721	15
Fluoride	5000	235	5280	5250	101	100	1	80.0-120			0.663	15
Sulfate	50000	9390	61500	61000	104	103	1	80.0-120			0.870	15

L1285495-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285495-06 11/23/2	20 21:47 • (MS) F	R3596818-6 11/	23/20 22:00 •	(MSD) R35968	318-7 11/23/20	22:13						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	27100	77400	77900	101	102	1	80.0-120			0.697	15
Fluoride	5000	200	5410	5270	104	101	1	80.0-120			2.71	15
Sulfate	50000	220000	248000	251000	56.6	62.9	1	80.0-120	EV	EV	1.28	15

DATE/TIME: 11/25/20 07:22

Sc

Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY <u>L1285493-01,02,03,04,05,06,07</u>

¹Cp ²Tc ³Ss

⁺Cn

GI

Method Blank (MB)

(MB) R3595509-1 11/19	/20 22:19			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

Spike Amount LCS Result LCS Rec. Rec. Limits LCS Qualifier Analyte ug/l % %		(LCS) R3595509-2 11/19	9/20 22:21				
Analyte ug/l ug/l % %			Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	on 1000 982 98.2 80.0-120	Analyte	ug/l	ug/l	%	%	

L1285493-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285493-06 11/19/20	0 22:24 • (MS) F	R3595509-4 11	/19/20 22:30 •	(MSD) R35955	09-5 11/19/20	22:32							⁸ Al	L
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits		L
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%	9	
Boron	1000	ND	1020	1030	99.6	100	1	75.0-125			0.569	20	SC	L
Calcium	10000	100000	109000	108000	83.7	80.2	1	75.0-125			0.320	20		1

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213169.20

SDG: L1285493 DATE/TIME: 11/25/20 07:22

PAGE: 16 of 19

GLOSSARY OF TERMS

*

Тс

Ss

Cn

Sr

Qc

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

V

PROJECT: 27213169.20

The sample concentration is too high to evaluate accurate spike recoveries.

SDG: L1285493

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alaska17-026NevadiArizonaAZ0612New HArkansas88-0469New JCalifornia2932New MColoradoTN00003New YConnecticutPH-0197North OFloridaE87487North OGeorgiaNELAPNorth OGeorgia^1923North OIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKansasE-10277RhodeKansaiAl30792TenneeLouisianaAl30792TenneeLouisiana324UtahMaryland324UtahMinnesota047-999-395WashirMinssisippiTN00003West WMissouri340Wiscor	Alabama	40660	Nebras
ArizonaA20612New HArkansas88-0469New HCalifornia2932New MColoradoTN00003New MConnecticutPH-0197North GFloridaE87487North GGeorgiaNELAPNorth GGeorgia ¹ 923North GIdahoTN00003OhioIIllinois20008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010SouthLouisianaA130792TennesLouisiana 1LA180010TexasMaireTN0002TexasMarjand324UtahMinnesota047-999-395WashirMississippiTN00003West WMissouri340Wiscont			
Arkansas88-0469New JeCalifornia2932New MColoradoTN00003New YConnecticutPH-0197North GFloridaE87487North GGeorgiaNELAPNorth GGeorgia 1923North GIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010SouthLouisianaAl30792TennesLouisianaAl30792TennesMaineTN0002TexasMaineTN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West WMissouri340Wiscont			
California2932ColoradoTN00003ConnecticutPH-0197FloridaE87487GeorgiaNELAPGeorgia ¹ 923IdahoTN00003Illinois200008IndianaC-TN-01Iowa364Kentucky ¹⁶ 90010Kentucky ² 16LouisianaAl30792LouisianaAl30792Louisiana324MaineTN0003Minnesota047-999-395MinssispipiTN0003Missouri340Wiscouri340			
ColoradoTN00003New YConnecticutPH-0197North OFloridaE87487North OGeorgiaNELAPNorth OGeorgia 1923North OIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South OLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaine9958VirginiaMinnesota047-999-395WashirMississippiTN0003West WMissouri340Wiscouri			
ConnecticutPH-0197North GFloridaE87487North GGeorgiaNELAPNorth GGeorgia 1923North GIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South GLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaine324UtahMinnesota047-999-395WashirMississippiTN0003West WMissouri340Wiscort			
FloridaE87487North OGeorgiaNELAPNorth OGeorgia 1923North OIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South OLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscort			
GeorgiaNELAPNorth OGeorgia 1923North DIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South DLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont			North C
Georgia 1923North IIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Georgia	NELAP	North C
IdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010South ILouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscort	•	923	North D
IndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky ¹⁶ 90010South IKentucky ² 16South ILouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont		TN00003	Ohio–V
Iowa364PensyKansasE-10277RhodeKentucky ¹⁶ 90010South 0Kentucky ² 16South 0LouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Illinois	200008	Oklaho
KansasE-10277RhodeKansasE-10277South JKentucky ¹⁶ 90010South JLouisianaAl30792TennesLouisiana ¹ LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Indiana	C-TN-01	Oregon
Kentucky 1690010South IKentucky 216South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	lowa	364	Pennsy
Kentucky 216South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Kansas	E-10277	Rhode
Kentucky 216South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Kentucky ¹⁶	90010	South C
Louisiana 1LA180010TexasMaineTN0002Texas 1Maryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont		16	South E
MaineTN0002TexasMaryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Louisiana	AI30792	Tennes
Maryland324UtahMassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscont	Louisiana ¹	LA180010	Texas
MassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscont	Maine	TN0002	Texas ⁵
Michigan9958VirginiaMinnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscont	Maryland	324	Utah
Minnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscon	Massachusetts	M-TN003	Vermor
MississippiTN00003West VMissouri340Wiscon	Michigan	9958	Virginia
Missouri 340 Wiscon	Minnesota	047-999-395	Washin
	Mississippi	TN00003	West V
Montana CERT0086 Wyomi	Missouri	340	Wiscon
	Montana	CERT0086	Wyomii

lebraska	NE-OS-15-05			
Nevada	TN-03-2002-34			
New Hampshire	2975			
New Jersey-NELAP	TN002			
New Mexico ¹	n/a			
New York	11742			
North Carolina	Env375			
North Carolina ¹	DW21704			
North Carolina ³	41			
North Dakota	R-140			
Ohio-VAP	CL0069			
Oklahoma	9915			
Oregon	TN200002			
Pennsylvania	68-02979			
Rhode Island	LAO00356			
South Carolina	84004			
South Dakota	n/a			
Tennessee 14	2006			
Texas	T104704245-18-15			
Texas ⁵	LAB0152			
Utah	TN00003			
Vermont	VT2006			
Virginia	460132			
Washington	C847			
West Virginia	233			
Wisconsin	9980939910			
Wyoming	A2LA			

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

SCS Engineers - KS

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



27213169.20

L1285493

PAGE: 18 of 19

11/25/20 07:22

			Billing Info	rmation:					A	nalvsis /	Conta	iner / Pre	servative			Chain of Custody	Page of
SCS Engineers - KS			8575 W.	s Payable 110th Street d Park, KS 6621	0	Pres Chk		n								- Pace	Analytical*
Overland Park, KS 66210																4	
eport to: ason Franks			Email To: jfranks@so	csengineers.com;ja	y.martin@ev	/ergy.c	res									12065 Lebanon Rd Mount Juliet, TN 37	
roject Description:		City/State	-Annonina anna anna anna anna anna anna an	1 MO	Please Ci	(çle:	Nop									Phone: 615-758-58 Phone: 800-767-58 Fax: 615-758-5859	59
vergy - Sibley Generating Station	Client Proje	CONTRACTOR CONTRACTOR	SIBLEY	Lab Project #	PT MC	TET	-E-	33								1	245 492
hone: 913-681-0030	2721316		ľ	AQUAOPKS-S	IBLEY		125mlHDPE-NoPres	DNH-								SDG # //	122 17
Dilected by (print): Jason R. Franks	Site/Facility	ıD#		P.O. #				IHDPI	loPre							Acctnum: AQ	S. And Market
ollected by (signature):	Same	(Lab MUST Be Day Five	Day	Quote #			, F, SO4)	6010 250mHDPE-HNO3	50miHDPE-NoPres							Template: T13 Prelogin: P80	7012
nmediately acked on Ice N Y	Two		y (Rad Only) ay (Rad Only)	Date Results		No. of	is (Cld,	- 6010	Somli			i i ci				PM: 206 - Jeff (PB:	Carr
Sample ID	Comp/Gra	b Matrix *	Depth	Date	Time	Cntrs	Anions	, Ca	TDS 2							Shipped Via: Remarks	Sample # (lab only)
W-504	Gran	GW	1_	111.170	ind	3	X	B X	×								- 01
W-505	GRAG	GW		11/11/20	1205	3	x	X	X				-				- 02
W-506	1	GW	-		1245	3	X	x	X						Contraction of the local sector	in the second	-03
W-510		GW	-	+	1005	3	X	X	X								- 04
W-512		GW	-	+	1245	3	X	X	X				-				-
w 601		GW	-		1145	3	X	x	X								- 96
Ø / MS/MSD	+	GW	-	+		3	X	X	X								-06
UPLICATE 1	++	GW	-		1155	3	x	x	X	<u>.</u>							-07
	\forall			\vee	liso	1	^	^	^								- 4
หล่านการสู่การแก่งการสาวกรรมกำให้การกำรงการสาวสาวสาวสาวสาวสาวสาวสาวสาวสาวสาวสาวสาวส												-					
Matrix: Re	emarks:	1	L	.		1	1	1	1. 1241 (3)	<u> </u>		<u> </u>			Sa	mple Receipt Ch	ecklist
5 - Soil AIR - Air F - Filter W - Groundwater B - Bioassay W - WasteWater										pH . Flow		_ Temp Other		13	COC Signe Bottles a	Present/Intact: d/Accurate: mrive intact:	Y N N
W - Drinking Water	amples returne • UPS Fedi	ed via: Ex Courier	- 5WH	4 DHV		43	/19	1	./1	2/1	.7			-	Sufficier	ottles used: it volume sent: <u>If Applicabl</u> Headspace:	Le N N
elinguished by : (Signature)		Date:	7 Time	000000000000000000000000000000000000000	d by: (Signati	ure)	11	121		rip Blan	k Recei		ICL / MeoH		Preservat	Headspace: ion Correct/Che en <0.5 mR/hr:	ecked: $\begin{array}{c} Y \\ Y \\ Y \\ Y \\ N \end{array}$
elinquished by : (Signeture)		Date:	Time:		d by: (Signati			JE		emp:	g:	C Bottle	IBR es Received 24	:	If preservat	ion required by log	in: Date/Time
elinquished by : (Signature)	1	Date:	Time:	Receive	d for lab by: 7	(Signatu	ire)		C	Date: /	1	Time		0	Hold:		Condition: NCF / K

Jared Morrison December 16, 2022

ATTACHMENT 2 Statistical Analyses

Jared Morrison December 16, 2022

ATTACHMENT 2-1

Fall 2019 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

March 10, 2020

To: Sibley Generating Station 33200 E Johnson Road Sibley, Missouri 64088 Evergy Missouri West, Inc.



From: SCS Engineers

RE: Determination of Statistically Significant Increases - CCR Landfill Fall 2019 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Sibley Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on November 6, 2019. Review and validation of the results from the November 2019 Detection Monitoring Event was completed on December 16, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 13, 2020 and February 3, 2020.

The completed statistical evaluation identified one Appendix III constituent above the prediction limit established for monitoring well MW-512.

Constituent/Monitoring Well	*UPL	Observation November 6, 2019	1st Verification January 13, 2020	2nd Verification February 3, 2020
Sulfate				
MW-512	44.8	45.0	57.5	61.6

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified a SSI above the background prediction limit for sulfate in monitoring well MW-512.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas[™] Output:

Statistical evaluation output from Sanitas[™] for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample result, 1st verification re-sample result (when applicable), 2nd verification re-sample result (when applicable), extra sample results for pH because pH is collected as part of the sampling

Sibley Generating Station Determination of Statistically Significant Increases CCR Landfill March 10, 2020 Page 2 of 2

procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas[™] Configuration Settings:

Screen shots of the applicable Sanitas[™] configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

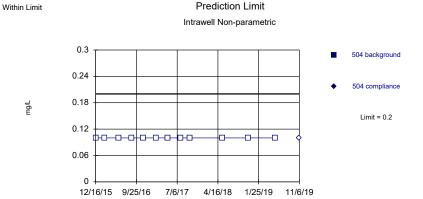
Revision Number	Revision Date	Attachment Revised	Summary of Revisions

Sibley Generating Station Determination of Statistically Significant Increases CCR Landfill March 10, 2020

ATTACHMENT 1

Sanitas[™] Output

Sanitas[™] v.9.6.25 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 2/21/2020 3:47 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

Prediction Limit Within Limit Intrawell Non-parametric 0.3 505 background 0.24 505 compliance 0.18 mg/L Limit = 0.20.12 -0--0 0.06 0 12/16/15 9/25/16 7/6/17 4/16/18 1/25/19 11/6/19

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

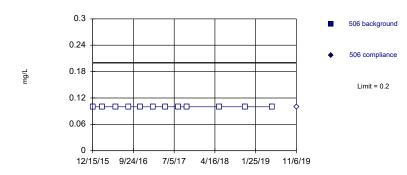
Prediction Limit

Intrawell Non-parametric

Sanitas[™] v.9.6.25 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.

Within Limit

Prediction Limit Intrawell Non-parametric



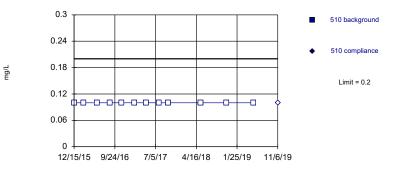
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Sanitas¹⁹ v.9.6.25 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values. Within Limit

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

it



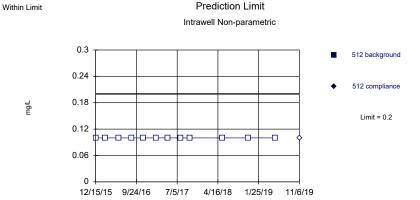
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Constituent: Boron Analysis Run 2/21/2020 3:49 PM View: LF III

				olbicy olioniti oc	So Engineers Dua	a. Obley		
	504	504	505	505	506	506	510	510
12/15/2015					<0.2		<0.2	
12/16/2015	<0.2		<0.2					
2/18/2016	<0.2		<0.2		<0.2		<0.2	
5/25/2016	<0.2		<0.2		<0.2		<0.2	
8/23/2016	<0.2		<0.2		<0.2		<0.2	
11/10/2016							<0.2	
11/11/2016	<0.2		<0.2		<0.2			
2/8/2017	<0.2		<0.2		<0.2		<0.2	
5/3/2017							<0.2	
5/4/2017	<0.2		<0.2		<0.2			
8/1/2017	<0.2		<0.2				<0.2	
8/4/2017					<0.2			
10/3/2017	<0.2		<0.2		<0.2		<0.2	
5/17/2018	<0.2		<0.2		<0.2		<0.2	
11/15/2018	<0.2		<0.2		<0.2		<0.2	
5/22/2019	<0.2		<0.2		<0.2		<0.2	
11/6/2019		<0.2		<0.2		<0.2		<0.2

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 2/21/2020 3:47 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

Prediction Limit Within Limit Intrawell Non-parametric 0.3 601 background 0.24 601 compliance 0.18 mg/L Limit = 0.20.12 -0--0 0.06 0 12/15/15 9/24/16 7/5/17 4/16/18 1/25/19 11/6/19

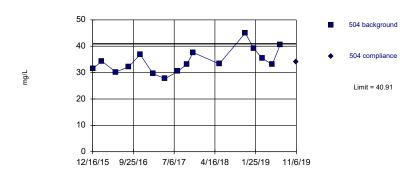
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonalized.

Constituent: Boron Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas[™] v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric



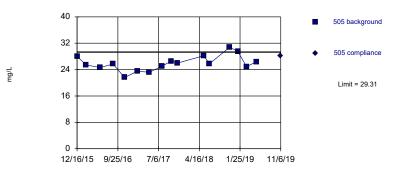
Background Data Summary: Mean=34.4, Std. Dev.=4.551, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9536, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188. Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

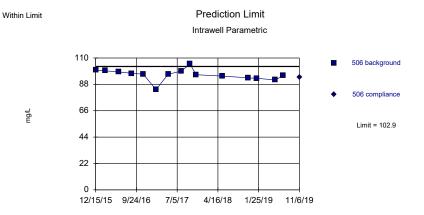


Background Data Summary: Mean=25.96, Std. Dev.=2.346, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9775, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron, Calcium Analysis Run 2/21/2020 3:49 PM View: LF III

Sibley Client: SUS Engineers Data: Sibley												
	512	512	601	601	504	504	505	505				
12/15/2015	<0.2		<0.2									
12/16/2015					31.5		28					
2/18/2016	<0.2		<0.2		34.3		25.4					
5/25/2016	<0.2				30.2		24.6					
5/26/2016			<0.2									
8/23/2016	<0.2		<0.2		32.2		25.7					
11/11/2016	<0.2		<0.2		36.9		21.6					
2/8/2017	<0.2		<0.2		29.6		23.5					
5/3/2017	<0.2		<0.2									
5/4/2017					27.7		23.2					
8/1/2017	<0.2		<0.2		30.5		25.1					
10/3/2017	<0.2		<0.2		33.2		26.6					
11/16/2017					37.6		26					
5/17/2018	<0.2		<0.2		33.3		28.2					
6/27/2018							25.8					
11/15/2018	<0.2		<0.2		45		30.8					
1/11/2019					39.3		29.5					
3/12/2019					35.4		24.9					
5/22/2019	<0.2		<0.2		33.1		26.4					
7/16/2019					40.6							
11/6/2019		<0.2		<0.2		34.1		28.2				

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

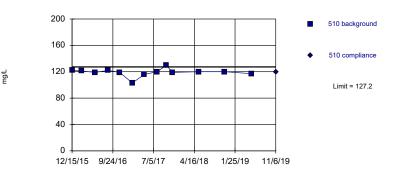


Background Data Summary: Mean=95.97, Std. Dev.=4.734, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @dalpha = 0.01, calculated = 0.9252, critical = 0.835. Kappa = 1.458 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit



Background Data Summary (based on cube transformation): Mean=1699613, Std. Dev.=238011, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8274, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 2/21/2020 3:47 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

Constituent: Calcium Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric

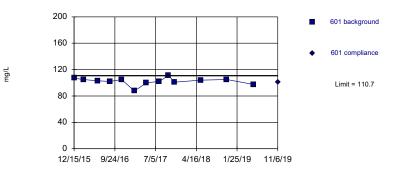


Background Data Summary: Mean=102.6, Std. Dev.=6.094, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.892, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit



Background Data Summary: Mean=102.3, Std. Dev.=5.577, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8789, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

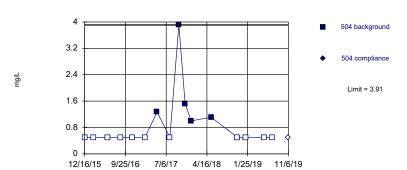
Constituent: Calcium Analysis Run 2/21/2020 3:49 PM View: LF III

				Sibley Client: Si	CS Engineers Dai	la: Sibley		
	506	506	510	510	512	512	601	601
12/15/2015	100		122		98.1		107	
2/18/2016	99.3		121		100		105	
5/25/2016	98.3		119		98.9			
5/26/2016							103	
8/23/2016	97.2		122		103		102	
11/10/2016			119					
11/11/2016	96.5				100		105	
2/8/2017	83.6		103		86.4		87.5	
5/3/2017			116		98.4		100	
5/4/2017	96.4							
8/1/2017			120		102		102	
8/4/2017	99							
10/3/2017	105		130		110		111	
11/16/2017	96		119		101		101	
5/17/2018	94.9		120		104		104	
11/15/2018	93.4		120		110		105	
1/11/2019	93				110			
3/12/2019					108			
5/22/2019	91.7		117		104		97.4	
7/16/2019	95.3				108			
11/6/2019		93.7		120		105		101

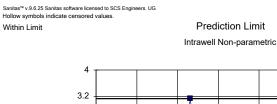
Sanitas^w v.9.6.25 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values. Within Limit

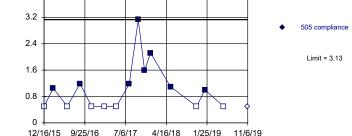
Prediction Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 16 background values. 68.75% NDs. Well-constituent pair annual alpha = 0.002051. Individual comparison alpha = 0.001026 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.





505 background

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 15 background values. 46.67% NDs. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley Constituent: Chloride Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas[™] v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric



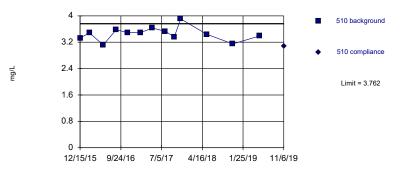
Background Data Summary: Mean=6.479, Std. Dev.=0.7774, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8712, critical = 0.851. Kappa = 1.413 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

mg/L

Prediction Limit

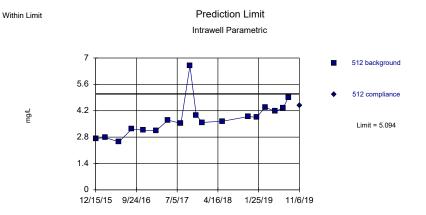


Background Data Summary: Mean=3.454, Std. Dev.=0.2034, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9481, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 2/21/2020 3:49 PM View: LF III

	Sibley Client: SCS Engineers Data: Sibley												
	504	504	505	505	506	506	510	510					
12/15/2015					6.45		3.33						
12/16/2015	<1		<1										
2/18/2016	<1		1.05		6.15		3.48						
5/25/2016	<1		<1		5.76		3.12						
8/23/2016	<1		1.19		6.16		3.58						
11/10/2016							3.49						
11/11/2016	<1		<1		6.13								
2/8/2017	<1		<1		5.89		3.49						
5/3/2017							3.63						
5/4/2017	1.27		<1		6.15								
8/1/2017	<1		1.18				3.53						
8/4/2017					5.45								
10/3/2017	3.91		3.13		8.74		3.36						
11/16/2017	1.52		1.59		6.15		3.91						
12/28/2017	1		2.12										
5/17/2018	1.11		1.09		6.69		3.44						
6/27/2018					5.8								
11/15/2018	<1		<1		6.69		3.15						
1/11/2019	<1		1		6.39								
5/22/2019	<1		<1		7.05		3.39						
7/16/2019	<1				7.33								
8/21/2019					7.17								
11/6/2019		<1		<1		6.66		3.08					

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



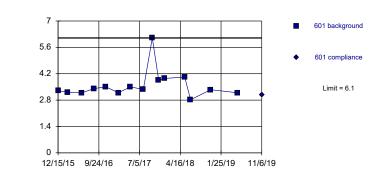
Background Data Summary: Mean=3.786, Std. Dev.=0.9366, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8846, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05123). Report Japha = 0.00188.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

mg/L

Prediction Limit Intrawell 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 15 background values. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 2/21/2020 3:47 PM View: LF III

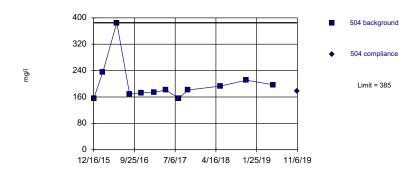
Sibley Client: SCS Engineers Data: Sibley

Constituent: Chloride Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Non-parametric

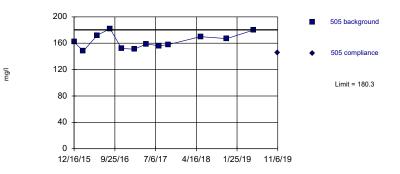


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric

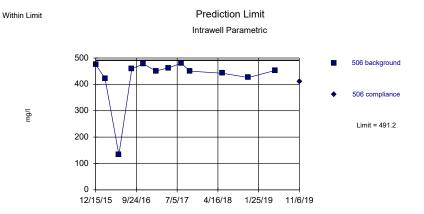


Background Data Summary: Mean=163.1, Std. Dev.=11.19, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9461, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride, Dissolved Solids Analysis Run 2/21/2020 3:49 PM View: LF III

				Sibley Cl	lient: SCS Engineer	rs Data: Sibley				
	512	512	601	601	504	504	505	505		
12/15/2015	2.72		3.3							
12/16/2015					155		162			
2/18/2016	2.78		3.22		236		148			
5/25/2016	2.55				385		172			
5/26/2016			3.18							
8/23/2016	3.23		3.41		168		182			
11/11/2016	3.17		3.51		173		152			
2/8/2017	3.14		3.19		174		151			
5/3/2017	3.7		3.5							
5/4/2017					181		159			
8/1/2017	3.53		3.37		156		156			
10/3/2017	6.59		6.1		181		158			
11/16/2017	3.97		3.87							
12/28/2017	3.58		3.95							
5/17/2018	3.64		4.02		193		170			
6/27/2018			2.82							
11/15/2018	3.89		3.35		211		167			
1/11/2019	3.85									
3/12/2019	4.38									
5/22/2019	4.17		3.19		197		180			
7/16/2019	4.35									
8/21/2019	4.91									
11/6/2019		4.48		3.09		177		146		

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

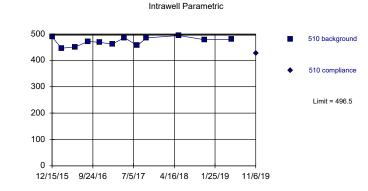


Background Data Summary (based on x^5 transformation): Mean=1.8e13, Std. Dev.=6.8e12, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8456, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



l/gr



Prediction Limit

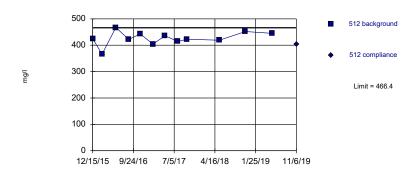
Background Data Summary: Mean=472.3, Std. Dev.=15.74, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.95, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley Constituent: Dissolved Solids Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

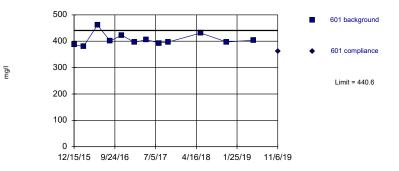
Prediction Limit



Background Data Summary: Mean=426.3, Std. Dev.=25.95, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9454, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188. Sanitas[™] v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit



Background Data Summary: Mean=406.3, Std. Dev.=22.23, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8601, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:49 PM View: LF III

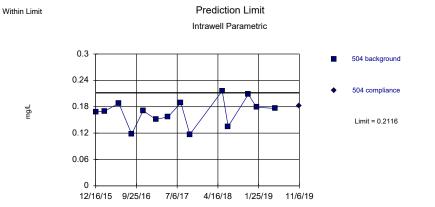
				olbicy olicini. Ot	Do Engineero Dua	a. Obley		
	506	506	510	510	512	512	601	601
12/15/2015	475		489		425		387	
2/18/2016	423		446		366		380	
5/25/2016	133		451		467			
5/26/2016							461	
8/23/2016	459		472		422		401	
11/10/2016			468					
11/11/2016	477				443		423	
2/8/2017	451		462		404		396	
5/3/2017			486		436		406	
5/4/2017	462							
8/1/2017			456		414		393	
8/4/2017	480							
10/3/2017	450		485		423		397	
5/17/2018	442		494		419		431	
11/15/2018	426		478		452		397	
5/22/2019	453		480		445		404	
11/6/2019		410		427		403		361

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

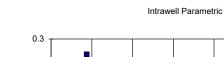


Within Limit

mg/L



Background Data Summary: Mean=0.1674, Std. Dev.=0.02979, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.958, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05128). Report alpha = 0.0188.





Prediction Limit

Background Data Summary: Mean=0.1867, Std. Dev.=0.04296, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9585, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 2/21/2020 3:47 PM View: LF III

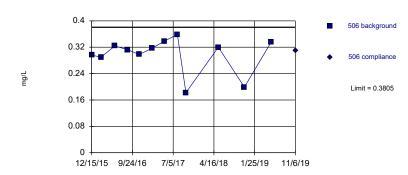
Sibley Client: SCS Engineers Data: Sibley

Constituent: Fluoride Analysis Run 2/21/2020 3:47 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas[™] v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

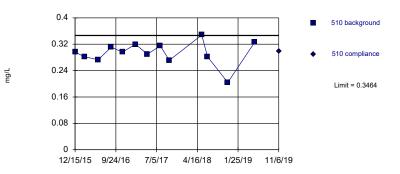


Background Data Summary: Mean=0.2976, Std. Dev.=0.05377, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8104, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.00188.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit



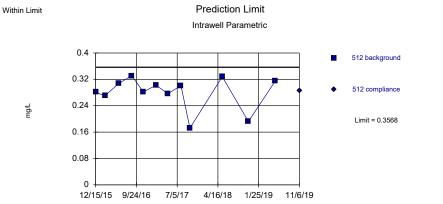
Background Data Summary: Mean=0.2934, Std. Dev.=0.03503, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9129, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.00188.

Constituent: Fluoride Analysis Run 2/21/2020 3:49 PM View: LF III

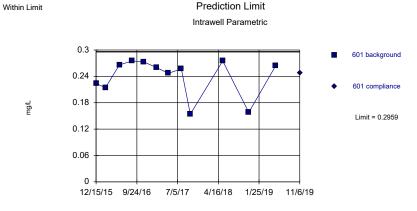
	1	504	504	505	505	506	506	510	510		
	12/15/2015					0.296		0.296			
	12/16/2015	0.168		0.164							
:	2/18/2016	0.17		0.174		0.29		0.282			
!	5/25/2016	0.188		0.143		0.324		0.273			
;	8/23/2016	0.118		0.265		0.312		0.311			
	11/10/2016							0.296			
	11/11/2016	0.171		0.177		0.298					
:	2/8/2017	0.151		0.217		0.317		0.32			
!	5/3/2017							0.29			
!	5/4/2017	0.157		0.16		0.338					
;	8/1/2017	0.189		0.206				0.315			
;	8/4/2017					0.359					
	10/3/2017	0.117		0.124		0.182		0.271			
ł	5/17/2018	0.216		0.247		0.32		0.348			
	6/27/2018	0.135						0.282			
	11/15/2018	0.208		0.212		0.199		0.204			
	1/11/2019	0.179									
!	5/22/2019	0.176		0.151		0.336		0.326			
	11/6/2019		0.182		0.198		0.309		0.298		

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG





Background Data Summary: Mean=0.2799, Std. Dev.=0.04987, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8252, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05123). Report alpha = 0.00188.



Background Data Summary (based on square transformation): Mean=0.0588, Std. Dev.=0.01866, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8225, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 2/21/2020 3:48 PM View: LF III

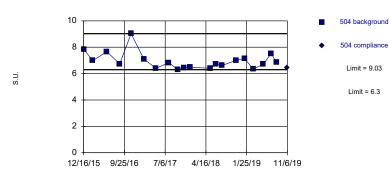
Sibley Client: SCS Engineers Data: Sibley

Constituent: Fluoride Analysis Run 2/21/2020 3:48 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell Non-parametric

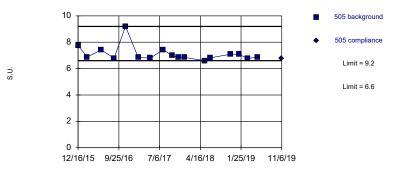


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 20 background values. Well-constituent pair annual alpha = 0.00225. Individual comparison alpha = 0.001125 (1 of 3). Seasonality was not detected with 95% confidence.

Sanitas[™] v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Non-parametric

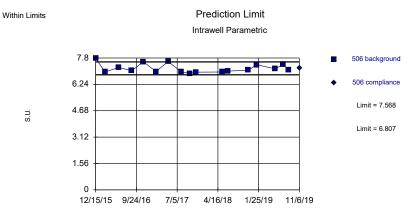


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 17 background values. Well-constituent pair annual alpha = 0.003639. Individual comparison alpha = 0.00182 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: Fluoride, pH Analysis Run 2/21/2020 3:49 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley											
	512	512	601	601	504	504	505	505			
12/15/2015	0.281		0.224								
12/16/2015					7.83		7.74				
2/18/2016	0.27		0.214		6.99		6.88				
5/25/2016	0.308				7.66		7.42				
5/26/2016			0.266								
8/23/2016	0.331		0.275		6.74		6.79				
11/11/2016	0.282		0.273		9.03		9.2				
2/8/2017	0.302		0.26		7.09		6.84				
5/3/2017	0.277		0.247								
5/4/2017					6.4		6.8				
8/1/2017	0.301		0.257		6.83		7.44				
10/3/2017	0.172		0.154		6.3		6.98				
11/16/2017					6.45		6.84				
12/28/2017					6.47		6.85				
5/17/2018	0.328		0.275		6.41		6.6				
6/27/2018					6.7		6.82				
8/8/2018					6.62						
11/15/2018	0.192		0.158		7.01		7.09				
1/11/2019					7.15		7.08				
3/12/2019					6.34		6.78				
5/22/2019	0.315		0.264		6.7		6.85				
7/16/2019					7.53						
8/21/2019					6.85						
11/6/2019		0.286		0.248		6.45		6.75			

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Background Data Summary: Mean=7.188, Std. Dev.=0.2694, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8664, critical = 0.851. Kappa = 1.413 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

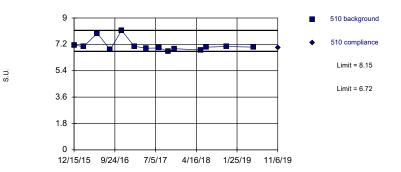
> Constituent: pH Analysis Run 2/21/2020 3:48 PM View: LF III Siblev

Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell 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. Limits are highest and lowest of 14 background values. Well-constituent pair annual alpha = 0.006393. Individual comparison alpha = 0.003199 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

> Constituent: pH Analysis Run 2/21/2020 3:48 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell Parametric

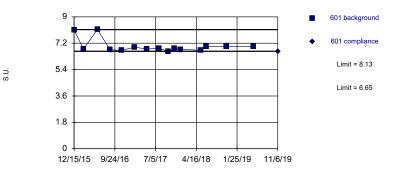


Background Data Summary: Mean=7.071, Std. Dev.=0.2785, n=20. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8734, critical = 0.868. Kappa = 1.362 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell Non-parametric



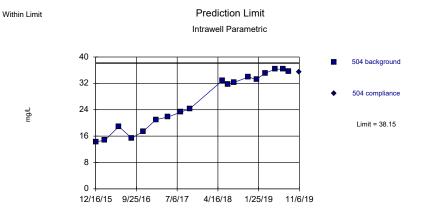
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 2/21/2020 3:49 PM View: LF III

Siblev	Client: SCS Engineers	Data: Siblev	

				Sibley Cl	lient: SCS Engineers	B Data: Sibley			
	506	506	510	510	512	512	601	601	
12/15/2015	7.78		7.14		7.29		8.11		
2/18/2016	6.97		7.05		7		6.8		
5/25/2016	7.24		7.95		7.18				
5/26/2016							8.13		
8/23/2016	7.04		6.84		6.77		6.75		
11/10/2016			8.15						
11/11/2016	7.58				6.8		6.71		
2/8/2017	7		7.06		7.7		6.93		
5/3/2017			6.94		6.92				
5/4/2017	7.59						6.81		
8/1/2017			6.95		6.97		6.84		
8/4/2017	6.98								
10/3/2017	6.88		6.72		6.79		6.65		
11/16/2017	6.96		6.9		6.92		6.84		
12/28/2017					6.88		6.78		
5/17/2018	6.97		6.82		6.85		6.72		
6/27/2018	7.02		7.01		6.95		6.98		
8/8/2018					6.78				
11/15/2018	7.08		7.05		7.09		6.96		
1/11/2019	7.4				7.34				
3/12/2019					7.23				
5/22/2019	7.16		7.01		7.25		6.97		
7/16/2019	7.43				7.7				
8/21/2019	7.11				7.01				
11/6/2019		7.2		6.97		7.02		6.65	
1/13/2020						7.13 Extra			
2/3/2020						6.93 Extra	Sample		

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

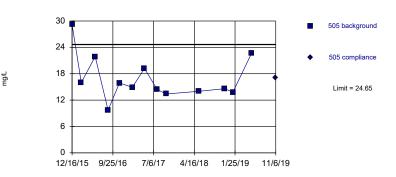


Background Data Summary: Mean=26.58, Std. Dev.=8.293, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8677, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05123). Report Japha = 0.00188.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit



Background Data Summary: Mean=16.9, Std. Dev.=5.117, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8783, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 2/21/2020 3:48 PM View: LF III

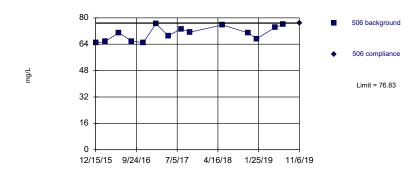
Sibley Client: SCS Engineers Data: Sibley

Constituent: Sulfate Analysis Run 2/21/2020 3:48 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric

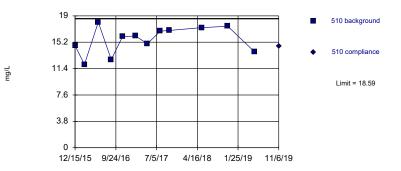


Background Data Summary: Mean=70.47, Std. Dev.=4.276, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9125, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit



Background Data Summary: Mean=15.58, Std. Dev.=1.955, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9362, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 2/21/2020 3:48 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Constituent: Sulfate Analysis Run 2/21/2020 3:49 PM View: LF III

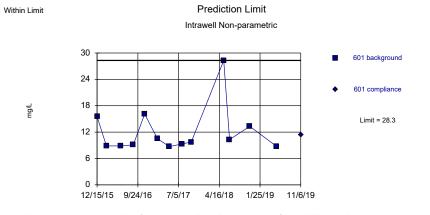
	Sibley Client: SCS Engineers Data: Sibley											
	504	504	505	505	506	506	510	510				
12/15/2015					64.8		14.7					
12/16/2015	14.3		29.2									
2/18/2016	14.7		16		65.6		12					
5/25/2016	18.9		21.9		71		18.1					
8/23/2016	15.4		9.73		65.8		12.7					
11/10/2016							16					
11/11/2016	17.4		15.9		65							
2/8/2017	21		14.9		76.5		16.1					
5/3/2017							15					
5/4/2017	21.8		19.2		69.2							
8/1/2017	23.3		14.4				16.8					
8/4/2017					73.3							
10/3/2017	24.3		13.4		71.3		16.9					
5/17/2018	32.8		14		75.7		17.3					
6/27/2018	31.8											
8/8/2018	32.3											
11/15/2018	33.9		14.6		70.8		17.5					
1/11/2019	33.2		13.8		67.3							
3/12/2019	35.1											
5/22/2019	36.3		22.7		74.2		13.8					
7/16/2019	36.3				76.1							
8/21/2019	35.6											
11/6/2019		35.4		17.1		76.8		14.6				

Sanitas[™] v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Background Data Summary: Mean=32.21, Std. Dev.=9.019, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8926, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.



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 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 2/21/2020 3:48 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

Constituent: Sulfate Analysis Run 2/21/2020 3:48 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Constituent: Sulfate Analysis Run 2/21/2020 3:49 PM View: LF III

	512	512	601	601
12/15/2015	23		15.5	
2/18/2016	21		8.87	
5/25/2016	23.1			
5/26/2016			8.85	
8/23/2016	24.4		9.11	
11/11/2016	24		16.1	
2/8/2017	27.8		10.5	
5/3/2017	27.3		8.71	
8/1/2017	28.1		9.33	
10/3/2017	28.2		9.76	
5/17/2018	29.6		28.3	
6/27/2018	30.3		10.3	
8/8/2018	30.9			
11/15/2018	51.4		13.3	
1/11/2019	43.3			
3/12/2019	44.2			
5/22/2019	40.1		8.74	
7/16/2019	42.1			
8/21/2019	41			
11/6/2019		45		11.4
1/13/2020		57.5 1st Verific	cation	
2/3/2020		61.6 2nd Verifi	ication	

Sibley Client: SCS Engineers Data: Sibley Printed 2/21/2020, 3:49 PM

			Obley	Client. 000 Engineers E	,	ninteu z		0, 0.401 10			
<u>Constituent</u>	Well	<u>Upper Lim.</u>	Lower Lim.	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>		<u>Transform</u>	<u>Alpha</u>	Method
Boron (mg/L)	504	0.2	n/a	11/6/2019	0.1ND	No	12	100	n/a	0.002173	()
Boron (mg/L)	505	0.2	n/a	11/6/2019	0.1ND	No	12	100	n/a		NP Intra (NDs) 1 of 3
Boron (mg/L)	506	0.2	n/a	11/6/2019	0.1ND	No	12	100	n/a	0.002173	· · · ·
Boron (mg/L)	510	0.2	n/a	11/6/2019	0.1ND	No	12	100	n/a	0.002173	()
Boron (mg/L)	512	0.2	n/a	11/6/2019	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	601	0.2	n/a	11/6/2019	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Calcium (mg/L)	504	40.91	n/a	11/6/2019	34.1	No	16	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	505	29.31	n/a	11/6/2019	28.2	No	16	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	506	102.9	n/a	11/6/2019	93.7	No	15	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	510	127.2	n/a	11/6/2019	120	No	13	0	x^3	0.00188	Param Intra 1 of 3
Calcium (mg/L)	512	111.3	n/a	11/6/2019	105	No	16	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	601	110.7	n/a	11/6/2019	101	No	13	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	504	3.91	n/a	11/6/2019	0.5ND	No	16	68.75	n/a	0.001026	NP Intra (NDs) 1 of 3
Chloride (mg/L)	505	3.13	n/a	11/6/2019	0.5ND	No	15	46.67	n/a	0.001313	NP Intra (normality)
Chloride (mg/L)	506	7.578	n/a	11/6/2019	6.66	No	17	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	510	3.762	n/a	11/6/2019	3.08	No	13	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	512	5.094	n/a	11/6/2019	4.48	No	18	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	601	6.1	n/a	11/6/2019	3.09	No	15	0	n/a	0.001313	NP Intra (normality)
Dissolved Solids (mg/l)	504	385	n/a	11/6/2019	177	No	12	0	n/a	0.002173	NP Intra (normality)
Dissolved Solids (mg/l)	505	180.3	n/a	11/6/2019	146	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	506	491.2	n/a	11/6/2019	410	No	12	0	x^5	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	510	496.5	n/a	11/6/2019	427	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	512	466.4	n/a	11/6/2019	403	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	601	440.6	n/a	11/6/2019	361	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	504	0.2116	n/a	11/6/2019	0.182	No	14	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	505	0.2529	n/a	11/6/2019	0.198	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	506	0.3805	n/a	11/6/2019	0.309	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	510	0.3464	n/a	11/6/2019	0.298	No	13	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	512	0.3568	n/a	11/6/2019	0.286	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	601	0.2959	n/a	11/6/2019	0.248	No	12	0	x^2	0.00188	Param Intra 1 of 3
pH (S.U.)	504	9.03	6.3	11/6/2019	6.45	No	20	0	n/a	0.001125	NP Intra (normality)
pH (S.U.)	505	9.2	6.6	11/6/2019	6.75	No	17	0	n/a	0.00182	NP Intra (normality)
pH (S.U.)	506	7.568	6.807	11/6/2019	7.2	No	17	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	510	8.15	6.72	11/6/2019	6.97	No	14	0	n/a	0.003199	NP Intra (normality)
pH (S.U.)	512	7.45	6.692	2/3/2020	6.93	No	20	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	601	8.13	6.65	11/6/2019	6.65	No	15	0	n/a	0.002625	NP Intra (normality)
Sulfate (mg/L)	504	38.15	n/a	11/6/2019	35.4	No	18	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	505	24.65	n/a	11/6/2019	17.1	No	13	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	506	76.83	n/a	11/6/2019	76.8	No	14	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	510	18.59	n/a	11/6/2019	14.6	No	12	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	512	44.8	n/a	2/3/2020	61.6	Yes	18	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	601	28.3	n/a	11/6/2019	11.4	No	13	0	n/a	0.001886	NP Intra (normality)

Sibley Generating Station Determination of Statistically Significant Increases CCR Landfill March 10, 2020

ATTACHMENT 2

Sanitas[™] Configuration Settings

Data	Output	Trend Test	Control Cht	Prediction Lim	Tolerance Lim	Conf/Tol Int	ANOVA	Welchs	Other Tests
Exclud	le data flag	s: i							
Data	Reading O	ptions							
🔘 In	ndividual Ob	oservations							
\bigcirc M	lean of Eac	:h:	 Month 						
\bigcirc M	ledian of Ea	ach:	Seasor	n					
Setup	Seasons	ace Handling. Process Resa							

Data O	Output	Trend Test	Control Cht	Prediction Lim	Tolerance Lim	Conf/Tol Int	ANOVA	Welchs	Other Tests
🗌 Use M	Nodified /	Alpha 0	.02						
🗹 Test F	Residuals	s For Normality	y (Parametric t	est only) usir	ng Shapiro-Wilk/Fr	ancia 🗸 🗸	at Alpha	= 0.01	\sim
🗌 C a	ontinue F	Parametric if U	Inable to Nom	nalize					
Use Use Natu Nev Use Use Use	Ladder ural Log ver Trans Specific Best W	: Transformati	mation						
Includ	95.	% Confidence	-	und Trend Line	Non-Detects Per	cent > 75			
					this tab because, f report in its own r				's Slope /

Data Output Trend Test Control Cht	Prediction Lim	Tolerance Lim	Conf/Tol Int	ANOVA	Welchs	Other Tests				
 Test for Normality using Shapiro-Wilk/France Use Non-Parametric Test when Non-Detect Use Aitchison's Adjustment when Non-Detect 	ts Percent > 5	at Alpha = 0.01 Image: Constraint of the second								
Optional Further Refinement: Use Aitchiso	n's v w	hen NDs % > [50	Use Best W		r Log				
Use Poisson Prediction Limit when Non-De	tects Percent >	90		Plot Transfo	ormed Value	es				
Deseasonalize (Intra- and InterWell) If Seasonality Is Detected If Seasonality Is Detected Or Insufficient Always (When Sufficient Data) N Always Use Non-Parametric Facility a Statistical Evaluations per Year: Constituents Analyzed: 	to Test Never	Plot Bar Override St Override DI	Background Tr ckground Data andard Deviati	on:	ppa:	a = 0.05 ∨				
Downgradient (Compliance) Wells:	4		Show Deselected Data Lighter							
Sampling Plan Comparing Individual Observations 1 of 1 1 1 of 2 1 of 3 (2 of 4 ("Modified California")	◯ 1 of 4	 Highest Most R 	etric Limit = stric Limit when /Second High ecent PQL if a ecent Backgro	100% Non est Backgro vailable, or	ound Value MDL					

Data Output Trend Test Control Cht Prediction Lim Tolerance	Lim Conf/Tol Int ANOVA Welchs Other Tests
Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney	
Use Modified Alpha 2-Tailed Test Mode	Combine Background Wells on Mann-Whitney
Outlier Tests	
 EPA 1989 Outlier Screening (fixed alpha of 0.05) 	
• Dixon's at $\alpha = 0.05 \lor$ or if n > 22 \lor Rosner's at $\alpha = 0.01 \lor$	Use EPA Screening to establish Suspected Outliers
O Tukey's Outlier Screening, with IQR Multiplier = 3.0 Use	Ladder of Powers to achieve Best W Stat
✓ Test For Normality using Shapiro-Wilk/Francia ∨ at Alpha = 0.1	~
Stop if Non-Normal	
O Continue with Parametric Test if Non-Normal	
O Tukey's if Non-Normal, with IQR Multiplier = 3.0 Use	Ladder of Powers to achieve Best W Stat
✓ No Outlier If Less Than 3.0 Times Median	
Apply Rules found in Ohio Guidance Document 0715	
Combine Background Wells on the Outlier Report	
Piper, Stiff Diagram	
Combine Wells	✓ Label Constituents
Combine Dates	✓ Label Axes
Use Default Constituent Names	Note Cation-Anion Balance (Piper only)
O Use Constituent Definition File Edit	

ATTACHMENT 2-2

Spring 2020 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

September 23, 2020

To: Sibley Generating Station 33200 E Johnson Road Sibley, Missouri 64088 Evergy Missouri West, Inc.



From: SCS Engineers

RE: Determination of Statistically Significant Increases - CCR Landfill Spring 2020 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Sibley Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on May 18, 2020. Review and validation of the results from the May 2020 Detection Monitoring Event was completed on June 26, 2020, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on July 14, 2020 and August 26, 2020.

The completed statistical evaluation identified one Appendix III constituent above the prediction limits established for monitoring wells MW-505 and MW-506, and three Appendix III constituents above the prediction limits established for monitoring well MW-512.

Constituent/Monitoring Well	*UPL	Observation May 18, 2020	1st Verification July 14, 2020	2nd Verification August 26, 2020
Calcium				
MW-505	29.31	30.5	32.4	30.3
Chloride				
MW-512	5.094	7.69	8.83	8.79
Total Dissolved Solids				
MW-512	466.4	481	501	493
Sulfate				
MW-506	76.83	80.0	78.6	79.6
MW-512	44.8	71.6	77.6	80.1

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The

Sibley Generating Station Determination of Statistically Significant Increases CCR Landfill September 23, 2020 Page 2 of 2

statistical evaluation identified five SSIs above the background prediction limits. These include calcium in upgradient monitoring well MW-505, sulfate in monitoring well MW-506, and chloride, total dissolved solids, and sulfate in monitoring well MW-512.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas[™] Output:

Statistical evaluation output from Sanitas[™] for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample results, 1st verification re-sample results (when applicable), 2nd verification re-sample results (when applicable), extra sample results for pH because pH is collected as part of the sampling procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas[™] Configuration Settings:

Screen shots of the applicable Sanitas[™] configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

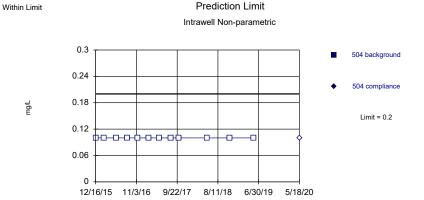
Revision Number	Revision Date	Attachment Revised	Summary of Revisions

Sibley Generating Station Determination of Statistically Significant Increases CCR Landfill September 23, 2020

ATTACHMENT 1

Sanitas[™] Output

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/8/2020 7:19 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

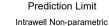
Prediction Limit Within Limit Intrawell Non-parametric 0.3 505 background 0.24 505 compliance 0.18 mg/L Limit = 0.20.12 <u>40-0-0-0-0-00</u> -0--0-0 0.06 0 12/16/15 11/3/16 9/22/17 8/11/18 6/30/19 5/18/20

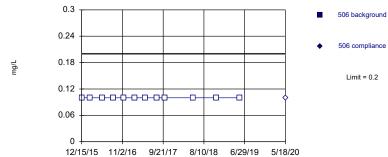
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

> Constituent: Boron Analysis Run 9/8/2020 7:19 PM View: LF III Sibley Client: SCS Engineers Data: Sibley



Within Limit





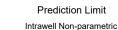
506 compliance

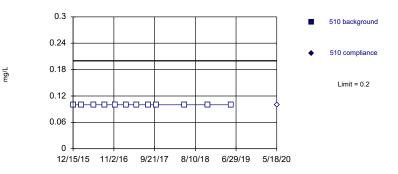
Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.

Within Limit

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.





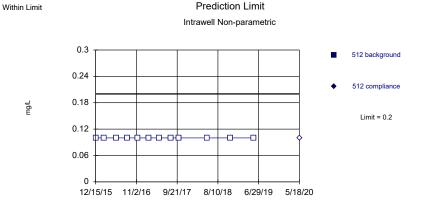
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/8/2020 7:21 PM View: LF III

	504	504	505	505	506	506	510	510			
12/15/2015					<0.2		<0.2				
12/16/2015	<0.2		<0.2								
2/18/2016	<0.2		<0.2		<0.2		<0.2				
5/25/2016	<0.2		<0.2		<0.2		<0.2				
8/23/2016	<0.2		<0.2		<0.2		<0.2				
11/10/2016							<0.2				
11/11/2016	<0.2		<0.2		<0.2						
2/8/2017	<0.2		<0.2		<0.2		<0.2				
5/3/2017							<0.2				
5/4/2017	<0.2		<0.2		<0.2						
8/1/2017	<0.2		<0.2				<0.2				
8/4/2017					<0.2						
10/3/2017	<0.2		<0.2		<0.2		<0.2				
5/17/2018	<0.2		<0.2		<0.2		<0.2				
11/15/2018	<0.2		<0.2		<0.2		<0.2				
5/22/2019	<0.2		<0.2		<0.2		<0.2				
5/18/2020		<0.2		<0.2		<0.2		<0.2			

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/8/2020 7:19 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

Prediction Limit Within Limit Intrawell Non-parametric 0.3 601 background 0.24 601 compliance 0.18 mg/L Limit = 0.20.12 <u>40-0-0-0-0-00</u> -0-____ 0.06 0 12/15/15 11/2/16 9/21/17 8/10/18 6/29/19 5/18/20

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

> Constituent: Boron Analysis Run 9/8/2020 7:19 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric



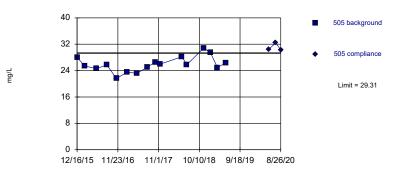
504 compliance

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=25.96, Std. Dev.=2.346, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9775, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Background Data Summary: Mean=34.4, Std. Dev.=4.551, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9536, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

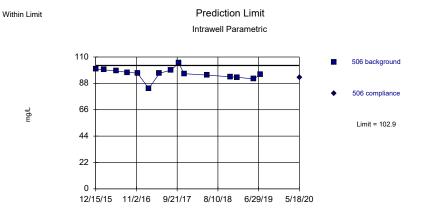
Constituent: Boron, Calcium Analysis Run 9/8/2020 7:21 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

				Sibley Cli	lient: SCS Engineer	rs Data: Sibley				
	512	512	601	601	504	504	505	505		
12/15/2015	<0.2		<0.2							
12/16/2015					31.5		28			
2/18/2016	<0.2		<0.2		34.3		25.4			
5/25/2016	<0.2				30.2		24.6			
5/26/2016			<0.2							
8/23/2016	<0.2		<0.2		32.2		25.7			
11/11/2016	<0.2		<0.2		36.9		21.6			
2/8/2017	<0.2		<0.2		29.6		23.5			
5/3/2017	<0.2		<0.2							
5/4/2017					27.7		23.2			
8/1/2017	<0.2		<0.2		30.5		25.1			
10/3/2017	<0.2		<0.2		33.2		26.6			
11/16/2017					37.6		26			
5/17/2018	<0.2		<0.2		33.3		28.2			
6/27/2018							25.8			
11/15/2018	<0.2		<0.2		45		30.8			
1/11/2019					39.3		29.5			
3/12/2019					35.4		24.9			
5/22/2019	<0.2		<0.2		33.1		26.4			
7/16/2019					40.6					
5/18/2020		<0.2		<0.2		37.2		30.5		
7/14/2020									fication Sample	
8/26/2020								30.3 2nd Ver	ification Sample	

50.5 Zha vonneadon eample

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

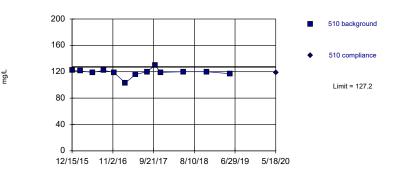


Background Data Summary: Mean=95.97, Std. Dev.=4.734, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @dalpha = 0.01, calculated = 0.9252, critical = 0.835. Kappa = 1.458 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit



Background Data Summary (based on cube transformation): Mean=1699613, Std. Dev.=238011, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8274, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/8/2020 7:20 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

Constituent: Calcium Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

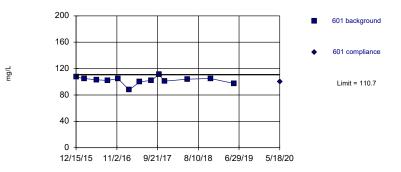


Background Data Summary: Mean=102.6, Std. Dev.=6.094, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.892, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=102.3, Std. Dev.=5.577, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8789, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

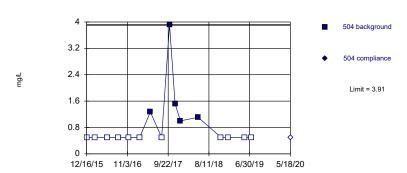
Constituent: Calcium Analysis Run 9/8/2020 7:21 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley											
1	506	506	510	510	512	512	601	601			
12/15/2015	100		122		98.1		107				
2/18/2016	99.3		121		100		105				
5/25/2016	98.3		119		98.9						
5/26/2016							103				
8/23/2016	97.2		122		103		102				
11/10/2016			119								
11/11/2016	96.5				100		105				
2/8/2017	83.6		103		86.4		87.5				
5/3/2017			116		98.4		100				
5/4/2017	96.4										
8/1/2017			120		102		102				
8/4/2017	99										
10/3/2017	105		130		110		111				
11/16/2017	96		119		101		101				
5/17/2018	94.9		120		104		104				
11/15/2018	93.4		120		110		105				
1/11/2019	93				110						
3/12/2019					108						
5/22/2019	91.7		117		104		97.4				
7/16/2019	95.3				108						
5/18/2020		92.7		119		110		99.6			

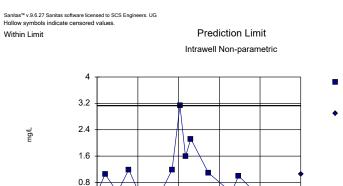
Sanitas^w v.9.6.27 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values. Within Limit

Prediction Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 16 background values. 68.75% NDs. Well-constituent pair annual alpha = 0.002051. Individual comparison alpha = 0.001026 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.



12/16/15 11/3/16 9/22/17 8/11/18 6/30/19 5/18/20

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 15 background values. 46.67% NDs. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Н

505 background

505 compliance

Limit = 3.13

Constituent: Chloride Analysis Run 9/8/2020 7:20 PM View: LF III

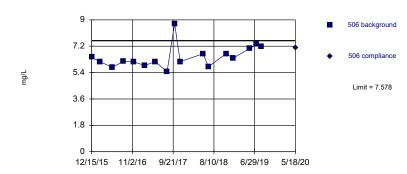
Sibley Client: SCS Engineers Data: Sibley

Constituent: Chloride Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas[™] v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit



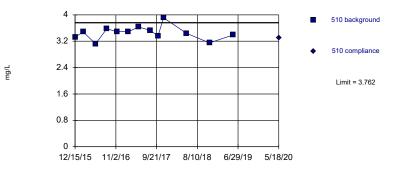
Background Data Summary: Mean=6.479, Std. Dev.=0.7774, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8712, critical = 0.851. Kappa = 1.413 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

0

Within Limit

Prediction Limit

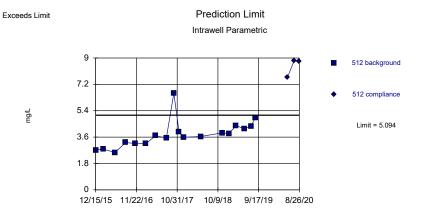


Background Data Summary: Mean=3.454, Std. Dev.=0.2034, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9481, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 9/8/2020 7:21 PM View: LF III

	Sibley Client: SCS Engineers Data: Sibley												
	504	504	505	505	506	506	510	510					
12/15/2015					6.45		3.33						
12/16/2015	<1		<1										
2/18/2016	<1		1.05		6.15		3.48						
5/25/2016	<1		<1		5.76		3.12						
8/23/2016	<1		1.19		6.16		3.58						
11/10/2016							3.49						
11/11/2016	<1		<1		6.13								
2/8/2017	<1		<1		5.89		3.49						
5/3/2017							3.63						
5/4/2017	1.27		<1		6.15								
8/1/2017	<1		1.18				3.53						
8/4/2017					5.45								
10/3/2017	3.91		3.13		8.74		3.36						
11/16/2017	1.52		1.59		6.15		3.91						
12/28/2017	1		2.12										
5/17/2018	1.11		1.09		6.69		3.44						
6/27/2018					5.8								
11/15/2018	<1		<1		6.69		3.15						
1/11/2019	<1		1		6.39								
5/22/2019	<1		<1		7.05		3.39						
7/16/2019	<1				7.33								
8/21/2019					7.17								
5/18/2020		<1		1.06		7.11		3.3					

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



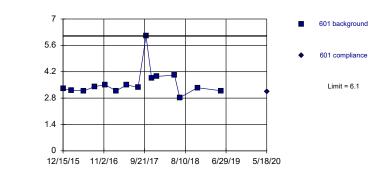
Background Data Summary: Mean=3.786, Std. Dev.=0.9366, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8846, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05123). Report Japha = 0.00188.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

mg/L

Prediction Limit Intrawell 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 15 background values. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 9/8/2020 7:20 PM View: LF III

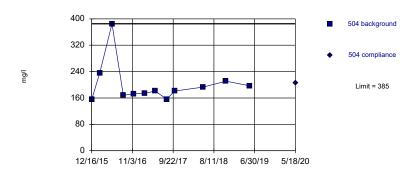
Sibley Client: SCS Engineers Data: Sibley

Constituent: Chloride Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Non-parametric

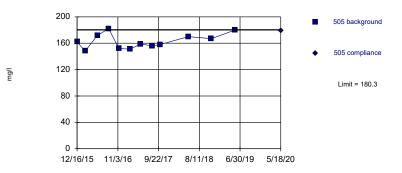


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

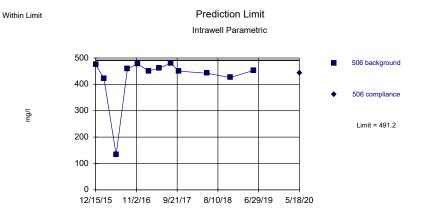


Background Data Summary: Mean=163.1, Std. Dev.=11.19, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9461, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride, Dissolved Solids Analysis Run 9/8/2020 7:21 PM View: LF III

	Sibley Client: SCS Engineers Data: Sibley												
	512	512	601	601	504	504	505	505					
12/15/2015	2.72		3.3										
12/16/2015					155		162						
2/18/2016	2.78		3.22		236		148						
5/25/2016	2.55				385		172						
5/26/2016			3.18										
8/23/2016	3.23		3.41		168		182						
11/11/2016	3.17		3.51		173		152						
2/8/2017	3.14		3.19		174		151						
5/3/2017	3.7		3.5										
5/4/2017					181		159						
8/1/2017	3.53		3.37		156		156						
10/3/2017	6.59		6.1		181		158						
11/16/2017	3.97		3.87										
12/28/2017	3.58		3.95										
5/17/2018	3.64		4.02		193		170						
6/27/2018			2.82										
11/15/2018	3.89		3.35		211		167						
1/11/2019	3.85												
3/12/2019	4.38												
5/22/2019	4.17		3.19		197		180						
7/16/2019	4.35												
8/21/2019	4.91												
5/18/2020		7.69		3.13		205		179					
7/14/2020		8.83 1st Ve	erification Sample										
8/26/2020		8.79 2nd V	erification Sample										

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Background Data Summary (based on x⁵ transformation): Mean=1.8e13, Std. Dev.=6.8e12, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8456, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

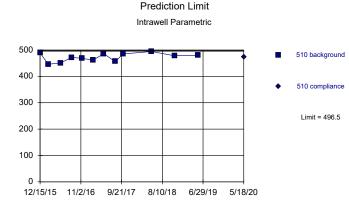
Constituent: Dissolved Solids Analysis Run 9/8/2020 7:20 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

l/gr



Background Data Summary: Mean=472.3, Std. Dev.=15.74, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.95, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

> Constituent: Dissolved Solids Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Exceeds Limit

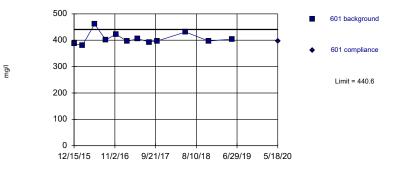
Prediction Limit Intrawell Parametric



Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=406.3, Std. Dev.=22.23, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8601, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

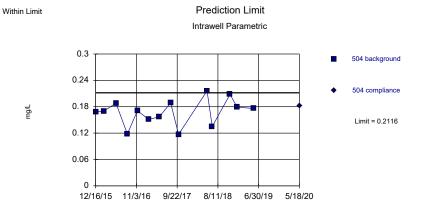
Background Data Summary: Mean=426.3, Std. Dev.=25.95, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9454, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/8/2020 7:21 PM View: LF III

	506	506	510	510	512	512	601	601				
12/15/2015	475		489		425		387					
2/18/2016	423		446		366		380					
5/25/2016	133		451		467							
5/26/2016							461					
8/23/2016	459		472		422		401					
11/10/2016			468									
11/11/2016	477				443		423					
2/8/2017	451		462		404		396					
5/3/2017			486		436		406					
5/4/2017	462											
8/1/2017			456		414		393					
8/4/2017	480											
10/3/2017	450		485		423		397					
5/17/2018	442		494		419		431					
11/15/2018	426		478		452		397					
5/22/2019	453		480		445		404					
5/18/2020		444		474		481		396				
7/14/2020						501 1st Verification						
8/26/2020						493 2nd Verificati	on Sample					

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG





Background Data Summary: Mean=0.1674, Std. Dev.=0.02979, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.958, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.





Prediction Limit

Intrawell Parametric

Background Data Summary: Mean=0.1867, Std. Dev.=0.04296, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9585, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Constituent: Fluoride Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric

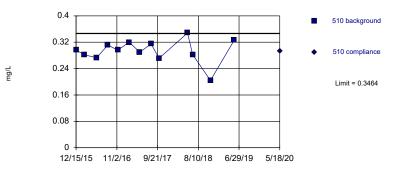


Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



mg/L

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.2934, Std. Dev.=0.03503, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9129, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Background Data Summary: Mean=0.2976, Std. Dev.=0.05377, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8104, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

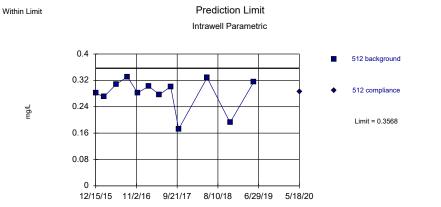
Constituent: Fluoride Analysis Run 9/8/2020 7:21 PM View: LF III

	504	504	505	505	506	506	510	510			
12/15/2015					0.296		0.296				
12/16/2015	0.168		0.164								
2/18/2016	0.17		0.174		0.29		0.282				
5/25/2016	0.188		0.143		0.324		0.273				
8/23/2016	0.118		0.265		0.312		0.311				
11/10/2016							0.296				
11/11/2016	0.171		0.177		0.298						
2/8/2017	0.151		0.217		0.317		0.32				
5/3/2017							0.29				
5/4/2017	0.157		0.16		0.338						
8/1/2017	0.189		0.206				0.315				
8/4/2017					0.359						
10/3/2017	0.117		0.124		0.182		0.271				
5/17/2018	0.216		0.247		0.32		0.348				
6/27/2018	0.135						0.282				
11/15/2018	0.208		0.212		0.199		0.204				
1/11/2019	0.179										
5/22/2019	0.176		0.151		0.336		0.326				
5/18/2020		0.182		0.202		0.308		0.293			

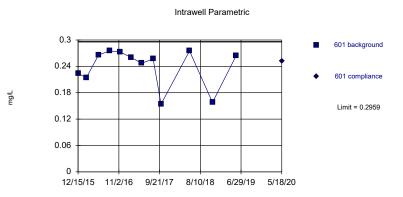
Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Within Limit



Background Data Summary: Mean=0.2799, Std. Dev.=0.04987, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8252, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05123). Report alpha = 0.00188.



Prediction Limit

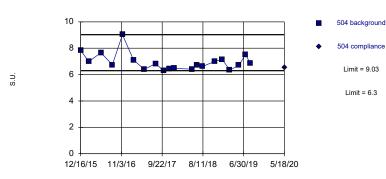
Background Data Summary (based on square transformation): Mean=0.0588, Std. Dev.=0.01866, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8225, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley Constituent: Fluoride Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas[™] v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell 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. Limits are highest and lowest of 20 background values. Well-constituent pair annual alpha = 0.00225. Individual comparison alpha = 0.001125 (1 of 3). Seasonality was not detected with 95% confidence.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell Non-parametric



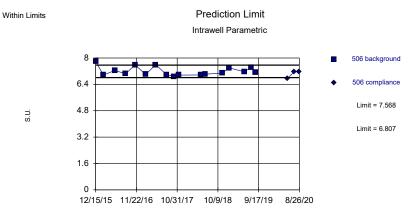
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 17 background values. Well-constituent pair annual alpha = 0.003639. Individual comparison alpha = 0.00182 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: pH Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

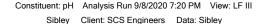
Constituent: Fluoride, pH Analysis Run 9/8/2020 7:21 PM View: LF III

	Sibley Client: SCS Engineers Data: Sibley												
	512	512	601	601	504	504	505	505					
12/15/2015	0.281		0.224										
12/16/2015					7.83		7.74						
2/18/2016	0.27		0.214		6.99		6.88						
5/25/2016	0.308				7.66		7.42						
5/26/2016			0.266										
8/23/2016	0.331		0.275		6.74		6.79						
11/11/2016	0.282		0.273		9.03		9.2						
2/8/2017	0.302		0.26		7.09		6.84						
5/3/2017	0.277		0.247										
5/4/2017					6.4		6.8						
8/1/2017	0.301		0.257		6.83		7.44						
10/3/2017	0.172		0.154		6.3		6.98						
11/16/2017					6.45		6.84						
12/28/2017					6.47		6.85						
5/17/2018	0.328		0.275		6.41		6.6						
6/27/2018					6.7		6.82						
8/8/2018					6.62								
11/15/2018	0.192		0.158		7.01		7.09						
1/11/2019					7.15		7.08						
3/12/2019					6.34		6.78						
5/22/2019	0.315		0.264		6.7		6.85						
7/16/2019					7.53								
8/21/2019					6.85								
5/18/2020		0.286		0.252		6.55		6.26					
7/14/2020								6.79	1st Verification Sample				
8/26/2020								6.96	Extra Sample				

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



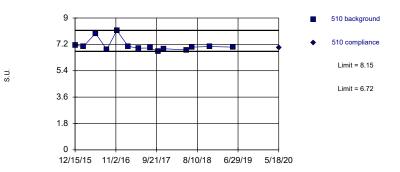
Background Data Summary: Mean=7.188, Std. Dev.=0.2694, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8664, critical = 0.851. Kappa = 1.413 (c=7), w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.



Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell Non-parametric



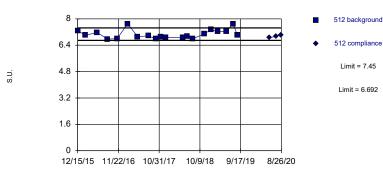
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 14 background values. Well-constituent pair annual alpha = 0.006393. Individual comparison alpha = 0.003199 (1 of 3). Insufficient data to test for seasonalized.

Constituent: pH Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

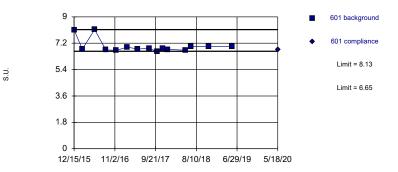


Background Data Summary: Mean=7.071, Std. Dev.=0.2785, n=20. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8734, critical = 0.868. Kappa = 1.362 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell Non-parametric

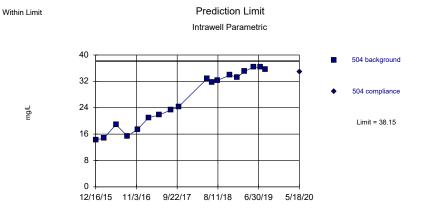


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 9/8/2020 7:21 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley												
	506	506	510	510	512	512	601	601				
12/15/2015	7.78		7.14		7.29		8.11					
2/18/2016	6.97		7.05		7		6.8					
5/25/2016	7.24		7.95		7.18							
5/26/2016							8.13					
8/23/2016	7.04		6.84		6.77		6.75					
11/10/2016			8.15									
11/11/2016	7.58				6.8		6.71					
2/8/2017	7		7.06		7.7		6.93					
5/3/2017			6.94		6.92							
5/4/2017	7.59						6.81					
8/1/2017			6.95		6.97		6.84					
8/4/2017	6.98											
10/3/2017	6.88		6.72		6.79		6.65					
11/16/2017	6.96		6.9		6.92		6.84					
12/28/2017					6.88		6.78					
5/17/2018	6.97		6.82		6.85		6.72					
6/27/2018	7.02		7.01		6.95		6.98					
8/8/2018					6.78							
11/15/2018	7.08		7.05		7.09		6.96					
1/11/2019	7.4				7.34							
3/12/2019					7.23							
5/22/2019	7.16		7.01		7.25		6.97					
7/16/2019	7.43				7.7							
8/21/2019	7.11				7.01							
5/18/2020		6.76		6.95		6.86		6.77				
7/14/2020			erification Sample			6.94 Extra						
8/26/2020		7.17 Extra	a Sample			7.02 Extra	Sample					

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Background Data Summary: Mean=26.58, Std. Dev.=8.293, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8677, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05123). Report Japha = 0.00188.

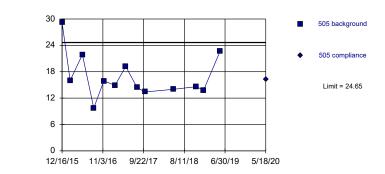
Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

mg/L

Prediction Limit





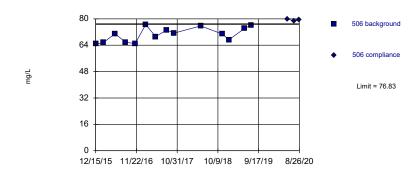
Background Data Summary: Mean=16.9, Std. Dev.=5.117, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8783, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley Constituent: Sulfate Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit Intrawell Parametric

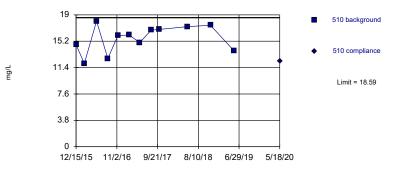


Background Data Summary: Mean=70.47, Std. Dev.=4.276, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9125, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit

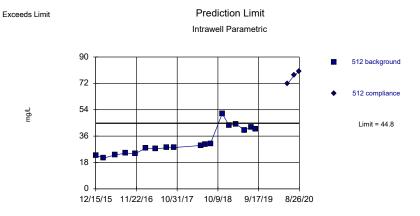


Background Data Summary: Mean=15.58, Std. Dev.=1.955, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9362, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/8/2020 7:21 PM View: LF III

	Sibley Client: SCS Engineers Data: Sibley												
	504	504	505	505	506	506	510	510					
12/15/2015					64.8		14.7						
12/16/2015	14.3		29.2										
2/18/2016	14.7		16		65.6		12						
5/25/2016	18.9		21.9		71		18.1						
8/23/2016	15.4		9.73		65.8		12.7						
11/10/2016							16						
11/11/2016	17.4		15.9		65								
2/8/2017	21		14.9		76.5		16.1						
5/3/2017							15						
5/4/2017	21.8		19.2		69.2								
8/1/2017	23.3		14.4				16.8						
8/4/2017					73.3								
10/3/2017	24.3		13.4		71.3		16.9						
5/17/2018	32.8		14		75.7		17.3						
6/27/2018	31.8												
8/8/2018	32.3												
11/15/2018	33.9		14.6		70.8		17.5						
1/11/2019	33.2		13.8		67.3								
3/12/2019	35.1												
5/22/2019	36.3		22.7		74.2		13.8						
7/16/2019	36.3				76.1								
8/21/2019	35.6												
5/18/2020		34.8		16.3		80		12.3					
7/14/2020						78.6 1st Ve	erification Sample						
8/26/2020						79.6 2nd V	erification Sample						

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

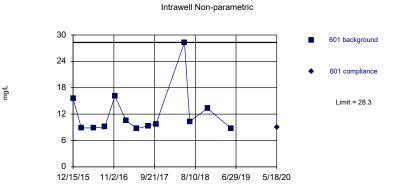


Background Data Summary: Mean=32.21, Std. Dev.=9.019, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8926, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit



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 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 9/8/2020 7:20 PM View: LF III

Sibley Client: SCS Engineers Data: Sibley

Constituent: Sulfate Analysis Run 9/8/2020 7:20 PM View: LF III Sibley Client: SCS Engineers Data: Sibley

Constituent: Sulfate Analysis Run 9/8/2020 7:21 PM View: LF III

	512	512	601	601
12/15/2015	23		15.5	
2/18/2016	21		8.87	
5/25/2016	23.1			
5/26/2016			8.85	
8/23/2016	24.4		9.11	
11/11/2016	24		16.1	
2/8/2017	27.8		10.5	
5/3/2017	27.3		8.71	
8/1/2017	28.1		9.33	
10/3/2017	28.2		9.76	
5/17/2018	29.6		28.3	
6/27/2018	30.3		10.3	
8/8/2018	30.9			
11/15/2018	51.4		13.3	
1/11/2019	43.3			
3/12/2019	44.2			
5/22/2019	40.1		8.74	
7/16/2019	42.1			
8/21/2019	41			
5/18/2020		71.6		9
7/14/2020			rification Sample	
8/26/2020		80.1 2nd Ver	erification Sample	

Sibley Client: SCS Engineers Data: Sibley Printed 9/8/2020, 7:21 PM

•				-				.,			
<u>Constituent</u>	Well	Upper Lim.	Lower Lim.	Date	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>		<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	504	0.2	n/a	5/18/2020	0.1ND	No	12	100	n/a		
Boron (mg/L)	505	0.2	n/a	5/18/2020	0.1ND	No	12	100	n/a		()
Boron (mg/L)	506	0.2	n/a	5/18/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	510	0.2	n/a	5/18/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	512	0.2	n/a	5/18/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	601	0.2	n/a	5/18/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Calcium (mg/L)	504	40.91	n/a	5/18/2020	37.2	No	16	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	505	29.31	n/a	8/26/2020	30.3	Yes	16	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	506	102.9	n/a	5/18/2020	92.7	No	15	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	510	127.2	n/a	5/18/2020	119	No	13	0	x^3	0.00188	Param Intra 1 of 3
Calcium (mg/L)	512	111.3	n/a	5/18/2020	110	No	16	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	601	110.7	n/a	5/18/2020	99.6	No	13	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	504	3.91	n/a	5/18/2020	0.5ND	No	16	68.75	n/a	0.001026	NP Intra (NDs) 1 of 3
Chloride (mg/L)	505	3.13	n/a	5/18/2020	1.06	No	15	46.67	n/a	0.001313	NP Intra (normality)
Chloride (mg/L)	506	7.578	n/a	5/18/2020	7.11	No	17	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	510	3.762	n/a	5/18/2020	3.3	No	13	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	512	5.094	n/a	8/26/2020	8.79	Yes	18	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	601	6.1	n/a	5/18/2020	3.13	No	15	0	n/a	0.001313	NP Intra (normality)
Dissolved Solids (mg/l)	504	385	n/a	5/18/2020	205	No	12	0	n/a	0.002173	NP Intra (normality)
Dissolved Solids (mg/l)	505	180.3	n/a	5/18/2020	179	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	506	491.2	n/a	5/18/2020	444	No	12	0	x^5	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	510	496.5	n/a	5/18/2020	474	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	512	466.4	n/a	8/26/2020	493	Yes	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	601	440.6	n/a	5/18/2020	396	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	504	0.2116	n/a	5/18/2020	0.182	No	14	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	505	0.2529	n/a	5/18/2020	0.202	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	506	0.3805	n/a	5/18/2020	0.308	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	510	0.3464	n/a	5/18/2020	0.293	No	13	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	512	0.3568	n/a	5/18/2020	0.286	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	601	0.2959	n/a	5/18/2020	0.252	No	12	0	x^2	0.00188	Param Intra 1 of 3
pH (S.U.)	504	9.03	6.3	5/18/2020	6.55	No	20	0	n/a	0.001125	NP Intra (normality)
pH (S.U.)	505	9.2	6.6	8/26/2020	6.96	No	17	0	n/a	0.00182	NP Intra (normality)
pH (S.U.)	506	7.568	6.807	8/26/2020	7.17	No	17	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	510	8.15	6.72	5/18/2020	6.95	No	14	0	n/a	0.003199	NP Intra (normality)
pH (S.U.)	512	7.45	6.692	8/26/2020	7.02	No	20	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	601	8.13	6.65	5/18/2020	6.77	No	15	0	n/a	0.002625	NP Intra (normality)
Sulfate (mg/L)	504	38.15	n/a	5/18/2020	34.8	No	18	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	505	24.65	n/a	5/18/2020	16.3	No	13	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	506	76.83	n/a	8/26/2020	79.6	Yes	14	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	510	18.59	n/a	5/18/2020	12.3	No	12	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	512	44.8	n/a	8/26/2020	80.1	Yes	18	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	601	28.3	n/a	5/18/2020	9	No	13	0	n/a		NP Intra (normality)

Sibley Generating Station Determination of Statistically Significant Increases CCR Landfill September 23, 2020

ATTACHMENT 2

Sanitas[™] Configuration Settings

Data	Output	Trend Test	Control Cht	Prediction Lim	Tolerance Lim	Conf/Tol Int	ANOVA	Welchs	Other Tests
Exclud	le data flag	s: i							
Data	Reading O	ptions							
🔘 In	ndividual Ob	oservations							
\bigcirc M	lean of Eac	:h:	 Month 						
\bigcirc M	ledian of Ea	ach:	Seasor	n					
Setup	Seasons	ace Handling. Process Resa							

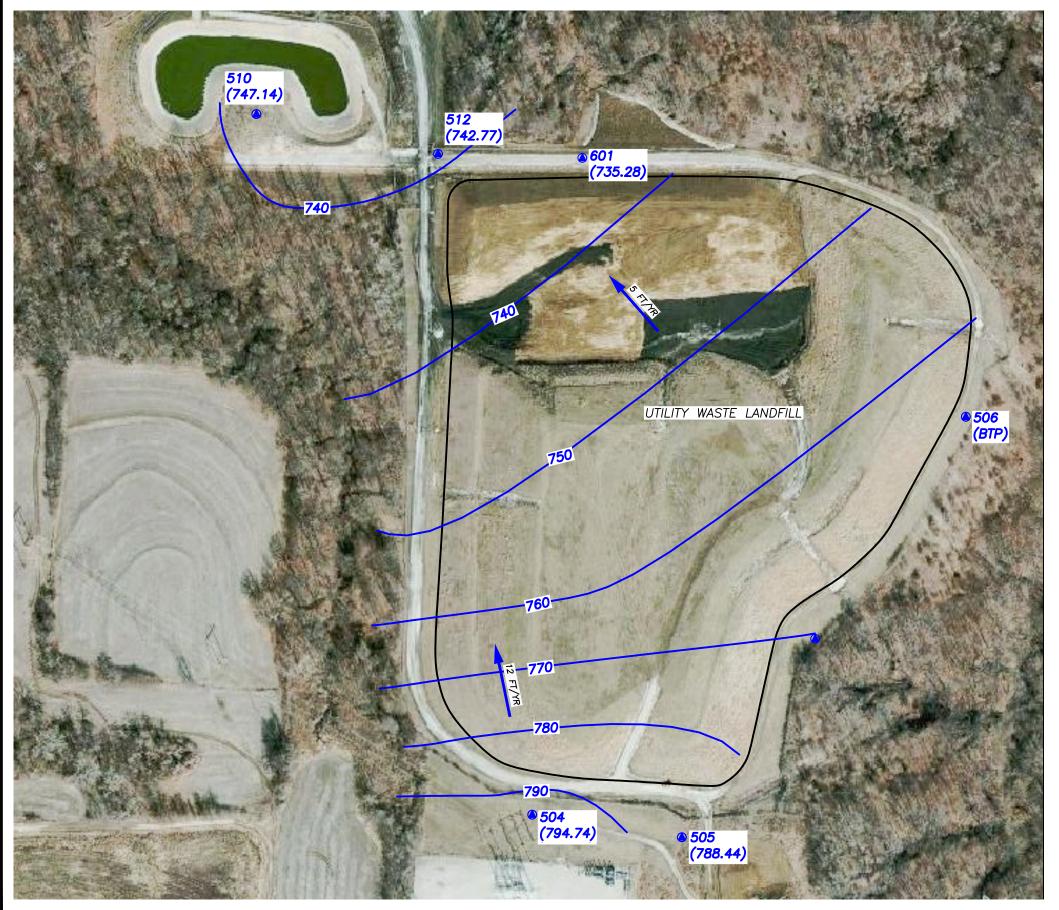
Data Output	Trend Test	Control Cht	Prediction Lim	Tolerance Lim	Conf/Tol Int	ANOVA	Welchs	Other Tests
Use Modified	I Alpha (0.02						
🗹 Test Residua	als For Normalit	y (Parametric	test only) using	3 Shapiro-Wilk/Fr	ancia 🗸 🗸	at Alpha	= 0.01	\sim
Continue	Parametric if l	Jnable to Nor	nalize					
 Never Trar Use Specif Use Best V 	r of Powers g or No Transfo nsform ic Transformati	omation						
Use Non-Parametric Test (Sen's Slope/Mann-Kendall) when Non-Detects Percent > 75 Include 95. % Confidence Interval around Trend Line Automatically Remove Outliers (Parametric test only)								
Note: there is no '' Mann-Kendall (the								's Slope /

Data 0	Dutput	Trend Test	Control Cht	Prediction Lim	Tolerance Lim	Conf/Tol Int	ANOVA	Welchs	Other Tests	
 Test for Normality using Shapiro-Wilk/Francia Itse Non-Parametric Test when Non-Detects Percent > 50 Use Attchison's Adjustment > when Non-Detects Percent > 15 						nation:				
Optional Further Refinement: Use Aitchison's v when NDs % >					hen NDs % >	Ds % > 50 Use Best W Statistic				
Use Poisson Prediction Limit when Non-Detects Percent >				90	Plot Transformed Values					
Deseasonalize (Intra- and InterWell) IntraWell Other ● If Seasonality Is Detected Stop if Background Trend Detected at Alpha = 0.05 ∨ ● If Seasonality Is Detected Or Insufficient to Test Plot Background Data ● Always (When Sufficient Data) Never ● Always Use Non-Parametric Override DF: ● Statistical Evolutions per Year: ● Automatically Remove Background Outliers					a = 0.05 ∨					
Statistical Evaluations per Year: 2 Constituents Analyzed: 7 Downgradient (Compliance) Wells: 4				2-Tailed	2-Tailed Test Mode Show Deselected Data Lighter					
Sampling Plan Non-Parametric Limit = Highest Background Value Comparing Individual Observations Non-Parametric Limit when 100% Non-Detects: 1 of 1 1 of 2 1 of 3 1 of 4 2 of 4 ("Modified California") Non-Parametric Limit when 100% Non-Detects: Non-Parametric Limit when 100% Non-Detects: Most Recent PQL if available, or MDL Most Recent Background Value (subst. methods)										

Data Output Trend Test Control Cht Prediction Lim Tolerance	Lim Conf/Tol Int ANOVA Welchs Other Tests						
Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney							
Use Modified Alpha 2-Tailed Test Mode Combine Background Wells on Mann-Whitney							
Outlier Tests							
EPA 1989 Outlier Screening (fixed alpha of 0.05)							
O Dixon's at α= 0.05 v or if n > 22 v Rosner's at α= 0.01 v Use EPA Screening to establish Suspected Outliers							
O Tukey's Outlier Screening, with IQR Multiplier = 3.0 Use	Ladder of Powers to achieve Best W Stat						
✓ Test For Normality using Shapiro-Wilk/Francia ∨ at Alpha = 0.1 ∨							
Stop if Non-Normal	Stop if Non-Normal						
O Continue with Parametric Test if Non-Normal	◯ Continue with Parametric Test if Non-Normal						
O Tukey's if Non-Normal, with IQR Multiplier = 3.0 Use Ladder of Powers to achieve Best W Stat							
No Outlier If Less Than 3.0 Times Median							
Apply Rules found in Ohio Guidance Document 0715							
Combine Background Wells on the Outlier Report							
Piper, Stiff Diagram							
Combine Wells	✓ Label Constituents						
Combine Dates	☑ Label Axes						
Use Default Constituent Names	Note Cation-Anion Balance (Piper only)						
O Use Constituent Definition File Edit							

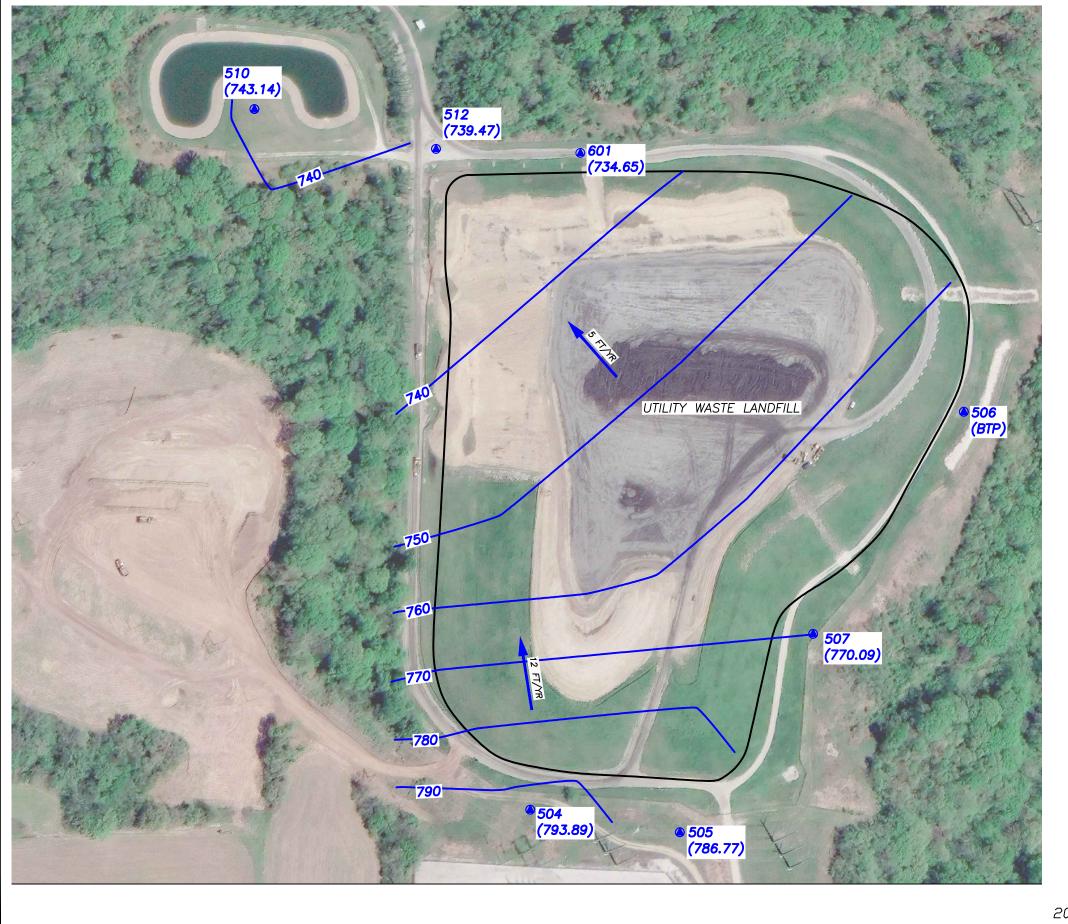
Jared Morrison December 16, 2022

ATTACHMENT 3 Groundwater Potentiometric Surface Maps



200 SCALE

LEGEND: - 760 - GROUNDWATER SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT) • 601 GROUNDWATER MONITORING SYSTEM (738.07) WELLS (GROUNDWATER ELEVATION) UTILITY WASTE LANDFILL UNIT BOUNDARY • 12 FT/R GROUNDWATER FLOW DIRECTION AND FLOW RATE (FEET/YEAR)	REV. DATE		
 BTP BELOW TOP OF PUMP NOTES: 1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010 2. GOOGLE EARTH AERIAL IMAGE. MARCH 2015. 3. BOUNDARY AND MONITORING WELL WELL LOCATIONS SHOWN ARE APPROXIMATE. 4. WATER LEVEL MEASUREMENTS COMPLETED ON MAY 18, 2020. 	SHEET TITE POTENTIOMETRIC SURFACE MAP	(MAY 2020) CCR LANDFILL	PROJECT TITE 2020 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM
	CLIENT	EVERGY MISSOURI WEST, INC.	SIBLEY GENERATING STATION SIBLEY, MISSOURI
0 200 400		FILE: Y_GWDWG	PRC 27 DSN
E FEET		12/1. RE NO.	



200 SCALE

LEGEND: - 760- GROUNDWATER SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT) • 601 GROUNDWATER MONITORING SYSTEM (738.07) WELLS (GROUNDWATER ELEVATION) - UTILITY WASTE LANDFILL UNIT	REV. DATE
BOUNDARY GROUNDWATER FLOW DIRECTION AND FLOW RATE (FEET/YEAR) BTP BELOW TOP OF PUMP NOTES: 1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FLE 16530511.00001, DATED JANUARY 2010 2. GOOGLE EARTH AERIAL IMAGE. APRIL 2020. 3. BOUNDARY AND MONITORING WELL WELL LOCATIONS SHOWN ARE APPROXIMATE. 4. WATER LEVEL MEASUREMENTS COMPLETED ON NOVEMBER 11, 2020	SHEET TITE POTENTIOMETRIC SURFACE MAP (NOVEMBER 2020) CCR LANDFILL PROJECT TITE 2020 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM
	CLIENT EVERGY MISSOURI WEST, INC. SIBLEY GENERATING STATION SIBLEY, MISSOURI
0 200 400	TITIC CONTRACTION CONTRACTION CONTRACTION CONTRACTION CONCLUSION CONTRACTION C
.E FEET	12/13/22 FIGURE NO.